

Knowledge of nursing students on infection prevention and control measures: scoping review protocol

Conhecimento dos estudantes de enfermagem sobre medidas preventivas e controlo de infecção: protocolo *scoping review*

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ABSTRACT

Objective: to map the knowledge of nursing students regarding infection prevention and control measures associated with health care. **Method:** scoping review according to the Joanna Briggs Institute methodology. The search was conducted in the following databases: PubMed, CINAHL® Plus with Full Text, Nursing & Allied Health Collection, Cochrane Plus Collection, MedicLatina (via EBSCOhost). Studies written in Portuguese, English and Spanish published in the last five years and extracted for the Rayyan QCRI platform will be considered for inclusion in this review®. Two independent reviewers carried out the analysis of the relevance of the articles, extraction and synthesis of the data, with preparation of the respective flowchart. **Descriptors:** Students, Nursing; Universal Precautions; Infection Control.

RESUMO

Objetivo: mapear o conhecimento dos estudantes de enfermagem relativo às medidas de prevenção e controlo de infecção associada aos cuidados de saúde. **Método:** *scoping review* segundo a metodologia de Joanna Briggs Institute. A busca foi realizada nas seguintes bases de dados: PubMed, CINAHL® Plus with Full Text, Nursing & Allied Health Collection, Cochrane Plus Collection, MedicLatina (via EBSCOhost). Serão considerados para inclusão nesta revisão estudos escritos em português, inglês e espanhol publicados nos últimos cinco anos e extraídos para a plataforma Rayyan QCRI®. Dois revisores independentes procederam à análise de relevância dos artigos, extração e síntese dos dados, com elaboração do respectivo fluxograma. **Descritores:** Estudantes de Enfermagem; Precauções Universais; Controle de Infecções.

INTRODUCTION

As a result of the high number of adverse events in health care institutions, the user safety has been the focus of attention for the definition of health policies.

Health policies cover a variety of skills and appropriate interventions to prevent and minimize risks to users and health professionals. In several countries, specific guidelines have been developed for the prevention and control of multidrug-resistant microorganisms in health care environments, which are considered an essential component in limiting the spread of healthcare-associated infections (HAIs)⁽¹⁾.

Universal Precautions (UP) are guidelines which aim to reduce the risk of transmission of various pathogens, which recommend infection control practices in health institutions⁽²⁾, covering aspects such as hand washing, wearing gloves, gowns, safety glasses, facial protector, respiratory label and safe injection practice. These guidelines were also adopted by Portugal and are known as basic infection control precautions (SICPs)⁽³⁾. UPs or SICPs are a cornerstone in infection prevention, being considered preventive strategies. There are several documents, protocols and recommendations of good practice at national, European and international

level that guide the professional practice while taking into account the epidemiological chain of infection, transmission route and pathology. As contact precautions have become more commonly used in an attempt to control the spread of various multidrug-resistant microorganisms, the awareness of health professionals has increased regarding the possible unintended consequences of the use of these precautions⁽⁴⁻¹⁾.

Patient isolation procedures are associated with a reduced risk of transmission, it can be offset by a reduction in the length of hospital stay and in the probability of adverse events occurring and improved access to care in a timely manner^(4,1). In addition, in terms of health, supporting SICPs has a strong socio-economic impact, contributing to the reduction of hospitalization time and the minimization of morbidity and mortality⁽⁵⁾. The implementation of national and international policies for the prevention and control of HAIs, determine the implementation of strategies to promote good practices at the level of SICPs and in the implementation of Intervention Bundles. They include protocols, standards, procedures and effective measures used in a systematized manner in the provision of care to the user in order to reduce the possibility of transmission of microorganisms, prevent and control the increase of HAIs and promote safety in health care.

HAIs, which occur frequently in health care units, are considered a serious problem and are extremely important for public health⁽⁶⁻⁷⁾. Health professionals, including nurses and nursing students, are often exposed to various types of infections during their clinical practice. The knowledge, compliance and compliance of UPs or SICPs by these actors are essential in the prevention of HAIs and the protection of users and health professionals in exposure to infectious agents⁽²⁾.

The role that health training plays is fundamental for the acquisition of theoretical knowledge and the adoption of safe procedures in the provision of health care. Increased health literacy results from the combination of individual skills and social resources. The ability of each person to acquire, understand and use information and from a social point of view, accessibility to services, the way information

is transmitted and the ability to move in the health system may or may not compromise of literacy development. In this context, the need to develop systematized training programs for nursing students emerges, as future health professionals, with the involvement of higher education institutions⁽²⁾.

Thus, the aim of this study was to map the knowledge of nursing students regarding infection prevention and control measures associated with health care. This study aims to answer the following guiding question, using the strategy of participants/population, context and concept (PCC) according to Figure 1: What is the knowledge of nursing students regarding prevention and control measures of healthcare associated infections?

Participants/ Population (P)	Nursing students
Context (C)	Clinical practice
Concept (C)	Good practicesfor infection control and prevention fornursing students

Figure 1 - Acronym PCC. Porto, PT, Portugal, 2022
Source: Prepared by the authors, 2022.

METHOD

A scoping review was conducted, guided by the methodology proposed by the Joanna Briggs Institute⁽⁸⁾, with the objective of mapping the knowledge of nursing students regarding infection prevention and control measures associated with health care. This type of study allows the mapping of existing knowledge underlying the theme under study, enabling the recognition of gaps⁽⁹⁾.

Protocol and registration

To ensure methodological rigor in the development of the protocol, we adopted the principles adopted by preferred reporting items for Systematic reviews and Meta Analyses extension for Scoping Reviews (PRISMA-ScR[®])⁽¹⁰⁾. The protocol was registered on the platform in OSF HOME (DOI 10.17605/OSF.IO/59GAV) and can be consulted via the link: <https://osf.io/59gav/>.

Eligibility criteria

The scoping review strategy is based on an exploratory review, in order to know the state of the art under a given context and the gaps identified in the studies already conducted⁽⁸⁾. Subsequently, the reference lists of the literature will be verified to identify complementary studies.

The inclusion criteria were studies published in the last five years (2017-2022) and that addressed nursing students from any country and higher education institution. The search will be performed by two independent investigators, in the Portuguese, English and Spanish languages, available in free full text. Studies related to other populations, non-delimited research design and undefined objectives were excluded.

Sources of information

The research was conducted in March 2022 in the databases: PubMed, CINAHL[®] Plus with Full Text, Nursing & Allied Health Collection, Cochrane Plus Collection, MedicLatina (via EBSCOhost). It should be noted that no evidence of the scoping review on this theme was found. For the search for information, the descriptors in English, Spanish and Portuguese will be used, as shown in Figure 2.

Boolean AND and OR operators will be used for the combinations between the descriptors and to locate studies between the themes AND and OR for synonym⁽¹⁰⁾ as shown in Figure 3.

Selection of studies

The articles identified according to the eligibility criteria will be organized on the Qatar

Computing Research Institute (Rayyan QCRI) platform[®]. The identified studies will then be read by title and abstract and after reading the identified studies in full. The results of the research will be written according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR[®])⁽¹¹⁾ according to Figure 4, considering the predefined inclusion and exclusion criteria.

Data extraction

To assist in data extraction, the researchers will elaborate a table of evidence composed of the following items: title, type and design of the study, author(s)/year, objectives, population studied, context and the main results, as shown in Figure 5. The data will be extracted and analyzed by two researchers independently, using a third reviewer in case of disagreement who will decide on the inclusion or exclusion of the article.

Ethical considerations

This review will allow the analysis and systematization of the perception of nursing students regarding prevention and control measures of associated with health care infections, in order to improve education/training strategies in the area. Therefore, there are no ethical issues and, therefore, there is no need to submit it to an Ethics Committee.

CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

Descriptors		
English	Spanish	Portuguese
Nursing Students	<i>Estudiantes de Enfermería</i>	<i>Estudantes de Enfermagem</i>
Universal Precautions	Precauciones Universales	Precauções Universais
Knowledge	Conocimiento	Conhecimento

Figure 2 - Descriptors for research. Porto, PT, Portugal, 2022

Source: Prepared by the authors, 2022.

Database	Controlled terms	Term not controlled
PubMed	(((((Knowledge[MeSH Terms]) OR (Knowledge[Title/Abstract]) AND (nursing students[MeSH Terms])) OR (nursing students[Title/Abstract]) AND (Universal Precautions[MeSH Terms])) OR (Universal Precautions[Title/Abstract])))	Precautions Standard/Standard Precautions
CINAHL	TX Knowledge AND TX nursing students AND TX Universal Precautions	Precautions Standard/Standard Precautions
Nursing & Allied Health Collection, Cochrane Database of Systematic Reviews e MedicLatina	TX Knowledge AND TX nursing students AND TX Universal Precautions	Precautions Standard/Standard Precautions

Figure 3 - Descriptors and synonyms used in databases. Porto, PT, Portugal, 2022

Source: Prepared by the authors, 2022.

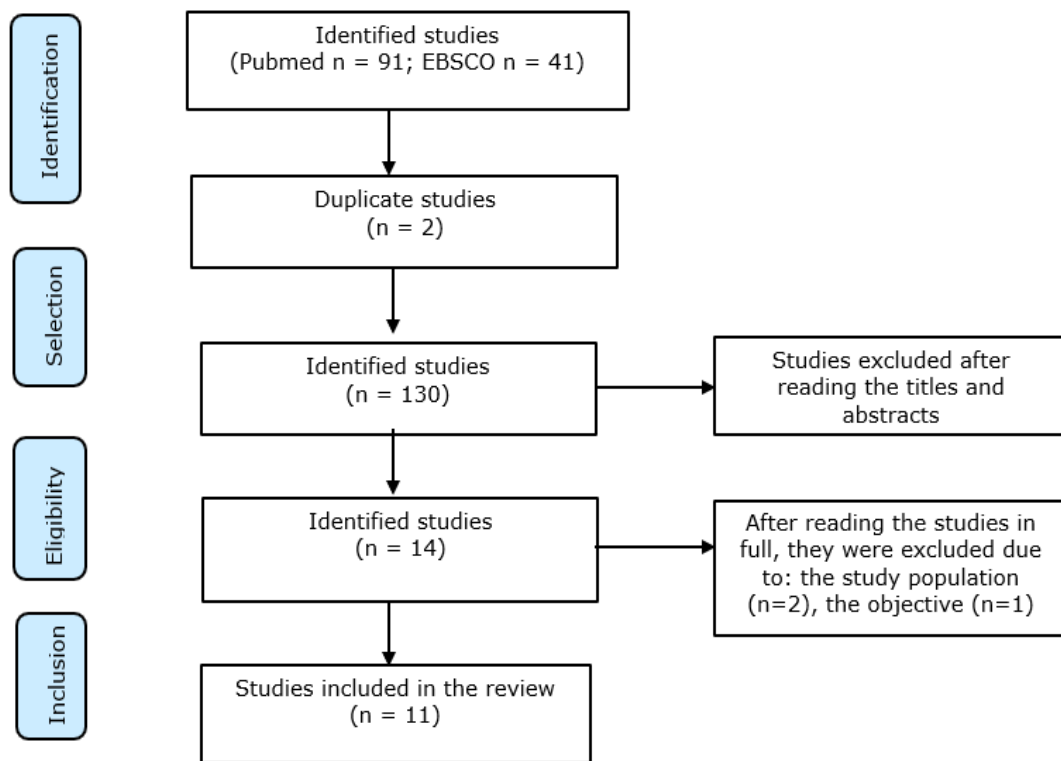


Figure 4 - Flowchart of the study selection process. Porto, PT, Portugal, 2022

Source: PRISMA Flow Diagram adapted from Page et al., 2020.

Title	Type and drawing of the study	Author(s) / Year	Objectives	Population studied	Context	Main results

Figure 5 - Scoping review data extraction table. Porto, PT, Portugal, 2022

Source: Prepared by the authors, 2022.

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