Review Article

"Complementary Medicine": Complementary and Alternative Health Approaches in Pediatric and Adolescent Gynecology

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A B S T R A C T

Complementary and alternative health care approaches are prevalent in the patients and families served by practitioners in pediatric and adolescent gynecology. This article addresses gaps in knowledge, including new terminology, prevalence of use, rates of and reasons behind nondisclosure, and potential interactions of herbal products with prescribed medication. It closes with practical complementary health approaches to the adolescent with dysmenorrhea.

Key Words: Complementary medicine, Complementary health approaches, Dysmenorrhea, Integrative health

Introduction

Complementary and alternative health care approaches are prevalent in the patients and families served by practitioners in pediatric and adolescent gynecology (PAG). In the past decades there were guidelines proposed by a national committee regarding the recommended competencies in complementary and alternative health approaches, which included delineation of values, knowledge, attitudes, and skills.[1] However, a survey of US medical school curricula in 2013 noted that 49% of schools did not have a clerkship or course available, and of those schools who had offered, the most frequent curricular offering was an elective course (71%).[2] In this article we address gaps in knowledge, including new terminology, prevalence of use, rates of and reasons behind nondisclosure, and potential interactions of herbal products with prescribed medication. We close with introducing a second competency, complementary health approaches (CHA) to the adolescent with dysmenorrhea.

Definitions

There have been several changes in terminology regarding complementary and alternative medicine. The National Institutes of Health program that oversees funding opportunities has been renamed the National Center for Complementary and Integrative Health, and the center has recommended modifications in the terms used to describe these practices, as summarized on their Web site (https://nccih.nih.gov/health/integrative-health). For nonmainstream practices used together with conventional medicine, the term "complementary" is recommended; this is contrasted to "alternative" when nonmainstream practices are used in place of conventional medicine. CHA are practices and products of nonmainstream origin, and "integrative health" is defined as complementary approaches incorporated into mainstream health care.

The National Center for Complementary and Integrative Health has identified 2 broad subgroups of CHA—natural products (herbs, vitamins and minerals, probiotics) and mind and body practices (chiropractic and osteopathic manipulation, yoga, meditation, massage therapy); there are "other" approaches, such as traditional healers, Ayurvedic medicine, traditional Chinese medicine, not included in those subgroups. A group of researchers have proposed 3 categories: CHA products, practices, and providers,[3] terminology we will use in the remainder of this article (Table 1).

Prevalence of Use

Adults

CHA is widely used in the United States. The National Center for Health Statistics has performed the National Health Interview Survey (NHIS), a nationally representative, cross-sectional study conducted through household interview surveys. The Adult Alternative Medicine supplement was conducted in 2002, 2007, and 2012, and asked about use of specific CHA over the previous 12 months. The survey defined "adult" as ages 18 years and older, whereas "pediatric" was defined as ages 4-17 years. Because the pediatric and adolescent age range includes pediatric and young adult, as defined in the NHIS, this article examines CHA use among adult and pediatric ages. According to the 2012 NHIS survey, 33.2% of adult Americans used 1 or more CHA.[4] Nonvitamin, nonmineral dietary supplements were the commonly used CHA approach, used by 17.7% of American adults. Of these products, fish oil was the single most common supplement (7.8% overall), followed by

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Table 1
Categories of CHA

CHA Modality	Examples
Products	Nonvitamin, nonmineral dietary supplements including fish oil, melatonin, glucosamine, and probiotics
Practices	Yoga, tai chi, qi gong, guided imagery, stress management techniques
Providers	Chiropractic/osteopathic manipulation, acupuncture, traditional healer, massage therapy

CHA, complementary health approaches.Adapted from Upchurch and Rainisch.[3]

glucosamine (2.6%), and probiotics (1.6%). The second most commonly used approach was deep breathing exercises (10.9%) followed by practices of yoga/tai chi/qi gong (10.1%). The peak in any CHA use was reported in the 2007 survey (35.5%).[4]

Children

The past 2 NHIS surveys asked parents about CHA use in their children 17 years and younger. Parents reported 11.6% used 1 or more approaches in the previous 12 months, with no change in prevalence between the 2007 and 2012 surveys. The most common uses in the pediatric ages were nonvitamin, nonmineral dietary supplements (4.9%), chiropractic/osteopathic manipulation (3.3%), and yoga/tai chi/qi gong in 3.2%. Of the dietary supplements, fish oil and melatonin were most commonly used.[5]

Reasons for Use of CHA

Several investigators have examined reasons for CHA use. Adult CHA users report that these approaches improved overall health (76%), were natural (62%), reduced stress (58%), and they can use it on their own (53%).[6] Most users identified wellness or wellness and treatment as the reason they used CHA, whereas 45% reported using CHA for treatment of specific conditions.[7] In an earlier NHIS survey, the conditions for which CHA was used most frequently were back pain, head cold, neck or joint pain, arthritis, and anxiety or depression.[8] Examining data from the 2007 NHIS reported by parents on use by pediatric patients, adolescents were more likely that infants or toddlers to use CHA.[9] Adjusting for multiple variables, pediatric/adolescent users were more than 4 times as likely to have a parent with a college education and 1.6 times as likely to use prescription medication. Pediatric users were more likely to have anxiety or stress, or dermatologic or musculoskeletal conditions. Use of CHA by a parent increased likelihood of use by their child nearly fourfold.[9]

Nondisclosure of CHA

In the 2012 NHIS survey, 63% of adults disclosed use of any CHA to their providers, and the rates of disclosure were dependent on the type of CHA.[6] That is, 55% disclosed use of CHA providers, 73% disclosed use of CHA products, and 46% disclosed use of CHA practices; disclosure was more likely if the individual experienced improved coping and well-being, or improved health.[6] When examining patterns of nondisclosure to their primary provider, 42% did not disclose, and were more likely not to disclose yoga (65%) and meditation (64%), and were least likely to not disclose herbs and/or supplements (25%).[10] The most likely reason cited for nondisclosure was the primary provider did not ask (57%), followed by the provider did not need to know (46%), and they were not using it at the time of care with the provider (26%). Other reasons cited for nondisclosure included the provider had less knowledge of CHA type (7.6%), they were concerned about a negative reaction from the provider (3.0%), they were worried the provider would discourage that use (2.8%), and the provider previously had discouraged use of CHA (2.0%).[10] Of note, in a survey of patients of children with developmental disabilities, 23% of patients did not disclose CHA use, contrasted to 20% of parents overall.[11] Reasons for nondisclosure were that the provider did not ask (61%), followed by parent did not think the provider needed to know (47%).[11]

Herb–Drug Interactions

Nondisclosure is especially important because of herb–drug interactions and specific organ toxicity that might accompany herbal and dietary supplements. There are multiple mechanisms of herb–drug interactions, as reviewed by Fasinu et al.[12] For example, several herbs are, or could have the potential to be, pharmacologic precursors. Herbal and dietary supplements could affect drug absorption, or induce or inhibit metabolic enzymes and transport proteins, or alter renal excretion of drugs and metabolites, leading to either pharmacotoxicity or treatment failure.[12] A review of drug-induced liver injury reported that herbal and dietary supplements were implicated in 19% of cases, and noted that anabolic steroids were associated with cholestatic hepatic injury, whereas green tea extract was associated with acute hepatitis.[13] Of special interest to the PAG provider, the 2 herbal products most commonly used concurrent with prescription medicines are ginkgo and St John's wort, and both can interfere with prescription medicines.[14] An evidence-based review of St John's wort and oral contraceptives noted that St John's wort was a potent inducer of cytochrome P450 3A-4 enzyme, and was associated with increased risk of ovulation and breakthrough bleeding, suggesting decreased contraceptive efficacy.[15] Overall, studies involving herb–drug interactions have been limited to a small number of conventional and herbal drugs.[14] Additionally, studies might also differ according to the specific formulation used. For example, herbal products vary in composition, and a single product might have varying mixtures and concentrations of the active phytochemicals within that given product.[16]

Practical Applications

These data would recommend the importance of speaking with patients and their families about CHA, to facilitate safe and effective health care. Incorporating conversations around CHA usage into clinical interactions could initially appear challenging. The provider should focus on 3 issues when framing questions intended to elicit accurate

and important information about patient CHA usage. Acknowledging the following is a broad generalization, CHA are wellness oriented,[17] holistic in scope (specifically including body, mind, emotions, and spirit), and intended to foster patient empowerment. Examples of wellness oriented questions include: “When do you feel your best?” “What types of products, practices, or practitioners do you use for your overall wellness or to help with your symptoms?” Use of open-ended questions will invite shared information regarding physical, mental, emotional, and spiritual approaches the patient and family find helpful, and might help to elicit a more holistic picture of the patient's wellness perspectives and practices.

Because overall “wellness” is a subjective experience, many CHA intentionally emphasize the patient and their family as the authorities (the “author” of the experience) on what exactly wellness is, and how to attain and maintain it. An approach that implies “teach me what works (and what doesn't) for you” affirms for the patient the importance of their subjective experience, and clarifies the willingness of the health care provider to hear it, while fostering a sense of empowerment. For example, when the PAG provider explains their concerns about specific drug—supplement interactions; or explains why questions about a particular style of yoga might be related to a patient's pain issues; or why it might be advisable to seek out a mental health professional before going on a month-long meditation retreat for treatment of depression. “Integrative medicine” implies an integration of the expertise of every one of the parties involved, whether conventional or complementary health care products, practices, and providers, or the subjective perspectives of the patient and their family. With overall wellness, holistic orientation and patient empowerment as guiding principles, eliciting comprehensive and imperative details about CHA usage allows such “integration” toward safe and effective health care.

CHA for Dysmenorrhea

Dysmenorrhea is one of the most common concerns in adolescent women, with a prevalence of 16%-93%.[18] Although effective modalities exist (specifically, nonsteroidal anti-inflammatory drugs [NSAIDs] and combined oral contraceptives), up to one-fourth of adolescents might not respond,[18] leading many parents and patients to inquire about “natural” approaches either before implementation, or as augmentation, to NSAIDs or oral contraceptives. The literature reports several potentially effective CHA modalities for dysmenorrhea, including local heat, transcutaneous nerve stimulation, acupuncture, behavioral interventions, and dietary and herbal supplements.

- A Cochrane Collaborative Review from 2002 noted that transcutaneous nerve stimulation performed better than placebo, with one-third of patients responding; of note, few studies included adolescents.[19]
- A meta-analysis of acupuncture for dysmenorrhea examined 60 randomized control trials, published before December 2017. Most of the studies examined women in their late teens to twenties, and concluded that acupuncture reduced menstrual pain and associated symptoms more effectively than no treatment or NSAIDs.[20] The authors explained that acupuncture in traditional health approaches helped the body circulate blockages in energy, termed qi. An allopathic explanation for acupuncture is the stimulation of the nervous system by antidromic axon reflexes, with the release of serotonin and exogenous opioids. The authors recommend more rigorously designed trials to address quality and methodology.[20]
- A Cochrane collaborative review from 2011 examined behavioral interventions for dysmenorrhea; most studies involved participants who were college-aged or older.[21] The review noted that several different behavioral interventions have been used for dysmenorrhea, which include modifying behavior, or thoughts or cognitions, and physical and cognition procedures such as biofeedback, desensitization, relaxation training, and hypnotherapy. The investigators ultimately identified 13 trials, of which 5 met study criteria. The authors concluded that relaxation techniques with or without imagery, pain management training, plus relaxation with biofeedback might help with dysmenorrhea. They recommend future randomized controlled trials with adequate sample size, use of objective measurement scales, and comparative studies against standardized treatments (such as NSAIDs) to help address the utility of these approaches.[21]
- There was an updated Cochrane collaborative review on dietary supplements,[22] which excluded several studies incorporated into the earlier review.[23] The more recent review notes there was limited evidence of benefit for several dietary supplements, including fenugreek, ginger, valerian, zetaria, zinc sulfate, fish oil, and vitamin B1. Although most of the studies were implemented in women 18-30 years of age, several included adolescents. The authors believed that there was no high-quality evidence because of small sample sizes and inconsistencies; they did note more research was justified. Of note, a recent international publication examined the combination of 2 interventions previously believed to have benefit for management of dysmenorrhea: fish oil[24] and vitamin B1 (thiamine).[25] Students received placebo, 100 mg vitamin B1 alone, 500 mg fish oil alone, or vitamin B1 and fish oil. The combination of B1 and fish oil was most effective; and B1 alone was next most effective and exhibited the fewest side effects. Fish oil alone was more effective than placebo, but both interventions with fish oil had greater rates of side effects.[26]

Conclusion

We reviewed the new terminology regarding CHA, prevalence of use, rates of and reasons for nondisclosure, potential interactions of complementary approaches with prescribed medication, and potentially effective CHA to the adolescent with dysmenorrhea. CHA are quite common, with a minimum prevalence of one-third of patients.

However, nondisclosure rates could be 40% or greater. One of the major issues of nondisclosure is the potential interaction with prescribed medication, or direct toxicity of the agent. We encourage PAG professionals to provide an open-ended, nonjudgemental style when eliciting information about complementary and integrative health approaches in the PAG patient and their family.

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