

Research

## The Experience and Opinions of Migraineurs about Complementary/Alternative Medicine Therapies

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### Abstract

#### Introduction

Headache and migraine are among the top five conditions treated with complementary/alternative medicine (CAM) therapies, despite the scarcity of relevant scientific studies. As CAM use is initiated mostly by the patients, insight into patients' opinions about these methods may improve patient-doctor communication. We studied migraineurs' attitudes concerning CAM use.

#### Methods

Questionnaire survey of migraineurs, conducted at five Hungarian headache centers. Beside questions about willingness to use CAM in the setting of different CAM-related information, a willingness to pay approach was also used to estimate the importance of CAM for the patients. The questionnaire also included two scenarios where patients were asked to choose between conventional treatment and CAM for their migraines.

#### Results

112 migraineurs (mean age: 35.6±12.0 years; 103 women) were enrolled. Forty-nine (44%) had already tried at least one CAM. Ninety-four percent of the patients were willing to try CAM recommended for their migraines; 48% were also willing to try CAM if scientific proof of efficacy was lacking, and 31% of patients considered using CAM if they were associated with side effects. This difference was highly significant at  $p < 0.0001$ . In an imaginary scenario of two treatments being equally effective, 62% preferred CAM and 13% preferred the conventional therapy (25% having no preference). In a scenario of two treatments having the same side effects, 42% preferred CAM and 19% the conventional treatment (39% had no preference). The difference between the two scenarios was significant ( $p = 0.0153$ , Chi-square test). Previous CAM use was higher among patients with higher levels of education ( $p = 0.0028$ ), however willingness to use was similar among patients independently of the level of education.

#### Discussion

The majority of migraineurs had positive attitudes towards CAM. This is probably due to CAM being considered safer than conventional therapies. Patients with higher levels of education have a higher preference for CAM.

**Keywords:** Complementary/Alternative Medicine; Migraine; Patient Preference; Safety

#### Introduction

Migraine is the second most prevalent form of headache all over the world, and is a prominent cause of disability. In the latest edition of the Global Burden of Disease Study, migraine alone was the 6<sup>th</sup> highest cause of disability worldwide [1]. Migraine also heavily influences the sufferers' quality of life [2], and its negative effect on quality of life is significantly bigger than that of tension type headache [3].

Complementary and alternative medicine (CAM) is the umbrella term for therapies that have not been part of conventional Western medicine, but are used to restore or maintain health and/or treat or prevent diseases. In general, 'complementary' refers to treatments

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that are used along with conventional medicine, whereas 'alternative' treatments are used in place of conventional medicine [4].

The growing interest in CAM is a worldwide phenomenon. The 2002 and 2007 National Health Interview Survey found that CAM use, in particular the use of provider-based CAM therapies such as chiropractic care, massage, and acupuncture, have grown significantly in the United States [5]. Similar increases in CAM use and CAM-related expenditure were reported from Canada, several European countries, and Australia as well [6, 7]. Interestingly, a systematic review of the literature found that CAM use was higher among people with higher levels of education and higher income [8]. The same study found that headache and migraine were among the top five conditions treated with such therapies, despite the scarcity of scientific proof of efficacy.

A significant proportion of headache patients use CAM because of their condition. A German study found that as much as 82% of primary headache patients visiting specialized tertiary headache services used CAM [9]. In this survey education, income, and headache diagnosis were not correlated with CAM use; on the other hand, older age, longer disease duration, milder intensity of the pain and chronification were predictors of CAM use. CAM users were found to show greater willingness to gather information about headaches than non-users; somewhat unexpectedly more than 50% of the very same patients did not discuss their CAM activities with their treating physicians. An Italian study of migraineurs attending a tertiary headache center found a much lower prevalence of CAM use (31%), with a higher disease burden, higher number of specialist consultations and higher number of conventional medical visits being correlated with CAM use [10]. In the United States, 49.5% of U.S. adults with migraines/severe headaches reported using at least one CAM therapy within the prior 12 months [11]. Correlates of CAM use among migraineurs included anxiety, joint or low back pain, alcohol use, higher education, and living in the western United States. Also in the U.S. a study about patients with chronic migraine (a subtype of migraine, where patients have a minimum of 15 headache days per month with a minimum of 8 migraine days per month, for a period of at least 3 months) recruited from a well-known online migraine resource found that 87% were using at least one CAM method, with 48% using 3 methods or more, despite the fact that only 23% were satisfied with these methods [12].

The literature about headache patients' motivations for using CAM therapies is scarce. Therefore we set out to study Hungarian migraineurs' experience, motivations, and opinions concerning CAM.

## Patients and Methods

### Patients

Consecutive migraineurs visiting five headache outpatient services and willing to participate were involved. We used the ICHD-3 beta criteria [13] to establish the diagnosis of migraine and other headaches that some of the patients also had. All participants had migraine as their main complaint during the study.

A total of 112 migraineurs (mean age: 35.6 years, SD 12.0) were enrolled. The majority of them were female (103 women vs. 9 men). Ninety-seven patients had episodic migraine (EM) and 15 had chronic migraine (CM). In the majority of the episodic patients (51/97) migraine was the only headache problem, whereas 31 also had episodic tension type headache (TTH) and 11 had chronic TTH.

### Methods

Clinical and demographic data were collected during outpatient visits by the neurologists who examined the patients. During the same visits patients were asked to complete a questionnaire about their previous experience with CAM and their opinion about CAM therapies. In the questionnaire CAM were defined as any of the methods for treating headaches (including both acute and preventative treatments) that were outside of the scope of medical therapies; we did not make a detailed list of all CAM options, but we presented some examples of CAM 'such as, but not limited to, homeopathy, herbal medicines, yoga, reiki, energy medicine, massage, etc.' Some items of questionnaire probed the willingness of using CAM in conjunction with different amounts of information about them. In order to better understand the importance of CAM for migraineurs, a willingness to pay approach was also used: patients were asked how much they thought they would pay monthly for a 3-month CAM treatment in different settings. The amount of payment was compared to the Hungarian monthly net minimum wage (65.000 HUF at the time of the study). The questionnaire also contained two imaginary scenarios in which the migraineurs' preferences for CAM versus medicines were tested. In the first scenario the participants had to choose between a CAM and a medicine that were equally efficient against their migraines. In the second scenario they had to choose between a CAM and a medicine that had the same side effects. In these scenarios we did not specify the type of medicine or that of CAM, nor did we specify the possible side effect, as these could have changed the responses of the patients (eg. gastritis as a suggested side effect may have been important for patients who had used NSAIDs or who had had such a problem before, so they may have reacted differently from patients who had not had a similar experience).

As our patients were recruited from five different headache centers with different systems of archiving clinical data (and also somewhat different treatment strategies), we did not collect any data about the patients' previous medical treatments (acute or prophylactic) or about their previous experience with CAM.

The patients' answers were entered in an Excel table for analysis after the visits. Missing data were not supplemented. Based on their original answers, the patients' educational levels were classified according to the International Standard Classification of Education 1997 Edition (ISCED) criteria [14]. The patients' education levels according to the ISCED were then stratified into 3 major educational levels (low, medium, high); the respective ISCED levels for these were ISCED 0-2 (low), ISCED 3-4 (medium), and ISCED 5-6 (high).

## Statistics

We used Fischer's exact tests and Chi-square tests for testing the differences between the categorical variables in the case of two or more groups, respectively. We used Chi-square tests for testing the differences between treatment scenarios. Non-parametric tests (Mann-Whitney tests and Kruskal-Wallis ANOVA) were used to test for differences between continuous variables in two or more groups, and Spearman tests for correlations between continuous variables.

The study was approved by the Regional and Institutional Committee of Science and Research Ethics of Semmelweis University, Budapest, Hungary.

## Results

### Previous CAM use

Forty-nine patients (44%) had already tried at least one CAM, but only 37 specified the CAM they had used. Most (24) of these 37 patients had tried just one CAM; 10 patients had used two, and 3 patients had used three different CAM. The most commonly used CAM were acupuncture (10/37), herbal medicines (8/37), massaging (7/37), and homeopathy (5/37); Table 1 lists all CAM that were used by the patients. Interestingly, the majority of previous CAM users were female: only one male patient reported CAM use.

### Importance of Trying CAM

One hundred patients (89%) thought that trying CAM was impor-

tant for them. Patients having episodic migraine more frequently considered CAM important than patients having chronic migraine (90/97 vs. 10/15,  $p=0.0041$ ).

### Willingness to Use CAM in Different Settings

The overwhelming majority (94%) of patients were willing to use CAM if these were recommended by somebody (not necessarily by a medical professional). In a different setting, ie.If scientific evidence of the CAM's efficacy was lacking, 48% of the patients were willing to try it. In a third setting, ie.If CAM were associated with side effects, only 31% of patients were willing to try them. The difference between these settings was highly significant ( $p<0.0001$ ).

### Willingness to Pay for CAM in Different Settings

Eighty percent of the patients were willing to pay for CAM recommended for their migraines; the monthly average projected payment was 11142 HUF (SD 10359, median 10000), which is 16% of the Hungarian monthly net minimum wage. Fifty-one percent of patients were also willing to pay for CAM if scientific proof of efficacy was lacking. In this setting monthly average projected payment was 8307 HUF (SD 8254, median 5000), which is 13% of the net minimum wage. This difference was highly significant at  $p<0.0001$ . Willingness to pay data for CAM associated with side effects was not available.

### Treatment Preferences in Different Scenarios

Patients were presented with two imaginary scenarios where they could choose between a CAM and a conventional therapy. In the

**Table 1:** Complementary / alternative medicine (CAM) therapies used by our patients. The most commonly used CAM were acupuncture, herbal products, massaging and homeopathy.

CAM name	Number and percentage of all CAM users
acupuncture	10 (27%)
herbal products	8 (21.6%)
massaging	7 (18.9%)
homeopathy	5 (13.5%)
diets	2 (5.4%)
kinesiology	2 (5.4%)
Silva method ('mind control')	2 (5.4%)
yoga	2 (5.4%)
herbal products, massaging, capsaicin-containing natural product	1 (2.7%)
chiropractor	1 (2.7%)
cupping therapy	1 (2.7%)
energy medicine	1 (2.7%)
meditation	1 (2.7%)
natural healer	1 (2.7%)
relaxation	1 (2.7%)
vitamins	1 (2.7%)
other (not specified by patients)	6 (16.2%)

case of the two therapies being equally effective, 62% preferred CAM and 13% preferred the conventional therapy (25% having no preference). In the case of the two therapies' side effects being equal, 42% preferred CAM and 19% the conventional therapy (with 39% having no preference). The difference of CAM preference was significant between the two scenarios ( $p=0.0153$ , Chi-square test).

### **The Relation between Educational Levels and Opinions about CAM**

There was no difference in the perceived importance of CAM between the different educational levels. A significantly higher proportion of patients with higher education levels reported previous CAM use (14% of low, 43% of middle and 60% of high education level patients reported previous CAM use,  $p=0.0028$ ). There was no difference in the percentage of patients willing to try CAM if recommended by somebody between the different education levels. Interestingly, there was a significant ( $p=0.0038$ ) difference between willingness to pay for CAM recommended by somebody: patients with higher education levels were more likely to pay for CAM than patients with lower levels of education. Patients with higher levels of education were disposed to pay more for a CAM if recommended by somebody than patients with lower levels of education (15329 HUF /SD: 13458, median: 10000/ vs. 7646 HUF /SD: 5331, median: 8750/;  $p=0.0069$ ). There was no significant difference between the education levels in the percentage of patients willing to try CAM if its efficacy had not been proven. Interestingly, the difference between willingness to pay for CAM if its efficacy had not been proven was significant at  $p=0.0078$  between the different educational levels: patients with higher education levels were willing to pay more than patients with lower education levels (11111 HUF /SD: 10848, median: 7500/ vs. 8000 HUF /SD: 2739, median: 10000/). The difference in the percentage of patients willing to use CAM if it had side effects was not significant between the education levels, with 32% to 33% of patients giving a positive answer.

### **The Relation between Migraine Diagnoses and Opinions about CAM**

The perceived importance of CAM was higher in patients with episodic migraine than in patients with chronic migraine (EM 93% vs. CM 67%,  $p=0.0041$ ). A significantly bigger proportion of EM patients was willing to pay for a CAM recommended by somebody than the proportion of CM patients willing to pay (EM 85% vs CM 53%,  $p=0.0135$ ). Interestingly, those chronic migraine patients who gave a positive answer seemed to be disposed to pay more than those with episodic migraine (EM 10781 HUF /SD: 9804, median: 10000/ vs. CM 14938 HUF /SD: 15736, median 10000/), but the difference was not statistically significant. There were no other significant differences between the EM and CM patients' answers.

### **Female Migraineurs' Opinions about CAM**

We compared the answers of female migraineurs to those of the whole sample (Table 2). There were no statistically significant differences.

### **Differences between the Opinions of Previous CAM Users and Non-Users**

There were no differences between previous CAM users and non-users in the perceived importance of CAM, the willingness to try CAM in different settings (ie. willingness to use CAM if recommended, if CAM efficacy was not proven, and if CAM were associated with side effects), and also no difference between CAM users' and non-users' preferences in the two treatment scenarios. Previous CAM users were significantly more willing to pay for CAM if recommended by somebody than non-users ( $p=0.0318$ ); willingness to pay for CAM with no proven efficacy was not statistically different between the two groups. In previous non-users the difference of CAM preference was significant between the two treatment scenarios ( $p=0.05$ ), because in case of a CAM and a medical therapy having the same side effect profile they would be more likely to choose a medical therapy and less likely to choose CAM; in patients who had tried CAM before there was no statistical difference between CAM preference in the two scenarios.

### **Discussion**

The present study found that migraineurs generally have a very positive attitude toward CAM; the majority of them would consider using CAM if recommended to do so, and would pay a significant amount (up to 16% of the monthly minimum wage) for such therapies. Migraineurs' attitude is less positive towards CAM with no scientific proof of efficacy, and is markedly less positive towards CAM having side effects. The choice of CAM versus conventional therapies seems to be driven by considerations of safety rather than considerations of efficacy. Patients with higher education levels have a higher preference for CAM and would pay more for these therapies. Patients with previous experience with CAM are more likely to choose CAM in certain circumstances.

Although, as outlined in the Introduction, CAM use is widespread among migraineurs, data about the attitudes of migraineurs towards CAM are scarce. Our findings about migraineurs' favorable attitude are in line with the findings of an Italian survey, where 80% of migraine patients were interested in trying CAM, with no significant difference emerging between previous CAM users and non-users [10]. Our findings about previous CAM use and the CAM types that patients chose are also similar to previous international data as recently reviewed by Adams et al [15]. The finding that patients with higher levels of education have a higher preference for CAM is in line with the observations in the U.S [11], although this may not be universal, as in a German and an Italian survey a similar association was not found [9, 10].

In the present sample, 94% of patients were willing to use CAM, but only 48% were willing if they were told that scientific proof of efficacy was lacking. Patients may not be aware that currently most CAM therapies still need to be studied scientifically, and data about efficacy and safety are available only for a handful of them. There is evidence that acupuncture [16], relaxation and biofeedback techniques [17], certain herbals and nutraceuticals, such as feverfew, butterbur, riboflavin, coenzyme Q, magnesium [18], as

**Table 2:** Results in the whole sample and in female migraineurs. Data are presented as percentage of the respective patient sample if not otherwise indicated. There were no significant differences between the whole sample's and the female migraineurs' results. n.a. not available

	Whole sample	Female migraineurs
<b>Previous CAM use</b>	44%	45%
<b>Previous CAM use specified</b>	37 patients	36 patients
<b>Most commonly used CAM</b>	acupuncture (10/37), herbal medicines (8/37), mas- saging (7/37, and homeopathy (5/37)	acupuncture (10/36), herbal medicines (8/36), mas- saging (7/36), and homeopathy (5/36)
<b>Importance of trying CAM</b>	89%	89%
<b>Importance of trying CAM in EM vs CM patients</b>	93% vs. 67%, p=0.0041	92% vs. 67%, p=0.0069
<b>Willingness to use CAM in different settings</b>	if CAM recommended: 94% if CAM has no proven efficacy: 48% if has side effects: 31%	if CAM recommended: 93% if CAM has no proven efficacy: 47% if has side effects: 33%
<b>Willingness to pay for CAM in different settings</b>	if CAM recommended: 80% if CAM has no proven efficacy: 51% if has side effects: n.a.	if CAM recommended: 83% if CAM has no proven efficacy: 52% if has side effects: n.a.
<b>Treatment preferences in different scenarios:</b>	if CAM and conventional therapy equally effective: CAM 62%, conventional therapy 13% if CAM and conventional therapy has equal side effects: CAM 42%, conventional therapy 19% Difference between preferences in the two sce- narios: p=0.0153	if CAM and conventional therapy equally effective: CAM 62%, conventional therapy 13% if CAM and conventional therapy has equal side effects: CAM 42%, conventional therapy 18% Difference between preferences in the two sce- narios: p=0.0259
<b>The relation between educational levels and opin- ions about CAM</b>		
a. <b>Previous CAM use</b>	14% of low, 43% of middle and 60% of high educa- tion level patients Difference between the educational levels: p=0.0028	17% of low, % of middle and 57% of high educa- tion level patients Difference between the educational levels: p=0.0191
b. <b>Willingness to try CAM if recommended</b>	86% of low, 92% of middle and 95% of high educa- tion level patients Difference between the educational levels: (p=ns)	95% of low, 91% of middle and 95% of high educa- tion level patients Difference between the educational levels: p= ns
c. <b>Willingness to pay for CAM if recommended</b>	57% of low, 80% of middle and 95% of high educa- tion level patients Difference between the educational levels: p=0.0016	61% of low, 83% of middle and 95% of high education level patients Difference between the educational levels: p=0.0078
d. <b>Willingness to try CAM if efficacy is not proven</b>	38% of low, 45% of middle and 55% of high educa- tion level patients Difference between the educational levels: p=ns	44% of low, 46% of middle and 57% of high educa- tion level patients Difference between the educational levels: p=ns
e. <b>Willingness to pay for CAM if efficacy is not proven</b>	24% of low, 51% of middle and 68% of high educa- tion level patients Difference between the educational levels: p=0.0051	28% of low, 52% of middle and 68% of high educa- tion level patients Difference between the educational levels: p=0.0206
f. <b>Willingness to try CAM if it has side effects</b>	33% of low, 31% of middle and 33% of high educa- tion level patients Difference between the educational levels: p=ns	39% of low, 30% of middle and 35% of high educa- tion level patients Difference between the educational levels: p=ns

well as regular physical activity [19], and certain neurostimulation methods [20] are effective in migraine, but the efficacy and safety of other CAM has yet to be verified. This indicates that patients' preference of CAM is probably not based on informed decision. It is interesting to note that patients with higher levels of education were more disposed to pay for CAM than patients with lower education levels, even if the efficacy of CAM had not been proven. Although willingness to pay probably reflects dedication to try, this difference between the education levels may also simply reflect the economic difference between them: patients with higher education probably have higher incomes and therefore may find it easier to pay for these therapies. It is also important to note, that with the widespread use of the internet patients can find an enormous amount of information. Education levels may not be an important factor in the patients' ability to do research about migraine and its possible treatment options, although it seems plausible that higher levels of education could be helpful in understanding and interpreting the data the patients found.

Although outside the scope of our study, it is worthwhile to review evidence about CAM use nondisclosure, as this may be one of the factors limiting informed decision. Research has shown that many migraineurs do not discuss their CAM use with their health care providers: in the U.S. the National Health Interview Survey found that more than 50% of CAM-using migraineurs did not discuss their CAM use [11], and the same was true for 61% of patients in an Italian survey [10]. There are several factors that can contribute to the patients' non-disclosure of CAM use towards their health-care providers. The most important factor is the perceived receptivity of clinicians about the patients' CAM use, according to a study done in the southwestern US among patients, clinic staff members, and primary care clinicians. This study found that an accepting and nonjudgmental attitude by the clinician contributed to the openness of the patients [21]. On the other hand, patients did not expect clinicians to be experts on CAM, and the clinicians' supposedly limited knowledge of CAM was not a barrier to discussing patients' CAM use. From the clinicians' point of view, their level of concern about lack of scientific evidence of effectiveness and safety of CAM influenced their communication about CAM with patients. Interestingly, most patients expected that clinicians initiated the discussion about CAM, while many clinicians underestimated CAM use because patients did not bring this topic up. In another study 75% of non-disclosure patients stated that they did not think or need to discuss CAM use with their healthcare providers [22]. The same study also found that nondisclosure was related to poor parent-provider relationship.

Perhaps our most interesting finding is migraineurs' preference of CAM over conventional therapies if the two therapies are equally effective, and the much smaller preference of CAM if CAM has the same side effects as conventional therapies. This, together with the decreasing propensity of patients to use CAM if these are associated with side effects seems to indicate that migraineurs prefer CAM because they consider them safer than conventional therapies. This finding is interesting because it highlights an important

difference between patients and healthcare professionals. When choosing a therapy healthcare professionals take into account a lot of factors such as the indications, contraindications, efficacy, side effects, and possible interactions of the therapy, as well as comorbid conditions and previous experience with treatments. When treating migraineurs, the majority of whom are young and healthy, efficacy is probably among the most important factors, and is surely discussed with the patients, while safety issues may be left unmentioned.

It is tempting to speculate about the reasons why patients consider CAM safer than conventional therapy. A limited knowledge about health and medicine (compared to that of healthcare professionals), and the quantity and content of publicly accessible information may be important factors. A major caveat in this regard is illustrated by a survey about English daily journals' coverage about medicine which found that papers were quite critical about medical issues and therapies (the ratio of positive articles to critical articles was 1.0), while the same journals were unanimously positive about CAM [23]. The use of internet resources has changed the way of obtaining information: in contrast to the pre-internet age, the decision of how and what kind of material is accessed and used has passed to the actual users of Internet rather than being the privilege of authors or professional experts [24]. This positive change has certain dangers, too. A survey of web-based information about herbal medicines in the treatment of cancer has found that most sites had a low quality in a number of indicators, with commercial sites having the most inaccurate or misleading information, and emphasizing only the positive aspects of herbs [25], a finding that has been substantiated and generalized to other CAM and other diseases by a recent systematic review [26]. Moreover, widely used social networks that use reader feedback such as likes or up votes can reinforce the spread of uncontrolled health information [27].

Another factor in preferring CAM may be an unsatisfactory previous experience with conventional therapies, both in terms of efficacy and, perhaps more importantly, safety and side-effects [12]. The barriers of patient-clinician communication about CAM outlined in a previous paragraph further limit the patients' possibility of obtaining reliable information about the potential effects (both positive and negative) of CAM use. It is important to note that several types of CAM including, but not limited to, diets, herbal products, vitamins and nutraceuticals can also have side effects [28] and their concurrent use with medicines can lead to unfavorable interactions [29]. Due to content providers' freedom to divulge information without quality control, and to current practices of obtaining internet-based information as outlined above, these possible drawbacks of CAM use may not be easily available for, and appreciated by the patients. On the whole, it seems probable that patients' decisions about CAM use are not based on scientifically sound information, but rather on a combination of facts, myths, beliefs, fears, and hopes. Clinicians wishing to help their migraine patients should bear this in their mind and try to communicate with patients showing nonjudgmental interest and giving information which is both accurate and reassuring.

## Limitations

There are a number of limitations of the present study. Although the sample size was acceptable, female patients and episodic migraine patients were overrepresented; therefore conclusions regarding male patients and chronic migraine patients should only be made with caution. The female predominance may partly be explained by a smaller attendance of male patients at the headache services than it would be expected from epidemiological data. In the Headache Service at Semmelweis University (that contributed to the highest amount of patients for this study) migraineurs' male: female ratio in the year of the study (2014) was 1:4.85, which is contrasted with 1:2.55 found in a representative survey of Hungarian migraineurs[30]. Another reason may be a smaller willingness of our male patients to participate in the present study, but this cannot be formally proven because we did not collect reasons of non-participation from those patients that chose not to take this survey.

On the other hand, the male: female ratio of our sample is not very different from previous reports. In previous studies of CAM use in migraine, female predominance was a universal finding. In a Turkish study of CAM use in primary headache [31], 95 of 110 patients were female, which is almost identical to our findings. In an American study of chronic migraine, 92.8% of 2710 participants were female [12]. In a study done in Germany and Austria 75.5% of 432 primary headache patients were female, while in a parallel group of 194 low back pain patients 61.9 were female [9]. Most of this study's patients were migraineurs but data about their male: female ratios in the migraineur subgroup are not available. In an Italian study of 481 consecutive migraineurs presenting at a headache service for the first time, 77.1% were female [10].

Another limitation is the fact that the survey was done in a Hungarian context, so socio-cultural characteristics may limit the generalization of our findings to other countries. A further limitation is the fact that we did not collect information about the patients' previous experience with conventional and CAM treatments, so whether these influenced their opinions cannot be analyzed. Finally, in order to minimize responder burden (which can have a threshold effect on response rate [32]), a number of important data, such as comorbidities including other pain syndromes and psychiatric conditions, economic and social status, previous experience with therapies (both conventional and CAM), and access to and experience with healthcare facilities, were not collected, and their effect on CAM use and preferences in this sample cannot be addressed. Future research with a larger number of patients and overcoming these limitations is necessary to understand migraineurs' attitudes towards CAM and also towards conventional therapies in order to better understand – and better treat – our patients.

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