Instruments on patient safety knowledge/attitudes among undergraduate students: a scoping review protocol

Instrumentos sobre conhecimentos/atitudes em segurança do paciente entre graduandos: protocolo de revisão de escopo

Instrumentos sobre conocimientos/actitudes que poseen los estudiantes universitarios sobre seguridad del paciente: protocolo de revisión de alcance

Samanta Luíza da Silva Oliveira[1]
ORCID: 0000-0001-5764-2619

Fabrícia Moreira Amorim Amaral[2]
ORCID: 0000-0003-4765-0062

Cissa Azevedo[3]
ORCID: 0000-0001-5881-5710

Marília Alves Hoffmann[1]
ORCID: 0000-0002-1950-9080

Tatiana Aparecida Rodrigues[1]
ORCID: 0000-0002-0208-1866

Helen Cristiny Teodoro Couto Ribeiro[4]
ORCID: 0000-0001-9365-7228

Luciana Regina Ferreira da Mata[1]
ORCID: 0000-0002-5080-4643

1 Federal University of Minas Gerais, MG, Brazil
2 Municipality of Contagem, MG, Brazil
3 Federal University of Viçosa, MG, Brazil
3 Federal University of São João Del-Rei, MG, Brazil

Deputy Editor:
Paula Vanessa Peclat Flores
ORCID: 0000-0002-9726-5229

Section Editor:
Érica Brandão de Moraes
ORCID: 0000-0003-3052-158X

Corresponding author:
Luciana Regina Ferreira da Mata
E-mail: lucianarfmata@gmail.com

ABSTRACT

Objective: To map the validated instruments available in the literature to assess the knowledge and attitudes of undergraduate students in the health area about patient safety. **Method:** A scoping review conducted based on the Joanna Briggs Institute methodology, using the PRISMA-ScR checklist extension, in the following information sources: Virtual Health Library, MEDLINE via Pubmed, COCHRANE, CINAHL, Scopus, Embase, Web of Science and Google Scholar. Studies that answer the research question, published in English, Portuguese and Spanish and that present a description of the instrument used will be considered eligible. Selection will take place independently by two reviewers, based on the Rayyan software. Disagreements will be appreciated by a third reviewer. Data synthesis and extraction will be performed considering the items of a form prepared by the authors. The results will be presented through a summary chart, flowchart and narrative discussion. Review record in the Open Science Framework: https://osf.io/wak7f.

DESCRIPTORS: Patient Safety; Surveys and Questionnaires; Health Knowledge, Attitudes and Practice; Health Sciences Students.

RESUMO

Objetivo: Mapear os instrumentos validados disponíveis na literatura para avaliação de conhecimentos e atitudes de estudantes de graduação na área da saúde sobre segurança do paciente. **Método:** Revisão de escopo conduzida a partir da metodologia *Joanna Briggs Institute,* com utilização da extensão do *checklist* PRISMA-ScR, nas seguintes fontes de informação: Biblioteca Virtual em Saúde, MEDLINE via Pubmed, COCHRANE, CINAHL, Scopus**,** Embase, *Web of Science* e *Google Scholar*. Serão considerados elegíveis estudos que respondam à pergunta de pesquisa, publicados em inglês, português e espanhol e que apresentem a descrição do instrumento utilizado. A seleção ocorrerá de maneira independente por dois revisores, a partir do *software Rayyan.* Divergências serão apreciadas por um terceiro revisor. Síntese e extração dos dados serão executadas considerando os itens de um formulário elaborado pelos autores. Os resultados serão apresentados por meio de quadro resumo, fluxograma e discussão narrativa. Registro da revisão no *Open Science Framework*: https://osf.io/wak7f.

DESCRITORES: Segurança do Paciente; Inquéritos e Questionários; Conhecimentos, Atitudes e Prática em Saúde; Estudantes de Ciências da Saúde.

RESUMEN

Objetivo: Mapear los instrumentos validados disponibles en la literatura para evaluar el conocimiento y las actitudes que poseen los estudiantes universitarios del área de la salud sobre la seguridad del paciente. **Método:** Revisión de alcance realizada según la metodología del *Joanna Briggs Institute*, utilizando la extensión de la *checklist* PRISMA-ScR, en las siguientes fuentes de información: Biblioteca Virtual en Salud, MEDLINE a través de Pubmed, COCHRANE, CINAHL, Scopus, Embase, *Web of Science* y *Google Scholar*. Se considerarán elegibles los estudios que respondan a la pregunta de investigación, publicados en inglés, portugués y español y que presenten una descripción del instrumento utilizado. La selección se llevará a cabo de forma independiente por dos revisores mediante el *software Rayyan*. Un tercer revisor evaluará los desacuerdos. La síntesis y extracción de los datos se realizará considerando los ítems de un formulario elaborado por los autores. Los resultados se presentarán a través de cuadro resumen, diagrama de flujo y discusión narrativa. La revisión fue registrada en *Open Science Framework*: https://osf.io/wak7f.

DESCRIPTORES: Seguridad del Paciente; Encuestas y Cuestionarios; Conocimientos, Actitudes y Prácticas de salud; Estudiantes de Ciencias de la Salud.

INTRODUCTION

Patient safety is defined as a structure of organized activities that support cultures, processes, procedures, behaviors, technologies and environments in the health area, with the intention of reducing risks, occurrence of avoidable harms and their impact, if it occurs; in order to reduce the probability of errors[1].

The World Health Organization (WHO) highlights issues related to patient safety as a worldwide priority. Since 2004, through the creation of the World Alliance for Patient Safety, several countries have mobilized towards the implementation of safe practices. Thus, global challenges and international goals for patient safety were created[2].

Another strategy adopted by the WHO was the elaboration and publication of the "Multi-professional Patient Safety Curriculum Guide", which defines the guidelines for the organization of patient safety curricula in higher education in health[3]. This guide was designed based on the Australian Framework on Patient Safety Education, which describes which skills must be developed by the health professionals so that they may provide safer care, and was structured to allow integration of the theme in the already existing curricula[3].

In Brazil, the National Program for Patient Safety, established in 2013 by the Ministry of Health, presents, as one of the action axes, the increase in the number of research studies related to patient safety and the inclusion of the theme in undergraduate and graduate courses in the health area[4].

Different international organizations recommend teaching patient safety during higher education in the health area as a way to contribute to the development of skills in this field[5]. Discussion of the theme during professional training is an important global strategy to strengthen the safety culture[6], as it can contribute to the development of safe practices by the professionals[7]. For this, there needs to be a reflection on the curricular organization modality, as the value of clinical training to the detriment of training in patient safety still persists[8].

In this perspective, recognizing the teaching scenario of undergraduate health courses based on understanding the students' level of knowledge and attitudes towards the patient safety construct is an indispensable stage to direct actions in order to improve the professional training process[9].

By means of measuring instruments, it is possible to assess, in a standardized and systematic way, aspects related to the construct to be evaluated, provided that the instrument's design is based on validity studies, which gives greater reliability to the results they measure[10]. However, a gap is noticed in national and international knowledge regarding research studies that assesses the students' knowledge and attitudes in patient safety based on validated instruments, as well as studies that relate the theme with undergraduate students[9,11].

A preliminary search was conducted in February 2021 in the Virtual Health Library and in the COCHRANE, CINAHL, EMBASE, SCOPUS, Web of Science and MEDLINE via PubMed databases. Until February 4th, 2021, no scoping or systematic reviews were found in progress

or completed that addressed aspects related to the topic of interest.

Therefore, the relevance of this proposal for a scoping review is justified, which aims at mapping the validated instruments available in the literature to assess the knowledge and attitudes of undergraduate students in the health field about patient safety. The expectation is that these instruments may be used in future research studies in order to identify the need for interventions to strengthen the theme in the training of future professionals.

METHOD

This is a scoping review that will be conducted according to the methodology proposed by the Joanna Briggs Institute (JBI)[12]. The findings of this review will be reported using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist extension, PRISMA-ScR, adapted for conducting scoping review studies[13]. It is thus expected to attain adequacy of the study constitution and to guarantee its quality. The review protocol is registered in the Open Science Framework platform and can be accessed at https://osf.io/wak7f.

Review question

Formulation of the guiding question was based on the PCC (Population, Concept and Context) mnemonic. Thus, the review question will be the following: "Which instruments/scales/ questionnaires exist in the literature to assess knowledge and attitudes about patient safety among undergraduate students in the health field?"

Inclusion criteria

Participants

This review will consider instruments developed for undergraduate students attending any course in the health area, in any year of training, institution and country.

Concept

This scoping review will consider studies that describe the validation process of instruments to assess patient safety knowledge and attitudes among undergraduate students attending courses in the health area.

Knowledge and attitudes in patient safety comprise a group of attributes that health professionals must develop so that they may act preventively, in order to promote a positive safety culture and qualified health care[3].

The instruments will be described in terms of the number of dimensions or factors, items, scoring system and classification. The studies must present the analytical results that support the evidence of the instrument's validity. The psychometric evaluation will be based on the definitions of the COSMIN[14] taxonomy of measurement properties. Instruments aimed at isolated knowledge of a certain area of patient safety (examples: knowledge on hand washing and knowledge on safe administration of medications, among others) will be disregarded.

Context

Studies carried out with students from any country and type of educational institution (public or private) will be considered.

Types of Evidence Sources

This review will consider articles of any methodological design, as well as dissertations and theses that answer the research question. The searches will be performed in the following databases: MEDLINE (PubMed), Virtual Health Library, EMBASE, COCHRANE, CINAHL, SCOPUS and Web of Science. Additional strategies will be considered, namely: Google Scholar search, analysis of the reference list of studies included and of the studies excluded that have mentioned any instrument related to the concept proposed for this review.

Search strategy

The search strategies were defined in the Virtual Health Library and in six databases by the team of reviewers together with a librarian. Thus, it is expected to achieve correct use of the vocabularies in each of the databases defined (Figure 1).

Information sources	Search Strategy
Virtual Health Library	("Segurança do Paciente" *OR* "Patient Safety" *OR* "Seguridad del Paciente" *OR* "Sécurité des patients" *OR* "Gestão da Segurança" *OR* "Safety Management" *OR* "Administración de la Seguridad" *OR* "Gestion de la sécurité" *OR* "Administração da Segurança" *OR* "Administração de Segurança" *OR* "Controle de Adversidades" *OR* "Controle de Perigos" *OR* "Controle do Perigo" *OR* "Gerenciamento de Segurança" *OR* "Gestão de Adversidades" *OR* "Gestão de Perigos" *OR* "Gestão de Segurança" *OR* "Gestão do Perigo") AND ("Inquéritos e Questionários" *OR* "Surveys and Questionnaires" *OR* "Encuestas y Cuestionarios" *OR* "Enquêtes et questionnaires" *OR* "Enquetes e Questionários" *OR* inquéritos *OR* "Levantamentos e Questionários" *OR* "Métodos de Inquérito" *OR* "Pesquisas e Questionários" *OR* questionário *OR* questionários *OR* "Conhecimentos, Atitudes e Prática em Saúde" *OR* "Health Knowledge, Attitudes, Practice" *OR* "Conocimientos, Actitudes y Práctica en Salud" *OR* "Connaissances, attitudes et pratiques en santé" *OR* "Conhecimentos, Atitudes e Práticas em Saúde" *OR* "Avaliação Educacional" *OR* "Educational Measurement" *OR* "Evaluación Educacional" *OR* "Évaluation des acquis scolaires" *OR* "Avaliação da Educação" *OR* "Avaliação do Ensino" *OR* escala *OR* scale) AND ("Estudantes de Ciências da Saúde" *OR* "Students, Health Occupations" *OR* "Estudiantes del Área de la Salud" *OR* "Étudiants des professions de santé" *OR* "Estudantes de Enfermagem" *OR* "Students, Nursing" *OR* "Estudiantes de Enfermería" *OR* "Élève infirmier" *OR* "Alunos de Enfermagem" *OR* "Enfermeiras Estudantes" *OR* "Enfermeiros Estudantes" *OR* "Estudante de Enfermagem" *OR* "Estudantes de Medicina" *OR* "Students, Medical" *OR* "Estudiantes de Medicina" *OR* "Étudiant médecine" *OR* estudantes *OR* students *OR* estudiantes *OR* étudiants *OR* aluno *OR* alunos *OR* estudante or"Estudantes de Farmácia" *OR* "Students, Pharmacy" *OR* "Estudiantes de Farmacia" *OR* "Étudiant pharmacie" *OR* "Estudantes de Odontologia" *OR* "Students, Dental" *OR* "Estudiantes de Odontología" *OR* "Étudiant dentisterie" *OR* "Estudantes de Saúde Pública" *OR* "Students, Public Health" *OR* "Estudiantes de Salud Pública" *OR* "Étudiants en santé publique") AND (db:("IBECS" *OR* "LILACS" *OR* "BDENF" *OR* "CUMED" *OR* "BINACIS" *OR* "DESASTRES" *OR* "PAHOIRIS" *OR* "RHS" *OR* "SES-SP"))

MEDLINE via *PubMed*	("Patient Safety" *OR* "Safety Management") AND ("Surveys and Questionnaires" *OR* "Health Knowledge, Attitudes, Practice" *OR* "Educational Measurement" *OR* Scale) AND ("Students, Health Occupations" *OR* "Students, Nursing" *OR* "Students, Medical" *OR* Students *OR* "Students, Pharmacy" *OR* "Students, Dental" *OR* "Students, Public Health")
COCHRANE, CINAHL and Web of Science (Via the *CAPES Portal*)	("Patient Safety" *OR* "Safety Management") AND ("Surveys and Questionnaires" *OR* "Health Knowledge, Attitudes, Practice" *OR* "Educational Measurement" *OR* Scale) AND ("Students, Health Occupations" *OR* "Students, Nursing" *OR* "Students, Medical" *OR* Students *OR* "Students, Pharmacy" *OR* "Students, Dental" *OR* "Students, Public Health")
SCOPUS (Via the *CAPES Portal*)	("Patient Safety") AND ("Surveys and Questionnaires" *OR* "Health Knowledge, Attitudes, Practice" *OR* Scale) AND ("Students, Nursing" *OR* "Students, Medical" *OR* "Students, Pharmacy" *OR* "Students, Dental" *OR* "Students, Public Health")
EMBASE (Via the *CAPES Portal*)	('patient safety') and (questionnaire or 'attitude to health' or scale) and ('health student' or student)

Figure 1 - Search Strategy. Belo Horizonte, MG, Brazil, 2021

Source: Elaborated by the authors, 2021.

Development of the research strategy was carried out in three stages as recommended by the JBI[12]. The first stage was carried out by searching the information sources of the Virtual Health Library and MEDLINE, using the following descriptors: Patient Safety; Safety Management; Medical Students; Undergraduate Education in Medicine; Medical Education; Nursing Students; Nursing Education; Surveys and Questionnaires; Health Knowledge, Attitudes and Practice; Educational Assessment. On that occasion, the main indexing terms and the keywords used were identified. The second stage was carried out using these terms found in the following information sources: Virtual Health Library, MEDLINE, COCHRANE, CINAHL, SCOPUS, EMBASE and Web of Science. A third stage will be carried out by manually searching the reference lists of the studies included and of the studies excluded that have mentioned an instrument related to the concept proposed for this review.

The search for gray literature is also allowed for scoping review studies[12], and Google Scholar will be used for this purpose.

The authors of the original studies may be contacted via email in case there is a need to clarify any aspect of the study in question.

Studies published in English, Spanish or Portuguese will be considered, without time delimitation.

Study selection

After searching the databases, accessed via the *CAPES Journal Portal*, the results found will be uploaded to EndNote web (Clarivate Analytics, Pennsylvania, United States of America), where identification and exclusion of duplicates will be carried out. For selection and evaluation of the

studies in the sample, the *Rayyan* software[15] will be used, where an analysis of remaining duplicates and their exclusions will also be performed. Assessment of the references found will be conducted by two reviewers in a blind evaluation, so that one reviewer does not have access to the decision to include or exclude a particular reference defined by the other reviewer. The divergent cases will be evaluated by a third reviewer.

Thus, pre-selection of the studies will be carried out by reading titles and abstracts to verify compliance with the inclusion and exclusion criteria. Studies identified by Google Scholar and those surveyed by the reference lists will also be evaluated for relevance based on their titles and abstracts. The pre-selected studies will be fully read and evaluated in light of the inclusion criteria already defined. This process will be recorded in detail, enabling identification of all decisions taken. This record will be done in a narrative way and from completion of the PRISMA-ScR flowchart[13].

Data extraction

To extract data from the articles included, an instrument developed by the reviewers will be used (Figure 2), which was based on the model available in the JBI manual[12].

Identification of the study						
Journal/Impact Factor	Title	Author	Year	Country	Language	Objective
Characteristics of the instrument						
Name	Outcome analyzed	Number of dimensions		Number of items	Answer options	Modality of analysis (score/classification system)
Participants of the validity process						
Sample size and characteristics		Course/Period/Institution		Inclusion criteria	Exclusion criteria	
Instrument validity evidence						

Figure 2 – Data extraction instrument. Belo Horizonte, MG, Brazil, 2021
Source: Elaborated by the authors, 2021.

This form will be evaluated by the team of reviewers when starting the mapping process and, if there is a need to add information, it may undergo changes that must be recorded in the scoping review report.

Data extraction will be performed independently by two reviewers. At the end, the results found will be evaluated and the disagreements will be analyzed by a third reviewer.

Presentation of the results

The format for presenting the results will be conducted in such a way as to provide an overview of the instruments that assess knowledge and attitudes in patient safety

among undergraduate students in the health area. For this, a summary chart will be prepared containing the main results found

with a subsequent narrative discussion of the findings.

REFERENCES

1. World Health Organization (WHO). Global Patient Safety Action Plan 2021-2030: towards zero patient harm in health care [Internet]. Geneva: WHO; 2020 [cited 2021 Apr 04]. 96 p. Available from: https://www.who.int/teams/integrated-health-services/patient-safety/policy/global-patient-safety-action-plan

2. World Health Organization (WHO). Medication Without Harm - Global Patient Safety Challenge on Medication Safety [Internet]. Geneva: WHO; 2017 [cited 2021 Apr 04]. 16 p. Available from: https://www.who.int/patientsafety/medication-safety/medication-without-harm-brochure/en/

3. Organização Mundial de Saúde (OMS). Guia Curricular de Segurança do Paciente da Organização Mundial da Saúde: edição multiprofissional. Marra VN, Sette ML, coordinators. Rio de Janeiro: Autografia; 2016 [cited 2021 Apr 04]. 270 p. Available from: https://apps.who.int/iris/bitstream/handle/10665/44641/9788555268502-por.pdf;sequence=32

4. Ministério da Saúde (BR). Portaria nº 529, de 01 de abril de 2013. Institui o Programa Nacional de Segurança do Paciente (PNSP). Diário Oficial da União [Internet]. 2013 [cited 2021 Apr 04];62(Seção 1):43-44. Available from: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2013/prt0529_01_04_2013.html

5. Naser AY, Alsairafi ZK, Awaisu A, Alwafi H, Awwad O, Dahmash EZ et al. Attitudes of pharmacy students towards patient safety: a cross-sectional study from six developing countries. BMJ Open [Internet] 2020 Dec [cited 2021 Jun 23];10(12):e039459. Available from: https://pubmed.ncbi.nlm.nih.gov/33323431/. doi: https://doi.org/10.1136/bmjopen-2020-039459

6. Wegner W, Silva SC da, Kantorski KJC, Predebon CM, Sanches MO, Pedro ENR. Education for culture of patient safety: Implications to professional training. Esc Anna Nery [Internet]. 2016 [cited 2021 Apr 16];20(3):e20160068. Available from: https://www.scielo.br/j/ean/a/DjhJ6pBJ6JYjtKZZ6LHjByz/?lang=pt. doi: http://dx.doi.org/10.5935/1414-8145.20160068

7. Guedes J, Rossi E. Ensino Sobre Segurança Do Paciente Nos Cursos Da Área Da Saúde. Educere Educ [Internet]. 2020 [cited 2021 Apr 16];15(36). Available from: https://e-revista.unioeste.br/index.php/educereeducare/article/view/24391/16378%20doi. doi: https://doi.org/10.17648/educare.v15i36.24391

8. Bohomol E, Freitas MA de O, Cunha ICKO. Patient safety teaching in undergraduate health programs: reflections on knowledge and practice. Interface (Botucatu) [Internet]. 2016 Sep [cited 2021 Apr 17];20(58):727–41. Available from: https://www.scielo.br/j/icse/a/6xf34JfwJqhQTvwvbQvqdRv/?lang=pt. doi: https://doi.org/10.1590/1807-57622015.0699

9. Cauduro GMR, Magnago TSBS, Andolhe R, Lanes TC, Ongaro JD. Patient safety in the understanding of health care students. Rev Gaúcha Enferm [Internet]. 2017 [cited 2021 Apr 15];38(2):e64818. Available from: https://www.scielo.br/j/rgenf/a/Ztm3jVnYsH63rmkQYrHDnCh/?lang=pt. doi: https://doi.org/10.1590/1983-1447.2017.02.64818

10. Ambiel RAM, Carvalho LF. Validade e precisão de instrumentos de avaliação psicológica. In: Lins MRC, Borsa JC, organizators. Avaliação Psicológica:

aspectos teóricos e práticos. Petrópolis (RJ): Vozes; 2017. p. 115-136.

11. Ginsburg LR, Dhingra-Kumar N, Donaldson LJ. What stage are low-income and middle-income countries (LMICs) at with patient safety curriculum implementation and what are the barriers to implementation? A two-stage cross-sectional study. BMJ Open [Internet]. 2017 Jun [cited 2021 Jun 23];7(6):e016110. Available from: https://pubmed.ncbi.nlm.nih.gov/28619782/. doi: https://doi.org/10.1136/bmjopen-2017-016110

12. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil, H. Chapter 11: Scoping Reviews (2020 version). In: Aromataris E, Munn Z, editors. JBI Manual for Evidence Synthesis JBI [Internet]. [place unknown]: JBI; 2020 [cited 2021 Apr 14]. Available from: https://synthesismanual.jbi.global. doi: https://doi.org/10.46658/JBIMES-20-01

13. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med [Internet]. 2018 Sep 4 [cited 2021 Apr 15];169(7):467. Available from: https://pubmed.ncbi.nlm.nih.gov/30178033/. doi: https://doi.org/10.7326/m18-0850

14. Mokkink LB, Prinsen CAC, Patrick DL, Alonso J, Bouter LM, Vet HCW et al. COSMIN methodology for systematic reviews of Patient-Reported Outcome Measures (PROMs): user manual 2018. Amsterdam: University Medical Center, Department of Epidemiology and Biostatistics; Amsterdam Public Health Research Institute; 2018 [cited 2021 Apr 15]. Available from: https://cosmin.nl/wp-content/uploads/COSMIN-syst-review-for-PROMs-manual_version-1_feb-2018.pdf

15. Ouzzani M, Hammady H, Fedorowicz Z, Elmagarmid A. Rayyan—a web and mobile app for systematic reviews. Syst Rev [Internet]. 2016 Dec [cited 2021 Apr 14];5(1). Available from: https://pubmed.ncbi.nlm.nih.gov/27919275/. doi: https://doi.org/10.1186/s13643-016-0384-4

AUTHORSHIP CONTRIBUTIONS

Project design: Oliveira SLS, Amaral FMA, Mata LRFP

Data collection: Oliveira SLS, Amaral FMA, Mata LRFP
Data analysis and interpretation: Oliveira SLS, Amaral FMA, Mata LRFP

Writing and/or critical review of the intellectual content: Oliveira SLS, Amaral FMA, Azevedo C, Hoffmann MAH, Rodrigues TA, Ribeiro HCTC, Mata LRFP

Final approval of the version to be published: Oliveira SLS, Amaral FMA, Mata LRFP

Responsibility for the text in ensuring the accuracy and completeness of any part of the paper: Oliveira SLS, Amaral FMA, da Mata LRFP