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Original article

Use of integrative medicine approaches for treating adults with sleep disturbances

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ABSTRACT

Aim: This study determined the prevalence, perceived efficacy, and influencing factors and evaluated the sources of information as well as the barriers and facilitators for the use of integrative medicine approaches (IMA) within the previous 12 months to treat adults with sleep disturbances.

Background: No studies have assessed the use of integrative medicine approaches in adults with sleep disturbances.

Methods: A cross-sectional postal survey was conducted. Adults with sleep disturbances were purposively selected from the sleep center of a hospital in Taiwan. Binary logistic regression was used to analyze and compare the differences between groups of use and non-use IMA.

Results: The response rate was 94.5% (n = 515). The prevalence for the use of integrative medicine approaches was 53.4% (n = 275). The most prevalent IMA was music. However, the most perceivably efficacious integrative medicine approaches was acupressure, followed by music and meditation. Independent explanatory variables were educational attainment, the number of chronic diseases/symptoms, and healthy lifestyles for the use of IMA. The most common source of information was television/radio. The top facilitator and barrier for the use of integrative medicine approaches were side effects of sleeping pills and limited accessibility.

Conclusions: IMA are used by a considerable proportion of adults for treating sleep disturbances in Taiwan. The findings of this study identified the significant explanatory variables of IMA use and provided a fundamental understanding the aspects of IMA use in the adults with sleep disturbances is particularly important for health care providers in practice associated with their patients.

1. Introduction

Sleep disturbances affect 33%–57% of adults (Adams et al., 2017; Nowicki et al., 2016). A nationwide survey determined that 55% adults used prescription medications within the preceding month for sleep disturbances in the United States (Bertisch, Herzig, Winkelman, & Buettner, 2014). However, sleep disturbances are often unmanageable by pharmacological therapy because of the side effects and rebound insomnia of medications (Bonnet & Arand, 2016); consequently, patients may select integrative medicine approaches (IMAs) for the treatment of sleep disturbances.

IMAs are therapies involving the coordinated use of conventional and complementary approaches (Health Promotion Administration, 2016). The National Center for Complementary and Integrative Health (NCCIH), a center of the *National Institutes of Health* (NIH) (National Institutes of Health, 2016), has classified IMAs into three domains: natural products, mind and body practices, and other complementary health approaches. Over the past 30 years, the healthcare industry has shown increasing interest in research on IMAs and their growing clinical applications worldwide, particularly in Africa and Asia (World Health Organization, 2014). The uses of IMA have grown and widely varied according to international geographic locations and patient populations. Data from national surveys revealed that the prevalence of IMA use in the United States was 30%–86% (Health Promotion Administration, 2016; Upchurch & Rainisch, 2015) among the general adult population, and more than one-third of these IMA users reported a combination of wellness and treatment as their reason for use (Upchurch & Rainisch, 2015). In addition, a high prevalence of complementary and alternative medicine use has been reported in other western populations, such as in 70% and 80% of the populations in

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Canada and Germany, respectively (World Health Organization, 2014).

In contrast with those western countries, the population-weighted prevalence of complementary and alternative medicine use in the past 12 months was only 12.3% in Hong Kong (Yeung et al., 2014). In Taiwan, the prevalence of IMA use in the general population widely varied across studies (Chang, Liu, & Chen, 2014; Shih et al., 2015). A secondary analysis of data from the National Health Insurance Research Database revealed that only 6.8% of adults used IMAs in Taiwan (Shih et al., 2015). Another nationwide random sample survey conducting in Taiwan reported that 38% of adults had used complementary and alternative medicine at least once during the previous 12 months (Chang et al., 2014).

The outpatients of a community health center (Ho, Nguyen, Liu, Nguyen, & Kilgore, 2015) and Parkinson's disease patients (Finseth et al., 2015) also frequently uses IMAs, and the prevalence of IMA use has been reported to be between 63% (Ho et al., 2015) and 85% (Finseth et al., 2015). IMA use has steadily increased globally, and IMAs are increasingly playing a role in the healthcare system (Menard et al., 2015), resulting in greater attention to their efficacy (Health Promotion Administration, 2016), interactions with conventional medications (Menard et al., 2015), and influencing factors (Burke, Nahin, & Stussman, 2015) in users and practitioners.

The efficacy of most IMA modalities used for the treatment of sleep disturbances has been examined and found to largely vary, with limited evidence (Bonnet & Arand, 2016). Mind–body interventions, an IMA domain, have shown some evidence of beneficial effects on sleep quality and should be considered as a treatment option for patients with sleep disturbances (Neuendorf et al., 2015). According to the NCCIH (2017), mind and body practices are defined as “a large and diverse group of techniques that are administered or taught to others by a trained practitioner or teacher. Examples include acupuncture, massage therapy, meditation, relaxation techniques, spinal manipulation, and yoga.”

Another study revealed no or mixed evidence for the use of many IMAs in the treatment of sleep disturbances (Sarris & Byrne, 2011). Compared with other neuropsychiatric symptoms, sleep disturbances were most closely associated with complementary and alternative medicine expenditure (Purohit et al., 2015). However, to date, no studies have investigated the prevalence, efficacy, and the specific factors associated with IMA use in adults with sleep disturbances.

The Andersen Behavioral Model of Health Services Utilization (Andersen, 1995) has been used in studies on IMA use. The present study, which examined the crucial influencing factors for IMA use, is also mainly based on the Anderson model (Andersen, 1995) and on relevant literature. The Anderson model contains four distinct domains: predisposing factors, enabling resources, perceived need, and personal health practices. Although IMA use in adults with sleep disturbances has not been previously assessed, recent studies have examined the factors affecting IMA use in other patient groups and have demonstrated that some factors, such as age (Naja et al., 2015), gender (Soos, Jeszenoi, Darvas, & Harsanyi, 2015), education (Zhang et al., 2015), marital status (Zhang et al., 2015), religion (Bahall, 2015) (predisposing factors), income (Zhang et al., 2015), socioeconomic status (Shih et al., 2015) (enabling resources), health status (Upchurch & Rainisch, 2015), chronic diseases (Soos et al., 2015; Upchurch & Rainisch, 2015) (perceived need), and lifestyles (Shih et al., 2015) (personal health practices) were correlated with IMA use. All the aforementioned influencing factors belonged to the four domains of the Anderson model (Andersen, 1995).

IMA use for the treatment of sleep disturbances has been increasingly studied over the past two decades. However, IMA are used less in Taiwan than in western countries. Moreover, previous studies have accessed and demonstrated the sources of information (Balneaves, Weeks, & Seely, 2008) as well as the facilitators and barriers for IMA use (Evans et al., 2007). Investigating IMA use in adults with sleep disturbances would help to improve knowledge regarding the treatment of sleep disturbances. If the influencing factors for IMA use are well understood, more appropriate sleep treatment strategies can be developed. However, no studies have examined these issues in adults with sleep disturbances. Therefore, we estimated prevalence of IMA use within the previous 12 months among adults with sleep disturbances. We also explored the types of IMA used, reasons and factors that influence its use, and the association between patient demographics and IMA use. We also compared the group differences between IMA user and Non-IMA user.

2. Methods

We used predictive study design to conduct a cross-sectional postal survey between January and July 2014. A questionnaire, which was developed from previous studies and validated by expert review, was used to investigate the 12-month prevalence, associated factors, sources of information, and facilitators and barriers for the use of IMAs. The 4-page questionnaire could be completed in approximately 10–15 min.

2.1. Settings and participants

The sample frame contained adults from the sleep center of a 1100-bed hospital in eastern Taiwan (Hualien city). The sleep center was the only sleep center in that region of Taiwan, implying that the study population represented a half of the geographical area of Taiwan. The eligibility criteria for participation were a diagnosis of sleep disturbances (Buysse, Ancoli-Israel, Edinger, Lichstein, & Morin, 2006) and an age of ≥ 20 years.

1173 adults aged > 20 years who were identified from the sleep center records since the year of 2007 were all telephoned by a senior research assistant; among these, 28 had died, 1 was hospitalized, 16 were out of the country for work, 202 were self-perceived no sleep problems, and the telephones of 381 had been disconnected (including those with incorrect phone numbers). Thus, we dispatched postal questionnaires to the remaining 545 adults. All questionnaires were returned in postage-paid, sealed envelopes. Among these, 515 (94.5%) completed questionnaires were returned by participants.

2.2. Variables and measures

Questions for the questionnaire were synthesized based on the Andersen Behavioral Model of Health Services Utilization (Andersen, 1995), and its four distinct domains, including predisposing factors, enabling resources, perceived need, and personal health practices. Only the participants' demographic and health-related characteristics were used for bivariate analysis, and other factors were used only for descriptive purposes.

2.2.1. Predisposing factors

Predisposing factors were demographic characteristics (age, gender, marital status, and educational levels), perceived efficacy of IMAs, and barriers and facilitators for IMA use. Self-perceived efficacy was defined as when the specific IMA used in the previous 12 months was at least as effective as conventional medical care.

2.2.2. Enabling resources

Annual income is an enabling resource. Income is a sensitive issue, and because many people in Taiwan might be reluctant to provide income-related data, we asked, “What do you consider your income level to be when compared with the current average national income of Taiwan?”(Directorate General of Budget, 2016) Three options were provided: high, medium, and low income. Health insurance is another enabling resource. National health insurance has been implemented in Taiwan, and all citizens are covered by this insurance. Moreover, some of the IMA modalities are covered, depending on the diagnosis of patients. Therefore, only data of the income variable were collected for