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Review

Complementary medicine and childhood immunisation: A critical review

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ABSTRACT

Background: Vaccination is one of the most significant and successful public health measures of recent times. Whilst the use of complementary medicine (CM) continues to grow, it has been suggested that CM practitioners hold anti-vaccination views. The objective of this critical review is to examine the evidence base in relation to CM practitioner attitudes to childhood vaccination alongside attitudes to vaccination among parents who visit CM practitioners and/or use CM products.

Methods: A database search was conducted in MEDLINE, PubMed, CINAHL, EMBASE and AMED for research articles published between January 2000 and September 2015 that evaluated either CM practitioner or CM user attitudes and intention towards childhood vaccination.

Results: A total of 23 articles were found that detailed the attitudes of CM practitioners to vaccination. A further 16 papers examined the association between the use of CM products and visits to CM practitioners, and immunisation. The interface between CM and vaccination is complex, multi-factorial and often highly individualised. The articles suggest that there is no default position on immunisation by CM practitioners or parents who use CM themselves, or for their children. Although CM use does seem positively associated with lower vaccination uptake, this may be confounded by other factors associated with CM use (such as higher income, higher education or distrust of the medical system), and may not necessarily indicate independent or predictive relationships.

Conclusions: Although anti-vaccination sentiment is significant amongst some CM practitioners, this review uncovers a more nuanced picture, and one that may be more agreeable to public health values than formerly assumed.

Contents

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1. Background/introduction

Immunisation is one of the most successful public health measures of the last century, with paediatric vaccines in particular, dramatically reducing the incidence of infectious disease and childhood mortality worldwide. The high rate of childhood vaccination coverage in most high-income countries indicates that paediatric vaccination remains a widely accepted public health measure. However, support for paediatric vaccination is not universal, and vaccine hesitancy – defined as "delays in acceptance or refusal of vaccination despite availability of vaccination services" [1] – is an emerging international public health problem [2]. Some parents choose to delay vaccinating their children, adopt modified schedules, or forego vaccination altogether. Whilst public opposition to vaccination "began with the first vaccinations, has not ceased, and probably never will" [3], several high profile outbreaks of vaccine-preventable diseases have recently brought increased attention on the issue of vaccine hesitancy [4].

Complementary medicine (CM) – a diverse group of healthcare practices not generally considered part of the conventional medical curriculum – is one area that has been portrayed as a possible enabler in vaccine hesitancy. It has been posited by commentators that CM practitioners discourage or actively oppose vaccination [5–8], or that users of alternative models of healthcare may not support vaccination [9]. This hypothesis may be supported by the increasing influence of CM in vaccine misinformation campaigns [10]. As the utilisation and prevalence of CM increases internationally, issues of public protection and safety around the use of CM are emerging as significant public health issues requiring more detailed critical examination by research, policy and practice communities [11]. Moreover, as CM practitioners play an increasingly significant role in contemporary health care – outnumbering conventional providers in some areas [12] – it is increasingly important to understand the views, attitudes and practices of CM practitioners in relation to immunisation.

Similarly, attitudes and practices towards immunisation, of parents who use CM services and products needs research attention. The potential impact and influence of CM on childhood immunisation is commonly discussed in the peer-reviewed literature [5–8], yet despite such interest, there has been no attempt to systematically review the impact and influence of CM on childhood vaccinations. Understanding the reasons for low vaccination compliance in certain parts of the community is of major public health interest. CM practitioners may have access to vaccine-hesitant parents and for this reason the attitudes, beliefs and recommendations of CM practitioners as well as the parents who visit them are important to understand. This review aims to address these critical research gaps by investigating and summarising existing empirical research on the impact and influence of CM on childhood immunisation.

Table 1
Key terms used in database searches for MEDLINE, PubMed, CINAHL, AMED and EMBASE for complementary medicine and childhood vaccinations.

SEARCH TERMS	
Complementary medicine	Vaccination
Broad descriptor headings[a]	
Complementary medicine, traditional medicine, alternative medicine, integrative medicine	Vaccine, vaccination, immunisation (or immunization)
Specific headings[b]	
Discipline- or modality-specific	*Vaccine specific*
Acupuncture, Alexander technique, aromatherapy, Chinese medicine, chiropractic, dietary supplements, herbal medicine, homeopathy, massage, meditation, naturopathy, nutraceuticals, reflexology, spiritual healing, vitamins, yoga	MMR

[a] Individual databases have differing subject headings. Search terms relating to those in the table were used but may not be exactly as described.

[b] For disciplines and modality specific terms both subject heading searches (e.g. MeSH "Chiropractic") and keyword searches (e.g. chiropract*[tiab]) were performed, and both searches were performed for all indirect and non-health risk terms. These terms are not exhaustive, as similar terms to those listed above were also used (e.g. botanical extract, botanical preparation, herbal extract, plant extract, medicinal plant, plant medicine, phytodrug and phytotherapy terms were also used for 'herbal medicine', as well as differing 'types' of herbal medicine such as Western herbal medicine or Chinese herbal medicine).

2. Methods

For the purposes of this mixed methods review the databases MEDLINE, PubMed, CINAHL, EMBASE and AMED were searched for research articles published between January 2000 and September 2015, using the appropriate terms and subject headings for complementary medicine and vaccination or immunisation (see Table 1). The search was confined to peer-reviewed articles containing an English abstract. Database searches were supplemented by hand searches and all citation lists of papers were reviewed for further references.

The search results were imported into EndNote, a bibliographic management software program, with duplicated items removed. Two reviewers with appropriate research expertise in both qualitative and quantitative methods (JW and JF) screened all remaining titles and abstracts to identify scientific papers reporting empirical research findings. Discrepancies were resolved through discussion. Papers identified as conference presentations, letters to the Editor, and commentary were excluded. In cases where the abstract did not provide enough information, the full article was retrieved and examined by two researchers. Relevant works were also identified by examining citation lists of relevant articles and added to the EndNote library. Due to the significant heterogeneity of research methodologies, no scored quality assessment was conducted. As this was the first systematic approach to reviewing the literature on this topic, all articles were included in the review, and methodological details of each study can be found in Appendix A (Tables 2–4).

Articles related to vaccines that were part of routine childhood vaccination schedules in numerous countries (e.g. hepatitis B) were included, even if the article was not solely focused on childhood vaccination. Articles focused on vaccination in adult communities (e.g. influenza vaccine in the elderly) were excluded. In total, 42 empirical research papers were found to meet the selection criteria and were included in this review (see Fig. 1).

3. Results

As CM issues around practice, utilisation and information can differ significantly, this review has been grouped around these cat-

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