



Utilization and perceived benefits of homeopathy and herbal therapies in U.S. adults: Implications of patient-centered care



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ABSTRACT

We evaluated reasons for and perceived benefits of using homeopathic and herbal therapies in U.S. adults. Data were collected from the 2012 National Health Interview Survey, which represents non-institutionalized U.S. adults ($n = 33,167$ unweighted). In the past 12 months, 18.6% (41.95 million) of U.S. adults reported using either homeopathy and/or herbal therapies. Among these users, 34.8% and 5.1% used them for wellness only and treatment only, respectively. 60.1% reported using homeopathic and herbal therapies for a combination of both treatment and wellness. In four out of seven self-reported perceived benefit measures, users for wellness only and for a combination of both treatment and wellness had higher likelihood of reporting benefits, compared to those who used CAM for treatment only ($p < 0.001$). Overall, homeopathic and herbal therapies maybe a promising lifestyle approach to enhance health-related quality of life in U.S. adults, but future research is needed to establish safety and efficacy issues.

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1. Introduction

Complementary and alternative medicine (CAM) is widely used among U.S. adults [1], despite the fact that safety and efficacy of several CAM therapies remains controversial [2]. According to the 2012 National Health Interview Survey (NHIS), which contains the most up-to-date population-based patterns on the use of CAM in the U.S. adults ages 18 and over, the prevalence of any CAM use in the past 12 months was 33.2% [1].

Homeopathy is an alternative medical system, which was developed in Germany in the 18th century [3,4]. While homeopathic remedies are expressly regulated by the US Food and Drug Administration, the FDA does not assess the safety or effectiveness of homeopathy [3]. The practice of homeopathy has developed outside the realm of conventional medicine, and it is still commonly used in many European countries [4]. Herbal therapies, on the other hand, are herbal products used for medical purposes, and are widely used CAM products for primary care worldwide [5].

Previous research highlights prevalence rates of utilizing homeopathy or herbal therapies. Specifically, some studies focus on efficacy of homeopathy or herbal therapies using rigorous randomized controlled trials (RCTs) [6–8], whereas other studies investigated safety matters of these CAM modalities [9–11]. However, these RCT and systematic review studies are often limited due to relatively homogeneous human subjects. In addition, findings from RCT studies often have an issue with generalizability at the population level. Furthermore, no study was conducted to understand reasons for and perceived benefit outcomes using these CAM modalities at the population-level.

The objective of the present study is to examine the primary reason(s) (e.g., treatment, wellness, or both) and perceived benefit outcomes of U.S. adults reporting use of homeopathy and/or herbal therapies in the 2012 NHIS. Using data from the 2012 NHIS, we sought to answer the following research questions: 1) What are the prevalence rates of utilizing homeopathy and herbal therapies among U.S. adults and how do these rates differ by reason for use (treatment, wellness, or both)? 2) Do socio-demographic and health-related characteristics differ by homeopathy users, herbal therapies users, or both homeopathy and herbal therapies users, compared to adults who did not use any of these interventions?

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And, 3) What are perceived benefits of using homeopathy and herbal therapies? Are benefits also varied by reason for use? Answering these questions fills in gaps in existing literature, as it helps clinicians and policymakers understand the potential roles of homeopathy and herbal therapies in patient-centered care.

2. Methods

2.1. Data source and study sample

We used data from the 2012 National Health Interview Survey (NHIS), which is overseen by the National Center for Health Statistics of the Centers for Disease Control and Prevention [12]. The NHIS is a cross-sectional in-person interview survey conducted every year, and it represents health care trends in U.S. civilians, who are not institutionalized [12]. Furthermore, sponsored by the National Center for Complementary and Integrative Health (NCCIH) of the National Institutes of Health (NIH) [13], the NHIS uses a supplemental questionnaire and collects extensive information regarding the patterns of CAM use every five years (2002, 2007, 2012). Using this database, our final analytic sample included adults ages 18 or older, and had complete data for all covariates ($n = 33,167$ unweighted). The survey response rate in 2012 was 61.2% [14], and our study was exempted from the Institutional Review of Board review at the University of Minnesota, as we used publicly available de-identified data.

2.2. Measures

2.2.1. Use of homeopathy and herbal therapies

NHIS asks two questions, “During the past 12 months, did you use homeopathic treatment for your health?” and “During the past 12 months, have you taken any herbal or other non-vitamin supplements?” (yes/no). Using this information, we constructed a categorical variable to indicate “homeopathy used only,” “herbal therapies used only,” or “both homeopathy and herbal therapies used” in the preceding 12 months.

2.2.2. Reasons for use of homeopathy and herbal therapies

The NHIS survey respondents were asked if they used homeopathy or herbal therapies for treatment of one or more specific health problems, symptoms, and/or conditions. We aggregated “yes” responses to create an indicator variable to represent the past year homeopathy or herbal therapies were used for treatment. Additionally, the respondents were also asked whether or not they used homeopathy or herbal therapies for improving energy, general wellness, enhancing immune function, improving athletic/sports performance, or improving memory. We aggregated “yes” responses for any of these five questionnaire items to create an indicator variable to represent past year homeopathy or herbal therapies used for wellness. Finally, using these two indicator variables, we constructed a categorical variable to classify reasons for homeopathy or herbal therapies use: treatment only, wellness only, and a combination of both treatment and wellness.

2.2.3. Perceived benefit outcomes

For each of homeopathy and herbal therapies used in the past 12 months, respondents were asked whether or not each type of CAM provided specific benefit, such as: (1) a better sense of control over health; (2) reduced stress/relaxation; (3) better sleep; (4) feeling better emotionally; (5) made it easier to cope with health problems; (6) improved overall health/feeling better; and (7) improved relationships with others. Each of these perceived benefit variables were selected as outcomes of interest.

2.2.4. Covariates

Based on the socio-behavioral wellness model, we included a number of covariates. The model proposes 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.”^{15(p. 37)} For predisposing factors, we included: age, gender, race/ethnicity, marital status, and educational attainment. For enabling factors, we included: employment status, health insurance coverage, geographic region, and poverty status. We included the following need factors: self-reported health status, using the K6 scale [16], multiple chronic conditions [17], and functional limitations. Finally, we included a healthy behavior index to describe personal health practices (i.e., weight, regular exercise, alcohol use, and smoking status) [15].

2.3. Data analysis

First, we examined the extent to which socio-demographic and health-related characteristics differed by homeopathy and herbal therapies use. Second, we estimated the prevalence rates of utilizing homeopathy and herbal therapies in the past year. We used cross-tabulations and design-based *F*-tests to investigate the differences by reason for use. Third, we investigated the patterns of perceived benefits by either homeopathy and/or herbal therapies. Then, we ran seven independent multivariate logistic regression models to estimate the odds of perceived benefits of utilizing both homeopathy and herbal therapies by reason for such use. These models were adjusted for all covariates. We conducted all of analyses using Stata 13.1 (Stata Corp. College Station, Texas) [18], and accounted for complex sample designs of the NHIS (e.g., unequal probability of selection, clustering, and stratification) [12].

3. Results

3.1. Characteristics of the study sample

In the past 12 months, 0.7% and 16.5% of U.S. adults used homeopathy only and herbal therapies only, respectively. Only 1.4% of U.S. adults used both homeopathy and herbal therapies in the past year. All of socio-demographic and health-related characteristics were significantly different by the use status (see Table 1). For example, 70.6% of homeopathy alone users and 69.8% of both homeopathy and herbal therapies users were female, and such rates were significantly higher than that of female non-users (50.9%) ($p < 0.001$). The study sample was consisted of non-Hispanic Whites predominantly, ranged from 64.6% (non-users) to 82.2% (both users). The majority of the study sample had health insurance coverage, and almost a third of the study sample, who used homeopathy, herbal therapies, or both, was located in the West region. Those who used homeopathy, herbal therapies, or both were more likely to have moderate mental distress than non-users ($p < 0.001$). Lastly, more than half of homeopathy, herbal therapies, or both users had three or more healthy behaviors.

3.2. Prevalence of homeopathy and herbal therapies: use, reasons, and perceived benefits

Overall, of those who used homeopathy or herbal therapies, 34.8% reported that they used for wellness only, followed by treatment only (5.1%). However, 60.1% of them used for a combination of both treatment and wellness. Fig. 1 presents the distribution of homeopathy, herbal therapies, or both use by reason. Among adults who primarily used these CAM modalities for treatment alone, 89.3% of them used herbal therapies only and 7.2%

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