

Review Article

The Use of Complementary and Alternative Medicine by Children

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Abstract

The use of complementary alternative medicine in pediatric populations is considerably increased. There are various reasons for the growing use of complementary and alternative medicine. Many complementary health products and practices aren't tested for safety or effectiveness in children. It's important to note that children may react differently than adults do to these approaches. Therefore, all health professionals should take a detailed medical history, including complementary and alternative medicine methods. The health professionals are supposed to inform child patients and their parents about the potential risks, benefits of such treatments. The purpose of this review was to describe the use of complementary and alternative medicine by children.

ABBREVIATIONS

CAM: Complementary and Alternative Medicine; NCCAM: The National Centre for Complementary and Alternative Medicine; NCCIH: National Center for Complementary and Integrative Health.

INTRODUCTION

An increasing and generally high prevalence of complementary and alternative medicine (CAM) use has been documented in industrialized countries in children and adolescents with chronic illnesses [1,2]. This wide prevalence makes it difficult to predict which individual patient to target with respect to asking about CAM use and therefore underlines the necessity of effective and open communication by health professionals with all patients around this topic. Health care professionals express concern about safety, effectiveness and potential interactions between CAM and conventional medicine [3]. This article will discuss the use of CAM in children, with reference to evidences in scientific research. This article will also discuss safety and efficacy of CAM use by children.

Complementary and Alternative Medicine

The National Centre for Complementary and Alternative Medicine (NCCAM) has defined CAM as a group of diverse medical and health care systems, practices, and products that are not presently considered to belong to conventional medicine. The National Center for CAM, classifies CAM in five major domains: alternative medical systems (e.g. traditional Chinese medicine, ayurveda, homeopathy), mind-body interventions (e.g. imagery, meditation, music therapy), biologically based therapies (e.g.,

herbals, nutritional supplements), manipulative and body-based methods (e.g. massage, chiropractic, osteopathy), and energy therapies (e.g. Reiki, healing touch, therapeutic touch) [4].

National Center for Complementary and Integrative Health (NCCIH) generally uses the term "complementary health approaches" when discussing the practices and products we study for various health conditions. When describing health approaches with non-mainstream roots, people often use the words "alternative" and "complementary" interchangeably, but the two terms refer to different concepts:

- "Complementary" generally refers to using a non-mainstream approach **together with** conventional medicine.
- "Alternative" refers to using a non-mainstream approach **in place of** conventional medicine [5]

The Use of Complementary and Alternative Medicine by Children

CAM is growing in popularity worldwide and plays a substantial role in medicine [6-8]. Rapid developments in the diagnosis and treatment of childhood illnesses have been accompanied by an increase in the use of CAM [9,10]. According to the 2007 National Health Interview Survey, which included a comprehensive survey on the use of complementary health approaches by Americans, nearly 12 percent of the more than 9,000 children included in the survey had used or been given some form of complementary health product or practice during the past year. Nearly 12 percent of American children (younger than age 18) have used or been given a complementary health product

or practice [11]. The rate of using CAM in children varies between 9–73% [12]. According to NCCIH, for children, complementary health approaches were most often used for back or neck pain, head or chest colds, anxiety or stress, other musculoskeletal problems, attention-deficit hyperactivity disorder, and insomnia [11]. In children with other chronic conditions, CAM use is 44% in those with epilepsy [13], 54% with sickle cell disease [14], 59.6% with diabetes mellitus [15], 64% with rheumatoid arthritis [16], 67.6% with attention deficit and hyperactivity [17] and 64% with other special healthcare needs [18].

Patients' Reasons for Using Complementary and Alternative Medicine

There are various reasons for the growing use of CAM. The majority of alternative medicine users appear to be doing so not so much as a result of being dissatisfied with conventional medicine but largely because they find these health care alternatives to be more congruent with their own values, beliefs, and philosophical orientations toward health and life [19]. Studies in clinical pediatric settings showed that 20-30% of general pediatric patients have used one or more CAM therapies; they were used for curing diseases, minimizing symptoms, preventing diseases, promoting wellness or achieving inner peace and harmony [20]. Siponen *et al.* [21] in Finland conducted a cross-sectional population based study and reported that 11% of children used CAM either for improving health or for alleviating symptoms. Children's use of medicine as well as CAM is controlled by the parents [22]. Patients may expect CAM to improve their quality of life, alleviate symptoms, prolong life, cure their disease, and boost their immune system [23,24]. Parents may use CAM for their children in order to appear as good parents, particularly for children with serious illnesses [25].

Aims of CAM care for children

- To improve the quality of a child's experience of care,

communications and continuity of care

- To enhance the quality of a child's life, in terms of symptom management for acute, chronic and terminal conditions
- To reduce anxiety and fear that may negatively colour the child's experience of care
- To enhance the relationships between child and nurse, child and parent (s), nurse and family
- To encourage fun and distraction
- To improve motivation, alertness and healing potential
- To provide different approaches to care to empower and enable children to work towards realising their potential
- To provide an opportunity for nurses to observe and enhance their understanding of child development and behaviours and for the children to learn and understand more of themselves [26].

The Effects of Complementary and Alternative Medicine

Many complementary health products and practices aren't tested for safety or effectiveness in children. It's important to note that children may react differently than adults do to these approaches. Also, Federal regulations for dietary supplements are less strict than those for prescription and over-the-counter drugs. Some dietary supplements may be of poor quality or contain contaminants, including drugs, chemicals, or metals [11]. The use of CAM may cause adverse side effects, alter diagnostic skin findings, and interact with other medical treatments that may affect the efficacy of medical treatments [27]. Additionally, parents should be aware that many complementary health products, including dietary supplements and herbal medicines, have not been tested for safety or effectiveness in children.

• **If Health Professionals' Considering a Complementary and Alternative Medicine for Pediatric Patient**



- Make sure that pediatric patient has received an accurate diagnosis from a licensed health care provider.
- Educate yourself about the potential risks and benefits of these approaches.
- Remind pediatric patients to discuss with their health care providers any these approaches they may use.
- Don't use any health product or practice that hasn't been proven safe and effective to replace or delay conventional care or prescribed medications.
- If you have any concerns about the effects of a complementary approach, contact pediatric patient's health care provider.
- As with all medications, store herbal and other dietary supplements out of the sight and reach of children.
- Tell all health care providers about any health approaches pediatric patient uses. This will help ensure coordinated and safe care.

Figure 1 If Health Professionals' Considering a Complementary and Alternative Medicine for Pediatric Patient [11].

Because children's metabolism and their immune, digestive, and central nervous systems are still maturing, side effects can differ from those seen in adults. This is especially true for infants and young children [28].

While scientific evidence exists regarding some CAM therapies, for most there are key questions that are yet to be answered through well-designed scientific studies-questions such as whether these therapies are safe and whether they work for the purposes for which they are used [29]. Few studies have examined the effects of these methods on children. The American Academy of Pediatrics does not recommend multivitamins for healthy children and adolescents who eat a varied diet. According to a 2012 report, children who take multivitamins are at greater risk than nonusers of getting too much iron, zinc, copper, selenium, folic acid, and vitamins A and C. However, multivitamins may be needed for those who do not eat a varied diet, and those children who did not take multivitamins were found to have low levels of vitamins D and E and calcium [30]. There are numerous ongoing studies to determine the benefits and harms of these and other mind and body practices in children. Acupuncture appears to be safe for most children when performed by appropriately trained practitioners, but a 2011 research review concluded that unwanted side effects can occur when acupuncture is done by poorly trained practitioners. Relaxation techniques are generally considered safe for healthy people, including children. However, there have been rare reports that certain relaxation techniques might cause or worsen symptoms in people with epilepsy or certain psychiatric conditions, or with a history of abuse or trauma [31].

Pediatricians and other clinicians who care for children have the responsibility to advise and counsel patients and families about relevant, safe, effective, and age-appropriate health services and therapies regardless of whether they are considered mainstream or CAM [32]. Therefore, health professionals should take a detailed medical history, including CAM use [27]. In the 2001 American Academy of Pediatrics Periodic Survey of Fellows, 73% of pediatricians agreed that it is the role of pediatricians to provide patients/families with information about all potential treatment options for the patient's condition, and 54% agreed that pediatricians should consider the use of all potential therapies, not just those of mainstream medicine, when treating patients [32].

It's important that parents talk with their child's health care provider about any complementary health approach that is being used or considered, and parents should encourage their teenagers to do the same [30,31].

Health Professionals and Complementary Alternative Medicine

Ernst [33] conducted a systematic review on the prevalence of pediatric CAM use, which concluded that it was generally high and possibly growing. Ernst noted that questions relating to CAM efficacy, safety and costs were largely unanswered and that only about 50% of patients/families reported their CAM use to their healthcare provider [33]. Additionally, most health professionals and patients are uncomfortable about discussing CAM and seldom have access to robust information about CAM. Thus,

patients and families are not optimally provided with accurate information that will assist them in making informed decisions about the use of CAM [34].

It is recommended that physicians and nurses should have a comprehensive information on CAM to be able to remind their clients the probable risks and side effects and also answer their patients relevant questions [35,36]. Hence, some of developed countries have decided to include courses on CAM in the medical group curriculum, so, therapists and clients can benefit from the best therapeutic methods with the lowest costs and highest quality [35].

CONCLUSION

CAM is attracting more and more attention within health care, especially among children, even if health professionals are often underestimated their use. Additionally, many complementary health products and practices aren't tested for safety or effectiveness in children. It's important to note that children may react differently than adults do to these approaches. Therefore health professionals should provide information clearly to parents and children about the safety and effectiveness of commonly used CAM.

CONFLICT OF INTEREST

The authors declare that any financial interest or any conflict of interest exist in this investigation.

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