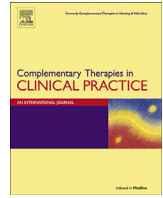




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Reasons for and perceived benefits of utilizing complementary and alternative medicine in U.S. adults with migraines/severe headaches

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ABSTRACT

We estimated prevalence rates of complementary and alternative medicine (CAM) use by reason for use (treatment, wellness, or both), and examined perceived benefits of using CAM among U.S. adults with migraines/severe headaches. The 2012 National Health Interview Survey, which represents non-institutionalized adults with migraines/severe headaches ($n = 4447$ unweighted), were used. Of the study sample, 41.3% used some form of CAM in the past year. Nearly a third of them (29.6%) used CAM for wellness only and 59% used CAM for both wellness and treatment. In given six self-reported perceived benefits, those who used CAM for wellness only and for a combination of both treatment and wellness had higher likelihoods of reporting benefits for all categories ($p < 0.05$), except for better sleep, when compared to those who used CAM for treatment only. CAM use was associated with an improvement in several health-related quality of life outcomes in U.S. adults with migraines/severe headaches.

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1. Introduction

Migraine headache is a common disorder, with a prevalence of 14.2% in the United States (U.S) and 14.7–18.5% globally [1–4]. Medications recommended to treat acute migraine include nonsteroidal anti-inflammatory drug (NSAIDs), triptans, ergotamines, and antiemetics [5]. Prophylactic agents, including anti-convulsants, beta-blockers, botulinum toxin, candesartan, and tricyclic antidepressants, have fairly low efficacy rates with many adverse effects and contraindications [6–8].

Complementary and alternative medicine (CAM) is often used for self-treatment and prevention of headaches. Existing literature [18] shows promising efficacy and effectiveness of acupuncture [9,10], biofeedback [11,12], dietary supplements (e.g., butterbur, feverfew, riboflavin, and coenzyme Q10) [13,14], massage [15], relaxation [15], spinal manipulation [16], and Tai Chi [17]. The American Headache Society/American Academy of Neurology (AHS/AAN) guidelines for migraine prevention also include

butterbur, riboflavin, magnesium, feverfew, and coenzyme Q10 as effective treatments to consider [18].

Patients with migraines/headaches may turn to CAM more frequently than those without [19]. In the U.S. in 2007, approximately 49.5% of adults with migraines/severe headaches reported using at least one CAM modality in the past 12 months compared to 33.9% of those without migraines/headaches [20]. Mind-body therapy (e.g., meditation and yoga) was the most popular CAM type [20]. Rhee and Harris [19] recently showed that 44.4% of adults with migraines/severe headaches used CAM, women used CAM more frequently than men, and that the most common modalities used were herbal supplements, massage and chiropractic/osteopathic [19]. The study also found that moderate mental distress (MMD) was significantly more common in adults with migraines/headaches and in those that used CAM, and that CAM use decreased the odds of MMD in women but not men [19].

Despite potential benefits of CAM and high prevalence of CAM use among adults with migraine or chronic headache, relatively little is known about the reasons for CAM use (for treatment, wellness, or both) and perceived benefits of CAM use among this population. Because adults often use CAM for health promotion, self-care, and/or well-being, we hypothesize that perceived benefits may be different depending on the reasons for utilizing CAM

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among adults with migraines/severe headaches.

The objectives of this study are to examine 1) if socio-demographic and health-related characteristics differ by reason for CAM use (treatment, wellness, or both); 2) the prevalence of CAM use and specific types of CAM based on reason for use; and 3) the perceived benefits of CAM when used for wellness compared to treatment among U.S. adults with migraines/severe headaches. We used the 2012 National Health Interview Survey (NHIS), which contains the most up-to-date population-based national data on CAM use in the U.S. Answering these questions fills in gaps in existing literature as it helps clinicians and policymakers understand the potential role of CAM in patient-centered care.

2. Methods

2.1. Data source and study sample

We collected data from the 2012 National Health Interview Survey (NHIS), which is administrated by the National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC) [21]. The NHIS is a cross-sectional in-person interview survey conducted annually, and it represents health care trends among non-institutionalized civilians in the U.S [21]. In addition, the NHIS uses a supplemental questionnaire that extensively collects information regarding the patterns of CAM use every five years, which is sponsored by the National Center for Complementary and Integrative Health (NCCIH) of the National Institutes of Health (NIH) [22]. NHIS includes a question, “During the past three months, did you have severe headache or migraine?” to survey respondents (yes/no). Using this information, our analytic sample included adults with migraines/severe headaches ages 18 or older and had complete data for all covariates ($n = 4447$ unweighted). The survey response rate was 61.2%, and the study sample represents a non-institutionalized U.S. adult population [23]. Our study was exempted from the Institutional Review of Board review at the University of Minnesota as we used de-identified data that are publicly available.

2.2. Measures

Use of CAM. NHIS asks about the use of 36 different CAM types in the past 12 months [24,25]. We categorized them into top 20 most common CAM types into the following five groups based on previous CDC technical reports [24,25]: alternative medical systems, biologically-based therapies, manipulative body therapies, mind-body therapies, and energy healing therapies (see Table 2 for examples). We created a binary variable (yes/no) for each group and the overall use of any CAM in the preceding 12 months.

Reasons for CAM Use. The NHIS respondents were also asked about their top three CAM types used. Among the use of top three CAM types, the respondents were asked if they used CAM for treating one or more specific health problems, symptoms, and/or conditions. We aggregated “yes” responses to create an indicator variable to represent past year CAM use for treatment. In addition, the respondents were also asked whether they used each of top three CAM types for: improving energy, general wellness, enhancing immune function, improving athletic/sports performance, or improving memory. We aggregated “yes” responses for any of these five questions to create an indicator variable to represent past year CAM use for wellness. Using these two indicator variables, we constructed a categorical variable to classify reasons for CAM use: treatment only, wellness only, and a combination of both treatment and wellness.

Perceived Benefits of CAM. For each of the top three CAM types used in the past year, respondents were asked whether or not the

CAM use provided specific benefit in several categories, including: (1) better sense of control over health; (2) reduced stress/relaxation; (3) better sleep; (4) feeling better emotionally; (5) improved overall health/feeling better; and (6) improved relationships with others. Using the information, we created indicator variables for perceived benefits of CAM use in the past year.

Covariates. We selected a number of covariates, based on the socio-behavioral wellness model [26,27]. This model suggests that, “a health-promoting lifestyle is a function of the predisposition to engage in healthy lifestyles, factors which enable or hinder a healthy lifestyle, a perceived need for healthy lifestyle, and personal health practices [27](p. 37)”. We included the following predisposing factors: age, gender, race/ethnicity, marital status, and educational attainment. For enabling factors, we included: employment status, health insurance coverage, geographic region, and family income. Need factors included: self-reported health status, moderate mental distress using the K6 scale [28], multiple chronic conditions [29], and functional limitations. Lastly, we included personal health practices: regular exercise, alcohol use, and smoking status [19].

2.3. Data analysis

First, we examined the extent to which socio-demographic and health-related characteristics differed by CAM use and reasons for CAM use among adults with migraines/severe headaches. Next, we estimated the prevalence of CAM use by CAM type and reason for CAM use in the past 12 months. We used cross-tabulations and Bonferroni-corrected, design-based *F*-tests to investigate the differences by reason for CAM use. Third, we ran six different multivariate logistic regression models; we estimated the odds of perceived benefits of CAM by reasons for use. The models were adjusted for all covariates, and we performed all analyses using Stata 13.1 (Stata Corp., College Station, Texas) [30], and accounted for complex sampling designs of the NHIS (e.g., unequal probability of selection, clustering, and stratification) using *svy* commands in Stata [21].

3. Results

3.1. Characteristics of the study sample and differences by reason for CAM use

Overall, 41.3% of adults with migraines/severe headaches reported utilizing CAM in the past 12 months. Of this population, 11.4% reported CAM use for treatment alone, 29.6% reported CAM use for wellness alone, and 59.0% used CAM for both treatment and wellness. Characteristics of CAM users were significantly different than those who did not use CAM in all predisposing, enabling and need factors, and personal health practices, except moderate mental distress and functional limitations (see Table 1). Regarding whether or not adults with migraines/severe headaches used CAM for treatment, wellness, or a combination of both treatment and wellness, the only predisposing factors that were significantly different were age, race/ethnicity, and marital status. Enabling factors and personal health practices were not significantly different by reason for CAM use. In need factors, moderate mental distress, multiple chronic conditions, and functional limitations were significantly different by reason for CAM use.

3.2. Prevalence rates of overall CAM use and specific types of CAM by reason

Table 2 presents the prevalence of specific types of CAM use and the reason for CAM use in the preceding 12 months. Regardless of

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