



The Role of Nurses in Vaccine Advocacy and Administration

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Abstract

Background: Vaccinations are among the most effective public health interventions, preventing millions of deaths annually. However, vaccine hesitancy—characterized by delays in acceptance or outright refusal—poses significant challenges to achieving herd immunity. This issue has been exacerbated by the COVID-19 pandemic, highlighting the urgent need for effective strategies to combat vaccine hesitancy, particularly among healthcare providers such as nurses and pharmacists.

Methods: This scoping review employed a systematic methodology to identify and analyze empirical studies and grey literature related to the barriers and facilitators that nurses and pharmacists encounter in addressing vaccine hesitancy. The search was conducted across multiple databases, including MEDLINE and CINAHL, following the JBI Scoping Review Methodology.

Results: The review identified nine key barriers faced by nurses and pharmacists, including misinformation about vaccines, lack of communication tools, insufficient time for discussions, and distrust in the healthcare system. Conversely, six facilitators were noted, such as the availability of educational materials and the establishment of trusting relationships with patients. The analysis highlights that effective communication and interprofessional collaboration are critical in mitigating vaccine hesitancy.

Conclusion: Nurses and pharmacists play a vital role in vaccine advocacy and administration, yet they face significant barriers that hinder their ability to address vaccine hesitancy effectively. The findings underscore the need for targeted interventions that enhance their communication skills and provide adequate resources. Future research should focus on developing and implementing strategies that empower healthcare providers to foster vaccine acceptance among patients.

Keywords: Vaccine Hesitancy, Nursing, Pharmacists, Public Health, Interprofessional Collaboration.

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1. Introduction

Immunizations are regarded as one of the most significant public health accomplishments of the 20th century, averting two to three million lives worldwide annually. Despite the efficacy of immunization initiatives, vaccine acceptance frequently encounters varying degrees of resistance or hesitancy. Vaccine hesitancy is characterized by a delay in acceptance or outright refusal to vaccinate, even when vaccines are accessible (1,2). This phenomenon is believed to contribute to declines in vaccination coverage and an increase in outbreaks of vaccine-preventable diseases. The World Health Organization (WHO) identified vaccine hesitancy as a significant threat to global health in 2019; its impact on herd immunity poses considerable adverse public health consequences (3). This concern is amplified by the ongoing COVID-19 pandemic and emerging variants, necessitating mass vaccination of the populace to mitigate and prevent further transmission of COVID-19. To establish herd immunity within the population, it is anticipated that a substantial majority of Canadians must accept the COVID-19 vaccine, with projections suggesting a threshold of at least 85%, contingent upon the nation and infection rates. To effectively address COVID-19 and other vaccine-preventable diseases, robust strategies are essential to mitigate vaccine hesitancy (2-6).

Healthcare practitioners are strategically positioned within health systems to tackle vaccine-related apprehensions and hesitation. Nurses and pharmacists typically have more time to engage with concerned individuals or parents of children before vaccine administration than physicians and other healthcare providers (7). Various strategies and interventions have been implemented to combat vaccine hesitancy and enhance vaccine uptake, including provider-based interventions. Among these, a range of techniques is utilized, such as informative discussions about vaccines with patients and/or parents, the presentation of prevalence statistics to educate them, and the practice of empathetic communication. These interventions have proven effective in converting vaccine-hesitant patients and/or parents into vaccine acceptors (8-10).

Despite the existence of evidence-based treatments to mitigate vaccination hesitancy, there is little understanding of the implementation of provider-based interventions within the practices of nurses and

pharmacists in both community and hospital settings (11, 12). Research indicates that obstacles at the individual, interpersonal, organizational, and systemic levels can substantially impede the integration of effective healthcare interventions into practice. However, the specific barriers and facilitators influencing nurses' and pharmacists' capacity to confront vaccine hesitancy and refusal among patients remain ambiguous (13). Moreover, it is unclear how current interventions address identified obstacles and leverage facilitators for change, if they do so at all. Research initiatives should focus on comprehensively identifying the obstacles and facilitators to customize interventions that enhance nurses' and pharmacists' capacity to combat vaccination hesitation and refusal (14, 15).

Consequently, it is essential to adopt a systematic, theory-informed methodology to identify obstacles and facilitators in addressing vaccine hesitancy and/or refusal across various levels (i.e., individual, social, cultural, political, etc.) and formulate implementation strategies to surmount these obstacles and bolster the facilitators in combating vaccine hesitancy (16, 17). To address the barriers and facilitators of vaccine hesitancy, a theory-driven analysis is essential to comprehend the interplay between these factors and the mechanisms by which they affect behavior. Research has demonstrated that employing theory-based strategies for behavior modification can result in more effective implementation and successful interventions (18).

This scoping review aimed to identify, characterize, and delineate the existing knowledge regarding a) the perceived barriers and facilitators faced by nurses and pharmacists in addressing vaccine hesitancy among patients; and b) the strategies or interventions available for nurses and pharmacists to mitigate vaccine hesitancy in their practice. The results of this analysis will guide the development of behavioral treatments to assist nurses and pharmacists in mitigating vaccination reluctance among their patients.

2. Methods

The search technique was created in collaboration with a JBI-trained medical research librarian and intended to identify published empirical studies and grey literature. The scoping review adhered to the three-step; iterative process as outlined in the JBI Scoping Review Methodology (19). The three steps encompass 1) an initial limited search of at least two pertinent online databases related to the topic (MEDLINE and CINAHL), followed by an analysis of the textual elements in the titles and abstracts of retrieved papers, as well as the index terms used to categorize the articles; 2) a subsequent search employing all identified keywords and index terms; and 3) an examination of the reference lists of all identified reports and articles for supplementary sources. The search method sought to discover published primary research, reviews, and opinion pieces.

3. Obstacles for nurses and pharmacists in confronting vaccine reluctance

Nine topics were discovered concerning obstacles faced by nurses and pharmacists in addressing vaccination reluctance among patients, parents, or the general public. The predominant obstacle noted by both nurses and pharmacists was the misinformation about immunizations among patients and/or parents. In both nursing and pharmacy-related studies, the subsequent two most often cited obstacles were the absence of communication support/guidance and the need to overcome patient distrust in the system.

3.1. Absence of communication tools and protocols

A prevalent obstacle for nurses and pharmacists was the absence of communication tools (e.g., posters, booklets, and brochures) and guidelines for providers to consult to facilitate discussions with vaccine-hesitant patients. Research indicates a lack of definitive instructions for healthcare personnel to successfully engage with vaccination-hesitant patients and parents since the majority of resources emphasize the facts about vaccine efficacy and safety rather than measures to mitigate hesitation (20, 21).

3.2. Relationship between healthcare provider and patient

A significant obstacle discovered was the rapport between nurses' pharmacists and their patients. Patients perceived an inability to articulate their problems to healthcare personnel, stemming from apprehension over rejection and judgment. Moreover, research indicated that a deficiency of trust between patients and healthcare professionals resulted in nurses and pharmacists lacking the capability and confidence to address delicate topics, such as vaccination apprehension (22, 23).

3.3. Insufficient time to tackle vaccine hesitancy

Nurses indicated a constrained timeframe to tackle vaccination reluctance among their patients. Research indicated that other health concerns were often emphasized, and visit durations were restricted to one or two subjects. Pharmacists did not see time limitations as an impediment to resolving vaccination reluctance in the trials reviewed (24).

3.4. Insufficient opportunity for discourse on vaccine reluctance

Research in nursing has shown insufficient nurse-patient interactions addressing vaccination reluctance. Research indicated that opportunities to engage in this conversation were not consistently available, particularly when patients were well and not attending the clinic. Consequently, individuals often lack the chance to articulate their vaccination apprehensions with a reliable healthcare professional (25-28).

3.5. Collaboration among healthcare providers

Research indicated that nurses and pharmacists saw insufficient coordination among healthcare providers, including nurses, pharmacists, doctors, and public health officials, as a significant obstacle to effectively addressing vaccination reluctance (29).

3.6. Patients are deceived about immunizations.

A prevalent obstacle recognized by both nurses and pharmacists was the challenge of addressing patients' hesitation stemming from misinformation about immunizations. Patients and/or parents often arrive at sessions with emotional anecdotes including nonscientific information that contradicts facts about vaccination efficacy. Nurses and pharmacists find it difficult to combat emotionally charged disinformation (30, 31).

A significant obstacle for nurses and pharmacists in combating vaccination reluctance is patients' distrust in the healthcare system, coupled with individual practitioners' difficulty in restoring that confidence. Patients in much research expressed a deficiency of faith in the government and the healthcare system.

Nurses and pharmacists recognized substantial obstacles in addressing patients' distrust in the healthcare system, as conversations on this mistrust in government are not considered part of their professional responsibilities and are seen as primarily a public health concern (32,33).

3.7. Impact of social media

Numerous research has elucidated the impact of social media on the capacity of nurses and pharmacists to mitigate vaccination reluctance. Patients are profoundly affected by their social media use. Nurses and pharmacists expressed feelings of helplessness in their efforts to dispel misunderstandings and falsehoods around vaccinations (34).

Nurses and pharmacists articulated the need to educate their patients to facilitate a transition from hesitance to acceptance. Research indicates that readily accessible information for individuals and healthcare professionals is a crucial facilitator in mitigating vaccination reluctance. Nurses and pharmacists may use these readily available tools (e.g., brochures and posters) to initiate discussions regarding vaccination hesitancy, educate patients about vaccines, and promote informed decision-making (35, 36).

Nurses identified a crucial facilitator as a reminder method for discussing immunizations during visits before planned vaccination appointments. By doing so, nurses were able to provide materials to patients and parents while allocating time to address problems.

4. Relationship between healthcare provider and patient

Nurses and pharmacists emphasized the need to cultivate a strong rapport with their patients to foster confidence and productive discussions about immunizations. This was especially pertinent in basic care and educational environments. Nurses and pharmacists saw that the time allocated to patients significantly enhanced the establishment of trust (37).

Nurses discovered that for patients exhibiting significant vaccine hesitation, establishing a mutually agreed-upon vaccination schedule—characterized by fewer simultaneous doses or increased intervals—proved advantageous; this arrangement must be well recorded among all healthcare professionals. This method guarantees the continuation of immunization administration while fostering patient engagement in the process. This was not identified as a facilitator for pharmacists (38).

Nurses and pharmacists emphasized the need for interprofessional cooperation in mitigating vaccination reluctance. This included cooperating with doctors, public health officials, and other healthcare professionals to formulate a coherent and uniform message to promote vaccination uptake. Nurses observed that their professional function and identity facilitated the establishment of robust ties with their patients. Research characterized occupational identity as a catalyst for mitigating vaccine reluctance and promoting immunization uptake (39-43).

5. Discussion

This scoping review sought to identify, characterize, and delineate the existing knowledge regarding a) the perceived barriers and facilitators encountered by nurses and pharmacists in addressing vaccine hesitancy among patients, and b) the strategies or interventions available for nurses and pharmacists to mitigate

vaccine hesitancy in their practice. We discovered 66 records detailing hurdles and facilitators for nurses and pharmacists in addressing vaccine hesitancy in practice, as well as current methods and interventions used by them to mitigate vaccination hesitation among patients. This study delineates the identified obstacles and facilitators to mitigating vaccination hesitancy within the framework of the COM-B Model of Behavior and aligns therapies with the intervention functions of the BCW. These frameworks form an extensive behavioral investigation of nurses' and pharmacists' competence, opportunity, and desire to confront vaccination reluctance in their patients (44, 45).

Identified obstacles were insufficient understanding of vaccination reluctance (capacity), the provider-patient connection (opportunity), and patients being misled about vaccines (motivation). Identified facilitators were the availability of educational materials (capacity), transparent communication with patients and/or parents (opportunity), and a collaborative approach to enhance vaccination acceptance (opportunity, motivation). Interventions included fostering a more inclusive workplace and instructing physicians on communicating with vaccine-hesitant patients. Future research might use our results from this behavioral analysis to identify and customize treatments targeting the behavioral factors associated with vaccination reluctance across various immunization programs, including COVID-19 vaccines.

Our results underscore the impact of nurses' and pharmacists' competencies in mitigating vaccine reluctance. The BCW defines capability as an individual's psychological and physical capacity to engage in a specific behavior, such as addressing vaccine hesitancy. This scoping review identified various barriers and facilitators concerning the psychological and physical competencies of nurses and pharmacists in tackling vaccine hesitancy.

Initially, the investigations indicated that nurses and pharmacists had a deficiency in comprehending vaccination reluctance. Previous research indicates that the majority of healthcare providers lack training on vaccine hesitancy (46, 47). The interventions identified in this scoping review predominantly featured educational and/or training components ($n = 73$), encompassing communication aids, guides, and tools designed to assist nurses and pharmacists in addressing vaccine hesitancy. According to the BCW, such educational interventions effectively mitigate capability-related barriers, including the insufficient understanding of vaccine hesitancy among nurses and pharmacists, as well as patients' misinformation regarding vaccinations. Nonetheless, despite the accessibility of these treatments, our analysis revealed that obstacles continue to impede their practical use. Enhanced implementation of educational and training components is essential to facilitate the use of vaccine hesitancy communication aids and tools in nursing and pharmacy practice.

Previous research has demonstrated that simulation training is an effective method for healthcare provider students to enhance their knowledge, skills, attitudes, and beliefs regarding vaccination practices. Prior studies have focused on medical students to create simulation interventions aimed at addressing vaccine hesitancy; however, there is a paucity of evidence concerning the application of simulation about vaccine hesitancy and the essential components required for nursing and pharmacy students. Future research may be advantageous in further developing educational interventions targeting vaccine hesitancy for nursing and pharmacy students (48).

6. Prospect and incentive

The interplay of obstacles and facilitators regarding opportunity and motivation significantly influences nurses' and pharmacists' capacity to combat vaccination reluctance. Opportunity denotes social and environmental factors external to an individual that either positively or negatively influence a specific behavior, whereas motivation is characterized as the cognitive processes that activate or suppress behavior. This review emphasizes the essential role of a trusting patient-healthcare provider relationship in vaccine acceptance. Prior research has recognized nurses and pharmacists as reliable healthcare providers, given their distinctive position within the healthcare system to engage in discussions with patients regarding health issues. However, this review has revealed multiple obstacles stemming from external social influences on patients, such as their distrust of the healthcare system, misinformation regarding vaccines, and the effects of social media on vaccine hesitancy (17).

Patients' unrestricted access to information on the internet may provide challenges for doctors in addressing concerns raised by anti-vaccination organizations or anecdotal accounts from acquaintances. Prior studies identify "informed opposition" patients, characterized by individuals who have conducted extensive research on adverse vaccine outcomes. These social influences complicate the ability of nurses and pharmacists to cultivate a trusting rapport and effectively mitigate vaccine hesitancy among their patients. Conversely, this research revealed that nurses and pharmacists may use their social power to facilitate good transformation. Opportunities exist to use established trust and credibility among nurses and pharmacists to enhance vaccination adoption (27, 40).

While several education and training initiatives were identified, there are fewer addressing opportunity- and motivation-related hurdles and facilitators, such as patients' distrust and the impact of social media. Through the mapping of the BCW intervention functions, we found a total of 16 persuasion interventions and eight enablement interventions. Prior research in behavioral science has demonstrated that persuasion and enablement interventions effectively address behavioral determinants associated with opportunity and motivation. In the context of vaccine hesitancy, such interventions encompass providers engaging in open dialogues with patients, exploring personalized solutions, sharing personal narratives, infusing emotion into the information conveyed, employing motivational interviewing techniques, and conducting empathetic discussions. These behavioral interventions are critically necessary to mitigate vaccine hesitancy, particularly in light of the ongoing COVID-19 pandemic (48).

Despite the prominence of vaccine research, manufacture, and distribution during this pandemic, deployment efforts may be obstructed by vaccination reluctance. This will significantly affect the attainment of herd immunity and the worldwide management of the pandemic. Social media initiatives, such as #ScienceUpFirst in Canada, have been established to combat the dissemination of COVID-19 disinformation online. This serves as a significant illustration of a persuasion and enablement intervention in which nurses and pharmacists can engage to mitigate COVID-19 vaccine hesitancy within the populace. For future intervention design concerning COVID-19 vaccinations and broader immunization initiatives, it is essential to incorporate tailored persuasion and enablement functions, alongside educational and

training strategies, to effectively address barriers related to capability, opportunity, and motivation for change.

7. Application of the BCW in analyzing vaccine reluctance

The BCW provides a structured methodology for comprehending the many elements affecting the target behavior (i.e., mitigating vaccination reluctance) and possible intervention strategies. This method elucidates obstacles and facilitators in behavioral terms, facilitating the identification of effective treatments and highlighting discrepancies in aligning interventions with behavioral variables. The literature on implementation science indicates that interventions are more efficacious when theoretical frameworks are employed to identify behavioral determinants and customize interventions accordingly. As previously mentioned, there are opportunities to utilize this theory-driven methodology to tailor interventions aimed at enhancing nurses' and pharmacists' capability, opportunity, and motivation to mitigate vaccine hesitancy among their patients. Recently, vaccine researchers have begun to use behavioral science to enhance the design and execution of interventions (45, 46).

The WHO Regional Office for Europe established the Tailoring Immunization Programmes (TIP) approach to enhance vaccine uptake. The TIP approach modifies the Behaviour Change Wheel (BCW) to address vaccine-related issues and emphasizes the necessity of comprehending barriers to vaccination before formulating interventions. Other researchers have utilized the BCW to ascertain factors influencing influenza vaccine uptake among adults with chronic respiratory ailments and healthcare professionals in long-term care settings, as well as to formulate an implementation intervention aimed at enhancing HPV vaccinations in primary care. We advocate for leveraging this momentum and persistently employing behavioral science to devise, execute, and assess interventions targeting vaccine hesitancy (47).

8. Strengths and weaknesses

This study had various merits, notably the use of a comprehensive JBI scoping review technique, including searches across several databases and grey literature. The selection, screening, extraction, and mapping processes were conducted by two independent reviewers. Additionally, by using the Behavior Change Wheel in conjunction with our scoping review results, we have distinctly delineated behavioral drivers and mechanisms of action that may be empirically evaluated to enhance our comprehension of effective treatments for addressing vaccination reluctance. This study delineates the subsequent limitations. Initially, we did not conduct a quality evaluation because the objective of this study was to delineate the available literature. Secondly, despite its comprehensiveness, our scoping study was constrained by the language and search words used. Consequently, our results may vary from those obtained in low-income and middle-income nations. Finally, our evaluation was performed before the advent of COVID-19 immunizations and excludes research specifically addressing vaccine reluctance related to COVID-19. Our comprehensive behavioral study offers a robust theoretical and empirical basis for designing treatments to combat COVID-19 vaccination reluctance in the future.

9. Summary

This scoping study provides a comprehensive behavioral analysis of the obstacles and facilitators affecting nurses' and pharmacists' capacity to tackle vaccination hesitancy, along with solutions aligned with these behavioral factors. Nine hurdles and six facilitators were found for nurses' and pharmacists' skill, opportunity, and desire to mitigate vaccination reluctance among their patients. The predominant solutions now available concentrate on education and training, aiming to overcome identified capability-related obstacles to mitigating vaccination reluctance. Limited treatments are available to address identified opportunity- and motivation-related obstacles. Future vaccination practitioners and researchers may use these results as a basis to customize treatments aimed at overcoming obstacles and enhancing facilitators to combat vaccine reluctance. Further evaluative study is necessary to ascertain if treatments target the appropriate behavioral factors and to determine their efficacy.

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الملخص

الخلفية: تُعتبر اللقاحات من بين أكثر التدخلات الصحية العامة فعالية، حيث تمنع ملايين الوفيات سنوياً. ومع ذلك، فإن التردد في اللقاحات - الذي يتميز بالتأخير في القبول أو الرفض التام - يمثل تحديات كبيرة لتحقيق مناعة القطيع. وقد تفاقمَت هذه المشكلة بسبب جائحة COVID-19، مما يبرز الحاجة الملحة لاستراتيجيات فعالة لمكافحة تردد اللقاحات، لا سيما بين مقدمي الرعاية الصحية مثل الممرضين والصيدالَة.

الطرق: استخدمت هذه المراجعة الاستكشافية منهجية منظمة لتحديد وتحليل الدراسات التجريبية والأدبيات الرمادية المتعلقة بالعوائق والمحفزات التي يواجهها الممرضون والصيدالَة في التعامل مع تردد اللقاحات. تم إجراء البحث عبر عدة قواعد بيانات، بما في ذلك MEDLINE وCINAHL، وفقاً لمنهجية مراجعة JBI.

النتائج: حددت المراجعة تسع عوائق رئيسية تواجه الممرضين والصيدالَة، بما في ذلك المعلومات الخاطئة حول اللقاحات، نقص أدوات الاتصال، عدم كفاية الوقت للنقاشات، وانعدام الثقة في النظام الصحي. وعلى النقيض من ذلك، تم الإشارة إلى ستة محفزات، مثل توفر المواد التعليمية وإقامة علاقات ثقة مع المرضى. يبرز التحليل أن التواصل الفعال والتعاون بين المهنيين ضروريان في التخفيف من تردد اللقاحات.

الخاتمة: يلعب الممرضون والصيدالَة دوراً حيوياً في تعزيز اللقاحات وإدارتها، ومع ذلك يواجهون عوائق كبيرة تعيق قدرتهم على معالجة تردد اللقاحات بشكل فعال. تؤكد النتائج على الحاجة إلى تدخلات مستهدفة تعزز مهاراتهم في التواصل وتوفر الموارد الكافية. يجب أن تركز الأبحاث المستقبلية على تطوير وتنفيذ استراتيجيات تمكن مقدمي الرعاية الصحية من تعزيز قبول اللقاحات بين المرضى.

الكلمات المفتاحية: تردد اللقاحات، التمريض، الصيدالَة، الصحة العامة، التعاون بين المهنيين.