

STUDY PROTOCOL

Factors Influencing Intention on Childhood Vaccination among Pregnant Women: A Scoping Review Protocol

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ABSTRACT

Introduction: Childhood immunisation is crucial for protecting children from serious diseases. This scoping review aims to map out previous research on factors influencing intention on childhood vaccination among pregnant women. **Methods:** This protocol outlines a scoping review using the Joanna Briggs Institute methodology framework. The inclusion criteria for this scoping review will center on studies that examine pregnant women and the factors influencing their vaccination decisions, with a particular emphasis on primary research utilizing experimental methods. Exclusion criteria will involve non-full-text articles and those not published in English. The advanced search techniques will utilize keywords across MEDLINE (PubMed), Elsevier (Scopus), and WoS. Screening will entail removing duplicates and assessing titles and abstracts. **Discussion:** Relevant articles will then undergo a thorough full-text examination to determine eligibility. Data from the articles will be put into a table. After that, we'll analyze it and show the results in both the table and graphs. **Trial Registration:** 10.17605/OSF.IO/E5MCA
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INTRODUCTION

Childhood immunisation is essential because it protects children from serious diseases and complications (1). Vaccines primarily prevent severe infections that cause high rates of illness and death, especially in children (2). As per the recommended vaccination schedule, vaccines can currently prevent around 5 million deaths each year globally (3).

Although vaccination has been highly effective in reducing global infectious disease rates and deaths, ongoing doubts among the public about vaccines pose a significant risk. If these doubts persist, there's a real chance that diseases preventable by vaccines could come back due to issues like delays, refusals, and disruptions in vaccine development and distribution (4). The

World Health Organization (WHO) identified vaccine hesitancy as a significant global health threat in 2019, indicative of its enduring presence over several decades. This designation is particularly noteworthy considering that approximately one in five children worldwide are either entirely unvaccinated or incompletely vaccinated, indicating a lapse in routine immunisation coverage (5). The WHO's Strategic Advisory Group of Experts on Immunisation (SAGE) defined vaccine hesitancy as the delay or refusal of vaccination despite the availability of vaccine services. This has become a significant global issue, resulting in a notable decrease in vaccine coverage for children worldwide (6).

According to recent scientific research, there is a significant lack of influenza and pertussis vaccination coverage among pregnant women globally, with rates ranging from 0% to 70%. Due to this immunization deficiency, opportunities to safeguard the health of expectant mothers and their unborn children are lost (7). Vaccine hesitancy significantly affects pregnant women as they form attitudes towards vaccination

during pregnancy, subsequently influencing childhood immunization decisions (8). Pregnant women may encounter difficulties in convincing themselves and their children to receive vaccinations due to various concerns and uncertainties. However, as key decision-makers regarding their children's health, addressing vaccine hesitancy among pregnant women is crucial to ensure optimal immunisation coverage and safeguard public health (9). Numerous studies have explored the effects of COVID-19 on pregnant women whose associates exhibit vaccine hesitancy (10) (11) (12). In summary, research indicates that pregnant women generally acknowledge the importance of vaccines for their children's and the community's well-being. However, concerns about vaccine safety and effectiveness persist, leading to hesitancy among some expectant mothers. This hesitancy varies depending on the specific vaccine being considered. To gain a clearer understanding, it's crucial to examine each vaccine individually. This scoping review is necessary to comprehensively explore pregnant women's attitudes toward childhood vaccination. An initial search of MEDLINE (PubMed), Elsevier (Scopus), WoS, and JBI Evidence Synthesis did not reveal any published or ongoing scoping reviews that address this topic in the manner proposed by our current protocol. The value of conducting this scoping review lies in its ability to guide future research in vaccination decision-making, concentrating on areas that have received limited attention.

REVIEW QUESTION

1. What factors influence the intention to childhood vaccination among pregnant women?
2. Which aspects of intention focus on childhood vaccination among pregnant women?

ELIGIBILITY REQUIREMENT

Participants

This scoping review will include studies involving adults aged 18 and older, with a specific focus on pregnant women under 40.

Concept

Research will focus on the intention to vaccinate children, exploring various definitions and conceptualizations, such as vaccine acceptance, refusal, and hesitancy, among pregnant mothers aged 18 to 40 and considering their decision-making.

Context

This review will explore different studies that examine the factors affecting intentions toward childhood vaccination, such as vaccine acceptance, refusal, and hesitancy, and particular groups like pregnant women. It will evaluate how these elements influence the decision to vaccinate children and the broader decision-making process.

Types of Sources

This review will examine various studies, including experiments, observational studies, qualitative research, systematic reviews, and grey literature, focusing on what most effectively addresses the research question.

METHODS

The scoping review will follow the methodology established by the Joanna Briggs Institute (JBI) for scoping reviews (13).

Search strategy

The search strategy will target both published and unpublished studies. An initial search will be conducted using MEDLINE (PubMed), Elsevier (Scopus), and WoS to locate articles related to the topic. The words and phrases identified in the titles and abstracts of applicable articles, along with the index terms used to classify them, will inform the development of a detailed search strategy. The titles, abstracts, and index terms of pertinent articles will be used to formulate a comprehensive search strategy. (Immunisation OR Vaccines OR "childhood Vaccination") NOT (Covid-19) AND (Health attitudes OR Attitude to health OR Vaccination Refusal OR Health Knowledge, Attitudes, Practice OR Patient Acceptance of Health Care OR trust) AND (Health literacy). The search strategy, encompassing all identified keywords and index terms, will be tailored for each database and information source included. Furthermore, the reference lists from all sources will be reviewed to identify additional studies. We will consider studies published in any language, focusing on those from 2018 onwards to ensure the review reflects the most up-to-date evidence. This timeframe was selected to capture the latest research findings on the topic. We aim to reduce language barriers to facilitate a thorough literature review, primarily searching for literature reviews in English. The databases to be searched include MEDLINE (PubMed), Elsevier (Scopus), and WoS. Additionally, we will explore gray literature sources, such as trial registries, conference proceedings, and institutional repositories, to find unpublished studies. All identified references will be imported into Mendeley's reference management software, combining references from various electronic databases and removing duplicates.

Study Selection

The study selection process will involve two steps: screening titles and abstracts and conducting a full-text review. Two independent reviewers (NAY and RI) will evaluate the articles against the eligibility criteria during both stages. If any disagreements arise, they will be discussed, and if a consensus cannot be achieved, a third reviewer (NSR) will be brought in. Studies that meet the eligibility criteria will be identified according to those outlined in Table I.

Table I: Full inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Various studies focusing on factors influencing intentions regarding childhood vaccination (sociodemographic, social and contextual)	Various studies focusing on factors influencing intentions regarding COVID-19
Studies on intentions regarding childhood vaccination in specific populations such as pregnant women.	Studies published in advance than 2023
Studies involving the intention of childhood vaccination	Studies in languages apart from English
All primary studies, regardless of the study design and relevant systematic reviews.	Opinion pieces, viewpoints and conceptual frameworks, conference abstracts

The initial step requires screening the title and abstract of the references with the help of Mendeley, a reference management software. To qualify for the full-text scan, the title and abstract must (1) exclusively address the factors influencing intentions regarding childhood vaccination and (2) target pregnant mothers as the population of interest. this scoping review will focus on first-time mothers and encompass studies regarding childhood vaccinations' intentions. We aim to explore the relationship between various factors such as vaccine hesitancy, acceptance, refusal, trust or distrust, perceptions, concerns, confidence, knowledge, attitudes, and beliefs related to children's vaccines. Studies specifically addressing COVID-19 will be excluded from this review. We will include all primary studies comprising experimental, observational, quantitative, and qualitative designs and systematic reviews. Excluded studies will be detailed in the 'Characteristics of excluded studies' table and the justifications for their exclusion. This process adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (14), as depicted in Fig. 1. The final list of included studies will be confirmed by two review authors (NAY and RI).

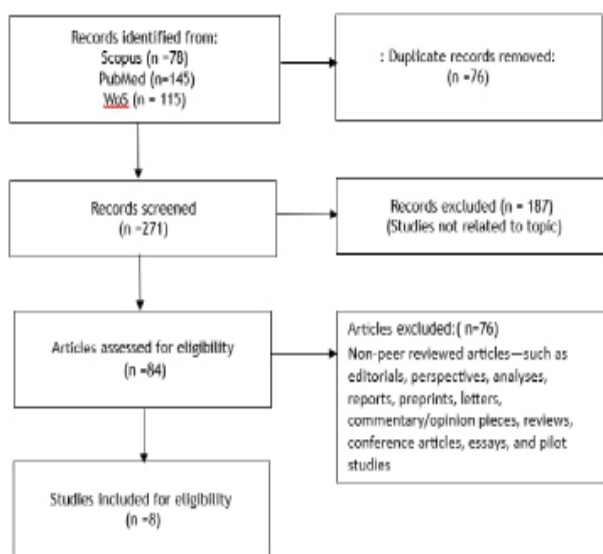


Fig. 1: PRISMA flow diagram for article selection

Charting the Data

The next stage is to create a key item map using the data collected from relevant articles. Two independent reviewers (NAY and RI) will extract relevant information from each study in the scoping review. The Excel database tables application will be used throughout the extraction stage to logically summarize data sources with appropriate aims and research concerns. the extracted data will include details such as the author, publication year, country, objectives, samples, methodology, intervention, and outcome. A preliminary extraction form is shown in Table II. The draft data extraction tool will be adjusted and improved as needed during the data extraction process from each evidence source included. Any changes will be documented in the scoping review. Disagreements among reviewers will be settled through discussion or with the involvement of an additional reviewer.

Table II: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (Prisma-Scr) Checklist

SECTION	ITEM	PRISMA-Scr CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	1
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	1
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	-
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	1

CONTINUE

Table II: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (Prisma-Scr) Checklist (CONT.)

SECTION	ITEM	PRISMA-Scr CHECKLIST ITEM	REPORTED ON PAGE #
METHODS			
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	7
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	3
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	4
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	-
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	-
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	-
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	4
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	4
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	-
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	4
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	4

CONTINUE

Table II: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (Prisma-Scr) Checklist (CONT.)

SECTION	ITEM	PRISMA-Scr CHECKLIST ITEM	REPORTED ON PAGE #
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	5
Limitations	20	Discuss the limitations of the scoping review process.	-
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	5
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	5

DISCUSSION

This protocol outlines the process for performing a scoping review of earlier studies to highlight the current evidence and identify gaps concerning the intention to vaccinate children. This method offers practical ways to summarize extensive research on this topic. The scoping review results will provide unique insight into the extent and scope of the intention to vaccinate children and identify research gaps. Consequently, the review's findings will guide future research on interventions based on sociodemographic, social, and contextual aspects.

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REFERENCES

1. World Health Organization Vaccines and immunisation., 2021. Available from https://www.who.int/health-topics/vaccines-and-immunisation#tab=tab_1
2. Rodrigues, C., & Plotkin, S. A. Impact of vaccines; health, economic and social Perspectives. *Frontiers in Microbiology*, 2020; 11: 1526. <https://doi.org/10.3389/fmicb.2020.01526>
3. World Health Organization. Global Child Health Indicator, 2020. Available from https://www.who.int/data/gho/data/themes/topics/sdg-target-3_2-newborn-and-child-mortality

4. Nuwarda, R. F., Ramzan, I., Weekes, L., & Kayser, V. Vaccine hesitancy: contemporary issues and historical background. *Vaccines*, 2022; 10(10):1595. <https://doi.org/10.3390/vaccines10101595>
5. WHO Ten Threats to Global Health.2019. Available from: <https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019>
6. MacDonald, N. E. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015; 33(34): 4161–4164.<https://doi.org/10.1016/j.vaccine.2015.04.036>
7. Herdea, V., Tarciuc, P., Ghionaru, R., Lupușoru, M., Tataranu, E., Chirilă et al. Vaccine Hesitancy Phenomenon Evolution during Pregnancy over High-Risk Epidemiological Periods— “Repetitio Est Mater Studiorum.” *Vaccines*.2023; 11(7): 12-07. <https://doi.org/10.3390/vaccines11071207>
8. Smith, S. E., Sivertsen, N., Lines, L., & De Bellis, A. Decision making in vaccine hesitant parents and pregnant women – An integrative review. *International Journal of Nursing Studies Advances*.2022; 4:100-062. <https://doi.org/10.1016/j.ijnsa.2022.100062>
9. Recosa, M. D. C., Endoma, V., Sornillo, J. B., Bravo, T. A., Landicho-Guevarra, J., Aligato, M., Landicho, J., Sornillo, B. J., Demonteverde, M. P., Silvestre, C., Malacad, C., Pambid, L., Llopis, J., Francisco, C., & Inobaya, M. Respect my opinion and I'll respect yours!": Exploring the challenges, concerns, and informational needs of vaccine-hesitant caregivers and pregnant women in the Philippines. *Public Health Challenges*.2023; 2(3). <https://doi.org/10.1002/puh2.105>
10. Bhattacharya, O., Siddiquea, B. N., Shetty, A., Afroz, A., & Billah, B. COVID-19 vaccine hesitancy among pregnant women: a systematic review and meta-analysis. *BMJ Open*. 2022; 12(8):061-477. <https://doi.org/10.1136/bmjopen-2022-061477>
11. Ashkir, S., Abel, T., Khaliq, O. P., & Moodley, J. COVID-19 vaccine hesitancy among pregnant women in an antenatal clinic in Durban, South Africa. *Southern African Journal of Infectious Diseases*.2023; 38(1): 516. <https://doi.org/10.4102/sajid.v38i1.516>
12. Mitchell, S. L., Schulkin, J., & Power, M. L.Vaccine hesitancy in pregnant Women: A narrative review. *Vaccine*.2023; 41(29): 4220–4227. <https://doi.org/10.1016/j.vaccine.2023.05.047>
13. Peters MDJ, Godfrey C, McInerney P, et al. Chapter 11: Scoping Reviews (2020 version). Aromataris E, Munn Z, editors. *JBIM Manual for Evidence Synthesis*. JBI; 2020.Available from <https://synthesismanual.jbi.global>. <https://doi.org/10.46658/JBIMES-20-12>
14. Betsch, C., Budeker, B., Schmid, P., & Wichmann, O. How baby's first shot determines the development of maternal attitudes towards vaccination. *Vaccine*,2018; 36(21): 3018–3026. <https://doi.org/10.1016/j.vaccine.2018.04.023>
15. Tricco, A. C., Lillie, E., Zarin, W., et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of internal Medicine*, 2018;169(7): 467–473. <https://doi.org/10.7326/M18-0850>