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The frequency of complementary and integrative medicine methods in headache patients and their spending habits

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ABSTRACT

Background: It is known that complementary and integrative medicine (CIM) methods are especially used by patients with chronic headaches. The aim of our study is to increase the knowledge on this topic, to provide objective data about use in Turkish headache patients. **Methods:** This study included 425 patients with headache. The survey form prepared was filled in under the supervision of a health professional. The questionnaire included 2 items, about CIM methods and finance.

Results: Among the patients evaluated, 316 were female, and 109 were male. All of 52% answered yes to the question “did you ever use any CIM treatment method for headaches during your life?”. The most frequently used methods were combined (herbal + one or more other method) (29.6%), herbal (9.4%) and cupping therapy (4.2%). Among the patients that used combined methods, 26.9% had spent 30–100 TL (5–25 euro), 20.6% had spent 100–300 TL (25–70 euro), 26.9% had spent 300–500 TL (70–120 euro) and the last two groups that formed 12.6% had spent 500–1000 (120–250 euro) and >1000 TL (>250 euro).

Conclusion: Half of the patients that applied to outpatient clinic with headaches use one or more of these methods and make budgets in accordance with their income levels. Physicians should have sufficient knowledge and clinical opinions about the CIM methods used by headache patients.

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1. Introduction

There is a growing interest in complementary and integrative medicine (CIM) all over the world. Acupuncture, phytotherapy, yoga, massages, and meditation are the most common CIM methods.

Headaches and related disorders, and in particular migraine headaches are extremely common in public and these conditions lead to workforce loss [1]. The one-year prevalence is 10–18% in migraine, and 31–90% in tension-type headache. Complementary and integrative medicine is in widespread use among patients in tertiary headache care units. It is known

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that CIM methods are especially used by patients with chronic headaches. The money spent on these methods is increasing on a global scale and is reaching the expenditures on mainstream medicine. The cost of CIM is still being debated. Cost effectiveness can only be assessed for a specific complementary therapy in a particular indication within a particular health care system [2].

The evidence that is available suggests that the use of these complementary therapies represents an additional cost. Another review included 51 reports from 49 surveys in 15 countries estimates of 12-month prevalence of any CIM ranged from 9.8% to 76%; and from 1.8% to 48.7%. Studies have persistently shown that CIM users are more likely to be female, better educated, middle-aged and report poorer health status than non-users [2-4]. Successful drug-based prophylactic treatment is achievable in about two thirds of patients suffering from migraine, but side effects of pharmacological treatment often limit these medications. Furthermore, patients often avoid regular intake of drugs for prophylactic treatment of headaches. Therefore, patients are very attentive to CIM strategies in the prophylaxis and treatment of headache attacks. Complementary and integrative medicine practitioners emphasize the holistic, individualistic, empowering and educational nature of CIM. Recently, it is being emphasized that CIM methods should also be considered in the treatment of primary headaches [5].

The aim of our study is to increase the knowledge on this topic, to provide objective data that can be used to monitor development, and data about CIM that can be discussed during health education, service delivery, and planning, particularly in headache medicine.

2. Materials and methods

The study included 425 headache patients that applied to our neurology outpatient clinic between January 2015 and March 2015. The patients were evaluated by a neurologist specialized on headache. The patients with pyramidal signs, cerebellar signs, clear gaze palsy or autonomic dysfunction and with a history of head injury, encephalitis, cerebrovascular attacks, dementia or exposure to toxic agents were excluded. The patients' headaches were not classified as primary or secondary.

This study is based on the evaluation of the data obtained from the survey form (Appendix A). Because there are no publications or combined databases about CIM health expenditures in Turkey and due to the presence of unregistered CIM providers/practitioners, the approximate costs were calculated based on self-report. The study was approved by the ethics board.

2.1. Statistical analysis

The SPSS-20 program was applied. The chi-square test was used to compare the sociodemographic and clinical data. The Pearson and correlation tests were used to assess the correlation between the distribution of features across the group. *p* values smaller than 0.05 were considered to be significant.

3. Results

Among the patients evaluated 316 (74.4%) were female, and 109 (25.6%) were male. The mean age was calculated as 39 (18-82, SD 12.9). With respect to the education level of the patients, 6.8% (29) were illiterate, 29.4% (125) had primary school education (5 years), 10.6% (45) middle school education (8 years), 20.7% (88) high school education (12 years), and 32.5% (138) university education (16 years).

The monthly incomes of the group were distributed as follows: 22.8% (97) earned between 500 and 1000 Turkish Liras (TL) (100-250 euro), 34.1% (145) between 1000 and 2000 TL (250-500 euro), 24% (102) between 2000 and 3000 TL (500-750 euro), 12.9% (55) between 3000 and 5000 TL (750-1200 euro), 6.1% (26) over 5000 TL (over 1200 euro). Among the patients 52% (221) answered yes and 48% (204) answered no to the question "did you ever use any CIM treatment method for headaches during your life?". The most frequently used methods were combined (herbal + one or more other method) (29.6%), herbal (9.4%) and cupping therapy (4.2%). The other methods used were psychoreligious methods (2.4%), acupuncture (1.9%), manual therapies (1.4%), thermal springs (1.4%), aromatherapy (0.9%), and animal products (bee derived, leech, etc.) (0.7%). One person that corresponded to 0.2% was unable to clearly define what they used (Table 1).

Among the patients that used mixed methods, 26.9% had spent 30-100 TL (5-25 euro), 20.6% had spent 100-300 TL (25-70 euro), 26.9% had spent 300-500 TL (70-120 euro) and the last two groups that formed 12.6% had spent 500-1000 TL (120-250 euro) and >1000 TL (over 250 euro).

No significant relationship was identified between method use/preference and education ($p = 0.348/p = 0.40$) (Fig. 1).

No significant relationship was detected between the method use/preference of gender ($p = 0.137$). There was no correlation between genders and the money spent ($p = 0.937$). There was no correlation between gender and the method preferred ($p = 0.362$). When the correlation between gender and the frequency of method use was examined, it was observed that women with a <5000 TL income showed more interest in these methods and that men showed more interest as their income level increased (>5000 TL). As a result, the ratio of men that used these CIM methods increased as their income level increased (Fig. 2).

Table 1 - The percentages of the CIM methods.

	Frequency (n)	Percentage (%)
Herbal treatments	40	9.4
Animal products	3	.7
Acupuncture	8	1.9
Psychoreligious methods	10	2.4
Manual therapies	6	1.4
Cupping therapy	18	4.2
Aromatherapy	4	.9
Healing waters	6	1.4
Other	1	.2
Combined	126	29.6
Total	222	52.2
System	203	47.8
Total	425	100.0

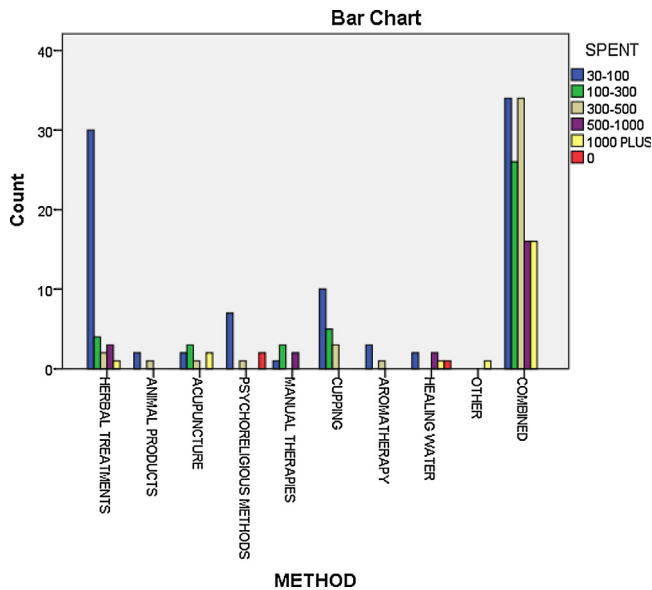


Fig. 1 – The approximate amounts of money spent according to the method (TL).

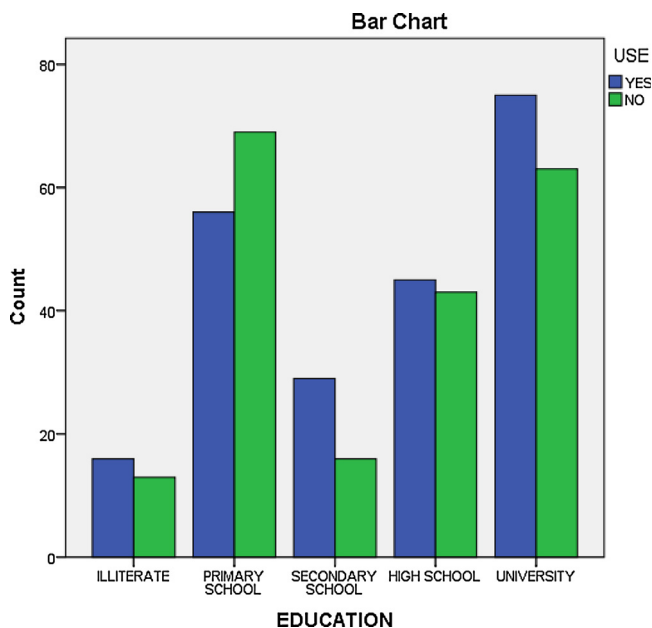


Fig. 2 – The education level and ratio of method use.

4. Discussion

Complementary and integrative medicine (CIM) used more frequently by U.S. adults with common neurological diseases than those without. Overall, 15.2% reported regular headaches (estimated 33.9 million) [6]. According to the previous prevalence studies, the most preferred CIM method is phytotherapy [7]. There are several factors that may account for the differences in CIM reported prevalence of CIM (sample design, classification of CIM, lifetime or past year use) [8].

Although the clinical efficacy of the methods has not been proven enough, these methods are applied in neurology, particularly in the treatment of headaches [5,9,10]. There is only strong evidence about the use of acupuncture in migraine prophylaxis and manual treatment for cervicogenic headaches [11]. In the last decade, some doctors have been receiving education about these methods, and 20% of the headache specialists use CIM methods during their clinical practice [12].

In a study conducted in the pediatrics outpatient clinic with 327 children, it was shown that CIM methods were most frequently used in the treatment of headache (50.8%) [4]. This study also showed that these methods were used by patients dissatisfied by or unhappy with the prescribed treatment. In a study conducted in the United States of America (USA), it was identified that headache patients with neuropsychiatric symptoms (anxiety, depression, or insomnia) use CIM treatments more than patients without any neuropsychiatric symptoms and that their health expenditures not covered by insurance were significantly higher [13]. People often preferred CIM according to their beliefs, perspective of life and illness [14].

Another study from USA shows that the sample of 34,525 adults included 6558 (18.7%, estimated 43.9 million) headache/migraine sufferers. Among the headache sufferers, 1713 (26.2%, estimated 11.5 million) had recurrent headache in the past 12 months, 2180 (34.4%, estimated 15.1 million) had severe headache in the past 3 months, and 2665 (39.5%, estimated 17.3 million) had both aforementioned conditions. Of the headache sufferers, 2428 (37.6%, estimated 16.6 million) had used CIM, including 216 (3.3%, estimated 1.5 million) for headache and 2212 (34.3%, estimated 15.1 million) for other conditions. Although CIM has long been applied for the treatment of headache, the prevalence is relatively low in the USA, particularly for less severe headache. It is important to note that close to half of headache sufferers in this analysis used CIM in conjunction with conventional treatment. Future research that can lead to a deeper understanding of the comparative effectiveness of different conventional and CIM treatment options may assist health providers and consumers in making informed decisions regarding the safe and effective management of headache [15].

According to the data obtained from our study, half of the patients that applied to outpatient clinic with headaches use one or more of these methods and make budgets in accordance with their income levels. The assessment of 110 patients with primary headaches that applied to a tertiary headache center in Turkey showed that the most frequently used method was massage and the second one was exercise [16]. In this study, similar to other studies the most frequently used method appears to be phytotherapy and combined use of methods (phytotherapy+) accounts for 75% of the entire group. No studies have been conducted on the combined use of these methods yet [5]. Additionally, the correlation of the education level, gender, and income levels with the use of these methods was also examined. The fact that cupping therapy was the most preferred treatment method after herbal treatments in our study because of this traditional treatment is a part of our culture similar to many eastern cultures and it is a treatment method accessed very easily in Turkey (not performed in hospitals) [17].

The need to seek such treatments must not be overlooked in patients with headaches, especially during chronic processes. Most headache patients use these non-pharmacological methods to reduce their stress and to get benefit from general health improving effects [18,19]. Unless specifically questioned, patients do not express whether or not they use these methods [7,13,20]. In USA, more than 50% of headache patients do not share the fact that they use CIM methods with their doctors [12]. While the ratio of discussing these methods with doctors is approximately 70% in Europe and 8% in Turkey [19]. This gains importance with respect to drug interactions (between the CIM method and prophylactic treatments) and severe side effects directly associated with the method itself. Therefore, doctors must especially ask their patients whether or not they use CIM methods. Patients that want to use CIM methods for the treatment of headaches must receive adequate information, support and guidance from their doctors. At this point, doctors (especially neurologists) and national health systems have major responsibilities.

According to the data obtained from our study, the ratio of patients using these methods increases in parallel with increase in the income levels. The money spent on these methods is increasing on a global scale and is reaching the expenditures on mainstream medicine. The cost of CIM is still being debated. The evidence that is available suggests that the use of these complementary therapies represents an additional cost and there is no evidence that their use leads to savings. The most recent comprehensive assessment of CIM use in USA found that roughly 40% of U.S. adults had used at least one CIM therapy within the past year, spending billions of dollars out-of-pocket on these therapies [21].

According to our study, it can be concluded that a significant amount has been spent within the scope of extra expenses. Studies that compare the amounts spent on CIM methods with expenditures covered by the social security institution in our country are required. Besides this, a higher number of well-planned randomized controlled studies that investigate the role/efficacy of these methods, and in particular their combined use in the treatment of headaches are also required.

5. Conclusion

Headache patients seeking alternative treatments must not be approached judgementally, we should have sufficient knowledge based on evidence-based clinical opinions about the CIM methods as a physician. In most countries including Turkey, CIM is not covered by national health insurance systems, and patients pay almost all costs out of pocket. Further comparative and wide scope trials about the amount of money spent on these methods should be planned. Such trials could provide clear guidance to patients and their healthcare providers who want to find out what benefits, potential harms and economic cost they might expect from CIM methods for treating or preventing any headache disorders.

Integration of complementary treatments in conventional care according to a multimodal therapy may be useful. However, the combination of methods has to be investigated in controlled clinical trials.

Conflicts of interest

None declared.

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Appendix A

QUESTIONNAIRE

1. AGE:

2. GENDER: MALE(1) FEMALE(2)

3. EDUCATION:

ILLITERATE(1) PR.SCHOOL (2) SEC.SCHOOL (3) HIGH SCHOOL (4) UNIVERSITY(5)

4. INCOME (MONTHLY,TL):

500-1000 (1) 1000-2000 (2) 2000-3000 (3) 3000-5000 (4) 5000 VE ÜZERİ(5)

5. DID YOU EVER USE ANY COMPLEMENTARY AND ALTERNATIVE MEDICINE METHOD FOR YOUR HEADACHES DURING YOUR LIFE?

YES (1) NO(2)

6. WHICH ONE?

- (1) HERBS (TEA, PILL OR LIQUID..ETC)
- (2) ANIMAL PRODUCTS (LEECH, BEE PRODUCTS..ETC)
- (3) ACUPUNCTURE
- (4) PSYCHORELIGIOUS METHOD (PRAYING..)
- (5) MANUAL THERAPY-MASSAGES
- (6) CUPPING (WET OR DRY)
- (7) MEDITATION (YOGA,TAI CHI..ETC)
- (8) AROMATHERAPY
- (9) HEALING WATER, THERMAL SPRING
- (10) OTHER
- (11) COMBINED

7. MONEY SPENT(TL)

30-100 (1) 100-300 (2) 300-500 (3) 500-1000 (4) 1000 PLUS (5) 0 (6)

REFERENCES

- [1] Zebenholzer K, Andree C, Lechner A, Broessner G, Lampl C, Luthringshausen G, et al. Prevalence, management and burden of episodic and chronic headaches-a cross-sectional multicentre study in eight Austrian headache centres. *J Headache Pain* 2015;16:531.
- [2] Canter PH, Coon JT, Ernst E. Cost-effectiveness of complementary therapies in the United Kingdom-a systematic review. *Evid Based Complement Altern Med* 2006;3(4):425-32.
- [3] National health expenditures. <https://www.cms.gov/NationalHealthExpendData/downloads/tables.pdf> [accessed 11.04.15]. Updated 2008.

- [4] Harris PE, Cooper KL, Relton C, Thomas KJ. Prevalence of complementary and alternative medicine (CAM) use by the general population: a systematic review and update. *Int J Clin Pract* 2012;66(10):924-39.
- [5] Gaul C, Eismann R, Schmidt T, May A, Leinisch E, Wieser T, et al. Use of complementary and alternative medicine in patients suffering from primary headache disorders. *Cephalalgia* 2009;29(10):1069-78.
- [6] Wells RE, Bertisch SM, Buettner C, Phillips RS, McCarthy EP. Complementary and alternative medicine use among adults with migraines/severe headaches. *Headache* 2011;51(7):1087-97.
- [7] Naja F, Alameddine M, Itani L, Shoaib H, Hariri D, Talhouk S. The use of complementary and alternative medicine among lebanese adults: results from a national survey. *Evid Based Complement Altern Med* 2015;2015:682397.
- [8] Adams J, Barbery G, Lui CW. Complementary and alternative medicine use for headache and migraine: a critical review of the literature. *Headache* 2013;53(3):459-73.
- [9] Ernst E. Complementary and alternative medicine in neurology: hype, hope and hazards. *Trends Neurosci* 2002;25:644-5.
- [10] Ernst E. How much of CAM is based on research evidence? *Evid Based Complement Altern Med* 2011;2011:676490.
- [11] Kristoffersen ES, Aaseth K, Grande RB, Lundqvist C, Russell MB. Self-reported efficacy of complementary and alternative medicine: the Akershus study of chronic headache. *J Headache Pain* 2013;18(14):36.
- [12] Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children: United States, 2007. *Natl Health Stat Rep* 2008;10(12):1-23.
- [13] Kenney D, Jenkins S, Youssef P, Kotagal S. Patient use of complementary and alternative medicines in an outpatient pediatric neurology clinic. *Pediatr Neurol* 2016;58:48-52. e7.
- [14] Ray PH. The emerging culture. *American Demographics*; 1997, February. Available from: <http://www.demographics.com> [accessed 10.04.98].
- [15] Zhang Y, Dennis JA, Leach MJ, Bishop FL, Cramer H, Chung VCH, et al. Complementary and alternative medicine use among US adults with headache or migraine: results from the 2012 national health interview survey. *Headache* 2017;57(8):1228-42.
- [16] Karakurum Göksel B, Coşkun Ö, Ucler S, Karatas M, Ozge A, Ozkan S. Use of complementary and alternative medicine by a sample of Turkish primary headache patients. *Agri* 2014;26(1):1-7.
- [17] Lee MS, Kim JI, Ernst E. Is cupping an effective treatment? An overview of systematic reviews. *J Acupunct Meridian Stud* 2011;4(1):1-4.
- [18] Dusek JA, Benson H. Mind-body medicine: a model of the comparative clinical impact of the acute stress and relaxation responses. *Minn Med* 2009;92:47-50.
- [19] Falci L, Shi Z, Greenlee H. Multiple chronic conditions and use of complementary and alternative medicine among US adults: results from the 2012 national health interview survey. *Prev Chronic Dis* 2016;13:E61.
- [20] Hunt KJ, Coelho HF, Wider B, Perry R, Hung SK, Terry R, et al. Complementary and alternative medicine use in England: results from a national survey. *Int J Clin Pract* 2010;64(11):1496-502.
- [21] Lavretsky H. Complementary, alternative, and integrative medicine use is rising among aging baby boomers. *Am J Geriatr Psychiatry* 2017, August.