THE IMPACT OF NURSES VACCINATED ON INFECTION TRANSMISSION: SCOPING REVIEW PROTOCOL

Impacto da vacinação dos enfermeiros na transmissão de infeções: protocolo *scoping review*

El impacto de la vacunación de los enfermeros en la transmisión de infeciones: protocolo de revisión exploratoria

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ABSTRACT

Background: healthcare-associated infections represent a significant global challenge, affecting thousands of patients and leading to prolonged hospitalizations with increased mortality rates. Vaccination should be seen as an essential tool in infection prevention. **Objectives:** to map the impact of clinical practice nurses' vaccination in a hospital setting, on reducing infection transmission. **Methodology:** a Scoping Review will be conducted following the Joanna Briggs Institute methodology. The research will be carried out in three databases: PubMed, Web of Science, and EBSCO, including studies published in english, portuguese, and spanish, over the past five years. The mnemonic population, concept, and context will be used to define inclusion criteria. Studies selection, extraction and data synthesis will be performed by three independent reviewers, following the Prisma 2020 assessment recommendations. Any discrepancies in data extraction will be resolved by consensus among the researchers. The quality of the selected articles and the risk of bias will be analyzed. **Conclusion:** to contribute to the dissemination of knowledge demonstrating the effectiveness of vaccination and its impact on reducing infection transmission, ensuring the safety of both patients and nurses.

Keywords: vaccination, nurses, infectious disease transmission, professional to patient, hospital

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RESUMO

Enquadramento: as infeções associadas aos cuidados de saúde representam um desafio global significativo afetando milhares de utentes e levando a hospitalizações prolongadas com um aumento da mortalidade. A vacinação deve ser vista como uma ferramenta essencial na prevenção das infeções. **Objetivos:** mapear o impacto que a vacinação dos enfermeiros da prática clínica em contexto hospitalar tem na redução da transmissão de infeções. **Metodologia:** desenvolvimento de uma *Scoping Review*, segundo a metodologia da *Joanna Briggs Institute*. A pesquisa será realizada em três bases de dados: *Pubmed, Web of Science, EBSCO e* englobados estudos publicados em inglês, português e espanhol, nos últimos cinco anos. Será utilizada a mnemónica população, conceito e contexto, na definição dos critérios de inclusão. A seleção dos estudos, extração e síntese de dados será realizada por três revisores independentes e conduzida segundo as recomendações *Prisma 2020 assessment*. Quaisquer divergências na extração de dados serão resolvidas por consenso entre os investigadores. A qualidade dos artigos selecionados e o risco de enviesamento serão analisados. **Conclusão:** contribuir para a disseminação do conhecimento que demonstre a eficácia da vacinação e o impacto que a mesma representa na redução da transmissão de infeções, assegurando a segurança do utente e dos enfermeiros.

Palavras-chave: vacinação, enfermeiros, transmissão de doença infecciosa do profissional para o paciente, hospitais

RESUMEN

Marco contextual: las infecciones asociadas a la prestación de cuidados de salud representan un desafío significativo afectando miles de enfermos, llevando a hospitalizaciones prolongadas con un aumento de la mortalidad. La vacunación debe verse como una herramienta esencial para la prevención de infecciones. **Objetivos:** mapear el impacto que la vacunación de los enfermeros en la práctica clínica en contexto hospitalario tendrá en reducir la transmisión de infecciones. **Metodología:** desarrollo de Scoping Review, según metodología Joanna Briggs Institute. La búsqueda se llevará a cabo en tres bases de datos: Pubmed, Web of Science, EBSCO, envolviendo estudios publicados en inglés, portugués y español, en los últimos cinco años. Se utilizará la mnemónica población, concepto y contexto, para definir criterios de inclusión. La selección de los estudios, extracción y síntesis de datos serán desarrolladas por tres revisores independientes y realizadas de acuerdo con recomendaciones del Prisma Evaluación 2020. Cualquier desacuerdo en la extracción de datos se resolverá por consenso entre investigadores. Serán analizados la calidad de los artículos seleccionados y riesgo de sesgo. **Conclusión:** contribuir para difundir conocimientos que demuestren la efectividad de la vacunación y el impacto que tiene en reducir la transmisión de infecciones, garantizando la seguridad del enfermo y enfermeros.

Palabras clave: vacunación, enfermeros, transmisión de enfermedad infecciosa de profesional a paciente, hospitales

INTRODUCTION

The infections associated to health care (IACS) represent a significant global issue, affecting millions of people annually and contributing towards the increase in morbidity and mortality. Nurses, as the main care providers, play a critical role in the prevention and control of the transmission of these diseases (Pless et al., 2017).

Health professionals, namely, nurses, are potentially exposed to the transmission of infectious contagious diseases, which can be prevented through vaccination (Yu et al., 2019).

The vaccination appears, as a fundamental public health intervention, using medication prepared from microorganisms (viruses or bacteria) or from genetic information, with the objective of stimulating a protective immunologic response against one or more infectious contagious diseases. It is therefore recognised as one of the most efficient and secure strategies for the prevention of diverse transmissible diseases. (Ordem dos Farmacêuticos, 2023).

Thus, besides individual protection, the vaccination promotes group immunity, which protects, not only the vaccinated, but also those who cannot be vaccinated for health reasons, such as newborns or immunocompromised individuals.

The patients with an immunocompromised system present a greater vulnerability to infections, due to immunologic dysfunctions, resulting from the disease progression and the use of immunosuppressant therapies. The immunization of close contact, namely, with health professionals, constitutes an essential strategy to reduce the transmission of pathogens, and reduce the transmission risk for these patients (Villena & Durán, 2020).

Thus, vaccination represents an essential health investment, contributing towards associated cost reduction in treatment and the complications of infectious contagious diseases (Balau, 2024).

Besides the resource economy, vaccination is the most effective form of infection prevention, and correlational studies show that the higher the vaccination the rate against influenza in the health professionals, the lower the rate of nosocomial influenza in the critical care units (Hassan et al., 2022).

The continuous monitoring of the vaccination rate is essential to assess the impact of those recommendations and understand the adhesion evaluation among health professionals. According to the Portuguese Society of Pulmonology (2025), data obtained from the beginning of the period 2024/2025 indicates an increase in the vaccination coverage in comparison to the previous period. Regarding health professionals in direct contact with patients, the vaccination rate observed was 49.7%, which reflects an increase of 3,85 percentage points in relations to the previous period.

It should be noted that nurses, due to their proximity with the population, play a crucial role in promoting the vaccination and the construction of community trust. However, the nurses' hesitation an insecurity with regards to vaccination can negatively influence its recommendation and adherence thereof. (Yu et al., 2019).

The decision to adhere to the vaccination against influenza and COVID-19 is influenced by intrinsic factors to health professionals. Studies point out that the lack of knowledge, concerns about side effects,

fear of administration and security issues are common reasons for vaccine hesitancy (Colaprico et al., 2002, Filipe, 2012).

Despite the vast scientific information regarding immunization available, many health professionals contribute towards that behaviour, however, the lack of efficient institutional politics in this domain is highlighted (Hibberd, 2025).

Influenza infection, among health professionals contributes to the work absenteeism compromising the normal functioning of the health system. However, this problematic can be mitigated by vaccination. A study carried out demonstrated that health institutions where the professionals' vaccination rate surpassed 60%, presented a minor mortality rate associated to influenza, in comparison with those where the vaccination rate was inferior to that threshold (Hibberd, 2025). Work absenteeism among nurses has been associated to the non-adhesion to the vaccination (Samyn et al., 2021).

In the view of this scenario (Hibberd 2025), it is highlighted that all the hospital institutions and units which provide direct care to the patients, should develop and implement a comprehensive immunization policy to the health professionals. Such a policy should clearly describe the risk of exposure to avoidable diseases through vaccination. Besides this, it argues that new employees should present an updated registry of their vaccination schedule before the start of their work activity, and that the workers in functions, should be submitted to an annual revision to ensure the update of the vaccination schedule.

Another study carried out in an Asian hospital, shows that the health professionals frequently request sick leave for respiratory illnesses and on average, this licence extends to a period of 4.3 days (Hassa net al., 2002).

It is important to highlight, that the transmission of infectious contagious illnesses occur regardless of the presence of evident clinical symptoms, being that, approximately 25% of the health professionals are classified asymptomatic carriers. Besides this, between 60% to 80% of the professionals continued to perform their duties even with the symptoms of illness. To conclude, a study demonstrates that the prevention of influenza transmission is viable through vaccination, which reduces mortality between 70% to 90% in healthy adults.

Thus, the vaccination represents the most efficient means of preventing the illness and minimize its impact (Mestre et al., 2024).

In Portugal, although the vaccination against influenza and COVID-19 is not included in the National Vaccination Programme, it is strongly recommended for health professionals, with the guidance from the Direção-Geral da Saúde (2024).

In this way, a preliminary research was carried out, at Joanna Briggs Institute (JBI) Database of Systematic Reviews and Implementations Reports, at PubMed, at Web of Science and EBSCO, not having found literature revisions (published or in preparation) about the study theme.

This revision, intends to, answer to the following research question: Does the vaccination of the practical clinical nurses in a hospital context have an impact in the reduction of infection transmissions?

Objetives

Chart the impact that vaccinations of practical clinical nurses in a hospital context have in the reduction of infection transmissions.

METHODOLOGY

A Scoping Review according to Amendoeira et al. (2021), is a synthesis of evidence which identifies and charts the degree of evidence available in a determined topic, area, concept or question very often independent of the source (primary research, revisions, non-empirical evidence) within or through particular contexts.

In this way, we intend to develop a Scoping Review according to the JBI method, woth the objective of charting the impact that the vaccination of the clinical practical nurses in a hospital context have in the reduction of transmission.

In the present study, for the definition of eligibility criteria the PCC mnemonic (population, concept and context). Therefore, studies will be included that: a) with regards to the participants, vaccinated nurses with the influenza vaccine and/or COVID-19 and non-vaccinated, b) with regards to the concept, these relate to the relationship between vaccination and the infection transmission within the health institutions, c) with regards to the context we will englobe the hospital context. Primary studies, quantitative and qualitative and literature revisions will be included, excluding published works in congresses (communication oral and /or poster formats), editorials and letters to the editor.

The study selection, extraction and synthesis of data will be carried out by three independent reviewers. It will be carried out according to the Prisma 2020 assessment recommendations and presented by Prisma flow diagram – carried out in four stages: the first by duplicates, the second title and summary, and the third by integral text and the fourth stage by bibliographic references of the articles included. This protocol is registered in the platform: Open Science Framework (OSF), https://doi.org/10.17605/OSF.IO/HSB3T.

Regarding the research, the following research equation will be used:

((Vaccination) or (Immunization) or (vaccines) AND (nurse) or (nurses) AND (influenza vaccine) AND (COVID-19 vaccines) AND (Vaccine hesitancy) AND (Infectious Disease Transmission, Professional-to-Patient)) in three databases: *Pubmed, Web of Science* e *EBSCO*. Studies published in English, Portuguese and Spanish will be included, in the last five years, namely from the 1st January 2020 to the 1st January 2025.

Both reviewers will extract the data of the study independently onto a prepared spreadsheet (*Excel®, Microsoft Corporation, Redmond, WA*) (Table 1).

The data will consist of the author's first and last name, publication date, country of origin, language, main objective, method, sample size, gender, age period/time of study, country under study, data sources and relevant concepts.

Table 1

Instrument developed by the investigators for data

Data selection	
First Author's Last Name	
Date of Publication	
Country of Origin	
Language	
Main Objective	
Method	
Sample Size	
Gender	
Age	
Period / Time of Study	
Country under Study	
Data sources	
Relevant Concepts	

Any discrepancies in the data extraction will be solved by consensus between two investigators who extracted the data, with the participation of a third investigator. The quality of the articles selected will be validated by the STROBE checklists application and the risk of bias will be assured only by the inclusion of studies relating to the clinical practical nurses vaccination in hospital context and vaccinated with the influenza and the COVID-19 vaccinations.

CONCLUSION

The nurses, in their duty functions, are constantly exposed to infectious agents. The vaccination of these professionals assumes, therefore, a crucial role in the risk reduction of contracting diseases and their potential complications. The vaccination of nurses also contributes to the interruption of the transmission chain of infectious diseases, protecting the more vulnerable individuals. Playing the fundamental role of promoting health and serving the example to the population, the vaccination should be faced by the nurses as an ethic and professional commitment. The infectious diseases can lead to work absenteeism, affecting the quality of health care provided to the patients and overloading the health systems with additional costs. The vaccination arises, as an essential measure to protect both the nurses and the individuals and the community in general.

With the scope of the investigation, it is expected that this revision motivated the formulation of specific questions which justify the development of new systematic literature revisions.

It is intended, in this way, to contribute towards knowledge dissemination which demonstrates the efficiency of the vaccination and its impact in the reduction of infection transmissions, guaranteeing the patients' and health professionals' security.

Approval by the Ethics Committee

Not applicable.

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The study did not receive funding.

CONFLICT OF INTEREST

The authors declare there was no conflict of interest.

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