



Review

Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012



Heidi J. Larson*, Caitlin Jarrett, Elisabeth Eckersberger,
David M.D. Smith, Pauline Paterson

Department of Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom

ARTICLE INFO

Article history:

Received 23 July 2013

Received in revised form 18 January 2014

Accepted 28 January 2014

Available online 2 March 2014

Keywords:

Vaccine
Immunization
Immunisation
Hesitancy
Confidence
Public trust

ABSTRACT

Vaccine “hesitancy” is an emerging term in the literature and discourse on vaccine decision-making and determinants of vaccine acceptance. It recognizes a continuum between the domains of vaccine acceptance and vaccine refusal and de-polarizes previous characterization of individuals and groups as either anti-vaccine or pro-vaccine.

The primary aims of this systematic review are to: 1) identify research on vaccine hesitancy; 2) identify determinants of vaccine hesitancy in different settings including its context-specific causes, its expression and its impact; and 3) inform the development of a model for assessing determinants of vaccine hesitancy in different settings as proposed by the Strategic Advisory Group of Experts Working Group (SAGE WG) for dealing with vaccine hesitancy.

A broad search strategy, built to capture multiple dimensions of public trust, confidence and hesitancy around vaccines, was applied across multiple databases. Peer-reviewed studies were selected for inclusion if they focused on childhood vaccines [≤ 7 years of age], used multivariate analyses, and were published between January 2007 and November 2012.

Our results show a variety of factors as being associated with vaccine hesitancy but they do not allow for a complete classification and confirmation of their independent and relative strength of influence. Determinants of vaccine hesitancy are complex and context-specific – varying across time, place and vaccines.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Vaccination is often cited as one of the most important achievements of public health. However, this success has always been challenged by individuals and groups who question, and sometimes refuse, vaccines for a variety of reasons including religious, scientific and political [1–3]. Present day debates around vaccination are increasingly complex, as more vaccines and combinations of vaccines have become available and modes of global communication have become far more ubiquitous, fast and non-hierarchical. Rapid global sharing of public concerns and sometimes uncertainty around vaccines [4] are leading to an increase in the number of

people questioning vaccines, seeking alternative vaccination schedules [5,6] and sometimes delaying or refusing vaccination [7].

In recent years, there has been growing attention to what has been termed “vaccine hesitancy” [8–10], de-polarizing earlier attention to “pro”- versus “anti”-vaccination individuals and groups. Vaccine-hesitant individuals have been defined as a heterogeneous group in the middle of a continuum ranging from total acceptors to complete refusers. These “hesitant” individuals may refuse some vaccines, but agree to others, delay vaccines, or accept vaccines but are unsure of doing so [11,12].

The behaviour of vaccine-hesitant individuals or communities is complex, and determinants of hesitancy are highly variable. In Greece [13], socioeconomic factors, such as number of other siblings and father’s education, were the most important predictive factors of both under- and delayed childhood vaccination, and parental attitudes and beliefs about vaccination were found to be non-significant in this regard. A study in Nigeria found that partial immunization was most influenced by factors such as maternal availability, and lack of knowledge, whereas parental disapproval played a more influential role on non-immunization [14]. Another

* Corresponding author. Tel.: +44 207 927 2858

E-mail addresses: Heidi.larson@lshtm.ac.uk (H.J. Larson),
Caitlin.jarrett@lshtm.ac.uk (C. Jarrett), Elisabeth.eckersberger@lshtm.ac.uk
(E. Eckersberger), davidmdsmith@gmail.com (D.M.D. Smith),
Pauline.paterson@lshtm.ac.uk (P. Paterson).

study, on MMR vaccine in the UK, found that different factors influenced decision-making at each dose, with degrees of influence also varying at each dose [15]. While several systematic reviews have investigated factors that influence vaccine hesitancy across different populations and vaccines [16–19], there is evidence to suggest that not all potentially relevant factors have been identified or thoroughly investigated [15,20].

Recognizing that vaccine hesitancy is an important issue, and given its potential to impact on vaccine coverage, the Strategic Advisory Group of Experts [SAGE] on Immunization established a Working Group dealing with vaccine hesitancy in March 2012 [21]. In line with its assigned terms of reference, the SAGE working group first defined “vaccine hesitancy” as:

A behaviour, influenced by a number of factors including issues of **confidence** [do not trust vaccine or provider], **complacency** [do not perceive a need for a vaccine, do not value the vaccine], and **convenience** [access]. Vaccine-hesitant individuals are a heterogeneous group who hold varying degrees of indecision about specific vaccines or vaccination in general. Vaccine-hesitant individuals *may accept* all vaccines *but remain concerned* about vaccines, some may refuse or delay some vaccines, but accept others; some individuals may refuse all vaccines.

Building on the above definition, the working group also drafted a “Model of determinants of vaccine hesitancy” (Fig. 1) organized around three key domains: 1. Contextual influences – including historic, socio-cultural, environmental, health system/institutional, economic or political factors; 2. Individual and group influences – including influences arising from personal perception of the vaccine or influences of the social/peer environment; and, 3. Vaccine and vaccination-specific issues which are directly related to the characteristics of the vaccine or the vaccination process (Fig. 1). This model includes a broad selection of factors that have been identified as potential influencers of vaccine hesitancy drawn from the collective experience and insights of the SAGE WG members, all of whom are considered experts in their field, and represent diverse disciplines.

With reference to the above definition and model, the specific objectives of this systematic review were to:

- 1) Identify research on vaccine hesitancy and related terms globally;
- 2) Gain an appreciation of vaccine hesitancy in different settings including its context-specific causes, its expression and its impact; [this was approached by identifying factors that act as either barriers or promoters of vaccination]; and
- 3) Inform the further development of the SAGE model mapping determinants of vaccine hesitancy.

The SAGE WG asked to focus this systematic review on childhood vaccination. Childhood vaccinations are generally scheduled to be received from 0-to-six years of age. As this review was focused on instances of non-conformity to this schedule, the age range for the childhood category was kept flexible. Across the studies included in this review, the oldest child participant was 7 years old, and the cut-off age was therefore set as such.

2. Methods

2.1. Search strategy and selection criteria

A search strategy was developed in Medline and then adapted as required by differential indexing across several multidisciplinary mainstream and regional databases including: Medline,

Embase Classic & Embase, PsychInfo, Cochrane, CINAHL Plus, Web of Science, IBSS, LILACS, AfricaWideInfo and IMEMR. The strategy included an extensive list of keywords (Table 1) and related MeSH/subject headings in an effort to capture the many dimensions and expressions of vaccine confidence, trust and hesitancy. All articles in the six UN languages – Arabic, Chinese/Mandarin, English, French, Russian, and Spanish – were included. The keywords of the search strategy were also translated into French and run across the following databases: Medline [via PubMed], Embase, PsychInfo, CINAHL, Cochrane, IBSS, IMEMR, REPERE, Academic search premier and JSTOR. The search was run across all databases during the period 12–19 November 2012. In addition, a request was made to all SAGE Working Group members for relevant studies.

Once retrieved, articles were first screened by title and abstract according to a set of inclusion and exclusion criteria. Articles were included if they were: 1) peer-reviewed articles published between January 2007 and November 2012; and 2) focused on public trust/distrust, hesitancy, perceptions, concerns, confidence, attitudes, beliefs about vaccines and vaccination programmes.

Articles were excluded if they were not about human vaccines, were about vaccines that are not yet available (such as HIV vaccine and malaria) or were publications such as editorials, letters, comment/opinion, protocol (no data), which were not-peer reviewed

Included papers were then coded by country, WHO region [22], language, vaccine, population and study group/methodology [i.e., statistical analyses employed]. In each article, the study group was identified using either keyword searches in RefWorks (reference management software) or manually. Keywords included: multivariate, multivariable, regression, factor analysis, systematic, qualitative, focus group, mixed-method, univariate, bivariate and descriptive.

2.2. Summary descriptive analyses

Several descriptive analyses were run to assess the evidence for our systematic review objective 1) to identify research on vaccine hesitancy and confidence globally.

2.3. Factor analysis – barriers and promoters of vaccination

To support the investigation of objective 2) to gain an appreciation of vaccine hesitancy in different settings including its context-specific causes, its expression and its impact, and objective 3) to inform the further development of the SAGE model mapping determinants of vaccine hesitancy, multivariate studies about childhood vaccines (all vaccines administered ≤ 7 years old) were examined to identify any factors found to be significantly associated with vaccination behaviour as either barriers or promoters. Each significant factor was then mapped onto the vaccine hesitancy model developed by the SAGE Working Group in order to position them within an overarching framework (see Appendix B: Figs. 5–8). This was an important step as the concept of vaccine hesitancy is complex and much of the research tends to focus on one or only a few model elements rather than the entire scope.

A selection of the most frequently cited factors are further discussed in the narrative. This process was designed to: 1) highlight the key determinants of vaccine hesitancy identified in the literature and examine how these played out across different contexts, 2) assess the extent to which these factors verify the model and, finally, 3) determine any gaps in the literature, the model, or both.

Download English Version:

<https://daneshyari.com/en/article/2402270>

Download Persian Version:

<https://daneshyari.com/article/2402270>

[Daneshyari.com](https://daneshyari.com)