



Review article

# Natural health product use and management in pediatrics: An integrative review<sup>☆</sup>

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## Abstract

**Introduction:** Pediatric use of natural health products (NHPs) is common, although conventional health care providers frequently do not attempt to manage them due to limited knowledge and lack of confidence. The aim of this review is to synthesize available guidance given to pediatric health care providers on how to manage NHPs in clinical practice.

**Methods:** An integrative review of the literature was conducted. Key search terms were NHPs, dietary supplements, herbal medicines, CAM, pediatrics, decision-making, guides, management, safety, parents, and medical providers. Expert organizations and databases including CINAHL, PubMed, Embase, and the Cochrane Collaboration were searched. Fifty-two articles were chosen for inclusion based on appraisal using the Johns Hopkins Nursing Evidence-Based practice tool for research and non-research. Themes for NHP management were identified through integrating repeated expert guidance.

**Results:** Three themes emerged from the literature regarding clinical management of NHPs: product regulation and its impact on safety, communication deficits, and limited provider knowledge. Despite guidance on NHP management from well-known organizations such as the American Academy of Pediatrics and the NIH National Center for Complementary and Alternative Medicine, considerable heterogeneity was discovered in management guidelines.

**Discussion:** This is the first known review to synthesize NHP clinical management guidance. Identified themes led to development of six key principles to help guide clinician NHP management. More research is needed to evaluate if this guidance is effective in promoting clinician confidence and competency with NHP management.

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**Keywords:** Natural health products; Clinical Management; Regulation; Review

## Introduction

Natural health products (e.g. vitamins, minerals, herbals, homeopathic and traditional medicines) are ubiquitous [1]. The US Food and Drug Administration Office for Dietary

Supplements recently reported that there are over 85,000 natural health products (NHPs) on the market and that number is steadily increasing [2]. Approximately 31% of US children use NHP to improve or maintain their health [3]. In the US, NHP use accounts for approximately 75% of all CAM utilized [4].

Pediatric health care providers are concerned that NHPs may interact with other treatments; despite this, children are often given NHPs without guidance from their clinician or disclosure from the patient/family about their use. NHP management is a complex clinical issue and it is becoming more common for experts to issue guidance to clinicians about it. This is the first known review to synthesize pediatric NHP clinical management guidance in primary care.

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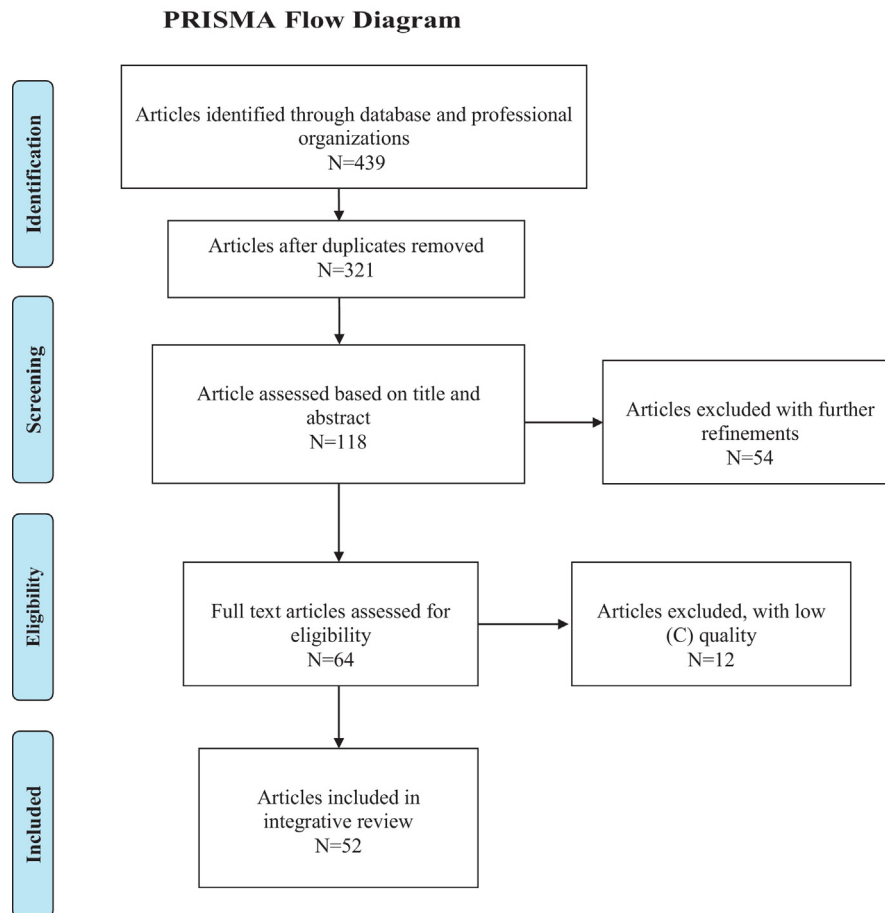


Fig. 1. PRISMA flow diagram.

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med* 6(6):e1000097. doi:10.1371/journal.pmed1000097.

## Methods

An integrative review was conducted to determine how the literature and expert organizations direct clinicians to manage patient NHP use in primary care. A search was conducted using databases from CINAHL, PubMed, Embase, and the Cochrane Collaboration. The National Guidelines Clearinghouse and the Guidelines International Network were also searched, in addition to professional organizations such as ConsumerLab.com, American Academy of Pediatrics, National Center for Complementary and Alternative Medicine, World Health Organization, and National Association of Pediatric Nurse Practitioners. Key search terms included: NHPs, dietary supplements, herbal medicines, CAM, pediatrics, decision-making, guides, management, safety, parents, and medical providers. Inclusion criteria to identify relevant papers were: (i) published within the last 12 years; (ii) offered pediatric guidance; (iii) offered guidance on NHP management and (iv) published in English. Guidance was included whether it was published as peer-reviewed publications/studies, systematic reviews/meta-analyses, or expert commentary; no paper was excluded based on study design. Guidance was included if it was relevant to NHPs (since NHPs form the majority of CAM use,

guidance on pediatric CAM use was included if it was relevant to NHPs). In effort to limit guidance to primary care, pediatric specialty populations, such as oncology or mental health, were excluded. To control for cultural confounding, only guidance from US or Canadian expert organizations were included. All articles were screened and extracted by a single reviewer.

Included articles were evaluated using the Johns Hopkins Nursing Evidence-Based Practice Research Tool for Research and Non-Research [5]. These tools help categorize research into levels of quality (A = high quality, B = good quality, and C = low quality) and strength (rated 1–5, 1 being the strongest). These tools were chosen due to their ability to evaluate both research and non-research papers, as we anticipated not all guidance identified through our search would be research-based. Knowledge synthesis included identification of themes and development of key principles to guide primary care clinicians with regards to pediatric NHP management.

## Results

The original search from all databases produced 439 articles; after de-duplication, 118 papers remained. Details of the review process can be found in the PRISMA flow diagram (Fig. 1).

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