

# Readiness for interprofessional learning among medical students: a scoping review protocol

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**Abstract.** *Background and aim:* Interprofessional education initiatives have been identified as promising strategies for providing high-quality, comprehensive, and effective health care. Interprofessional education can improve attitudes toward collaboration and teamwork during training, thereby improving attitudes toward interprofessional practice after graduation. Medicine and nursing are the fields most engaged in interprofessional education. Success in teaching and learning in this area depends on readiness for interprofessional education. Therefore, mapping this readiness among students may help higher education institutions establish or improve their respective approaches. The aim of this protocol is to map the literature to identify available evidence on the readiness for interprofessional learning among medical students. *Research question:* What data are available in the literature on readiness for interprofessional learning among medical students? *Source of evidence:* Literature search will be performed through the following databases: Scopus, Scientific Electronic Library Online (SciELO), PubMed, Biomed Central Journal, Wiley-Blackwell, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Education Resource Information Center (ERIC). *Methods:* This scoping review will be conducted in accordance with the Joanna Briggs Institute guidelines and the results, presented through a PRISMA flowchart. Review registration: Open Science Framework: <https://osf.io/7acnq/>. ([www.actabiomedica.it](http://www.actabiomedica.it))

**Key words:** learning, interprofessional education, students, medical, literature review protocol, scoping review

## Introduction

Interprofessional education (IPE) initiatives have been identified as promising strategies for providing high-quality, comprehensive, and effective health care (1). The growing interest in this topic may be partly attributed to the increased complexity of health care and to an improved understanding of determinants of the health-disease process. Interprofessional education has been the subject of discussions on health policymaking seeking to improve quality and access to

services from the perspective of comprehensive health care (2).

IEIs are rooted in transformative learning, where team members adjust their beliefs about their occupations and other health professions based on new IEIs (3). Regardless of the similarities in competency domains of interprofessional frameworks, such frameworks focus on different aspects of outcomes and processes at one of two levels: the individual or team level (4).

Dias Gontijo et al. (2020) asserted that a patient-centered interprofessional team is more effective than solo-working care providers. Reorganizing services in

the logic of interprofessionality requires implementing new areas and functions in existing organizational structures and developing shared care practices (5). In this sense, a new organizational model, emphasizing collaborative health care work, increases the likelihood of achieving the “quadruple aim” of comprehensive health care—optimizing the performance of the health system by improving population health (better health), enhancing patient experience of care (better care), reducing the per capita cost of health care (better value), and improving the work life of health care professionals (better work experience) (5).

IPE initiatives can improve attitudes toward collaboration and teamwork during training, thereby improving attitudes toward interprofessional practice after graduation. However, the complexity of simultaneously teaching different health disciplines, compounded by logistical problems and busy schedules, hinder IPEs. Furthermore, debate continues as to the best time to introduce IPE initiatives and the adoption of immersion (i.e., continuous collaborative interprofessional learning) or exposure (periodic collaborative activities) (6). Gilbert (2005) suggested exposure in the first years and immersion in the final year for two main reasons. On the one hand, students have time to develop their own professional identity before working collaboratively with others. On the other hand, students are immersed in IPE initiatives before focusing on profession-specific clinical practice and developing vocation-specific professional stereotypes or negative attitudes, which may discourage them from actively participating in such activities when postponing IPEs until later in the curriculum (6). The literature on medical students shows a tendency to introduce IPEs earlier, even in the first year (7,8), but the most effective time to introduce IPEs in the medical curriculum remains unknown (9).

Considering the above, interprofessional education is a promising alternative for training competent students in facing the new complexities of rapid global transitions (10,11). Accordingly, the impact of this approach should be assessed, particularly to ascertain whether IPE initiatives actually improve medical students’ educational experience by streamlining and enhancing traditional curricula rather than merely duplicating them (4). For this purpose, students’

perceptions must be understood in their different learning contexts (12).

Although health teams include other professions, medicine and nursing are the tracks most closely involved with IPE initiatives. Other professions are trained mainly in the uniprofessional teaching model (13). The success of interprofessional education as a teaching and learning process depends on readiness for IPEs. Therefore, mapping students’ readiness may help higher education institutions establish or improve their IPE initiatives. As such, the present protocol aimed at mapping the literature to identify available evidence on readiness for interprofessional learning among medical students.

### *Study design*

This study will adopt a scoping review (14–17) design to map the literature and to summarize the evidence in this specific area of interest (16).

### *Research question*

The following research question will be developed by applying the Population, Concept, Context (PCC) framework (16,18,19): What data are available in the literature on the readiness for interprofessional learning (Concept) among medical students (Population) exposed to interprofessional education during medical school (Context). Table 1 shows the PCC.

### *Inclusion and exclusion criteria*

We will include any article published from 2017 to 2022 on interprofessional learning readiness among medical students at any stage of their degree. This scoping review will analyze peer-reviewed articles with any research design, including gray literature with a clearly

**Table 1.** PCC question.

Population	Medical students
Concept	Readiness for interprofessional learning
Context	Interprofessional education during medical school

**Table 2.** Included and excluded works of the scoping review.

Included Literature	Excluded Literature
<ul style="list-style-type: none"> <li>Quantitative research studies</li> <li>Qualitative research studies</li> <li>Mixed-methods studies</li> <li>Experimental and quasi-experimental studies</li> <li>Randomized controlled trials</li> <li>Non-randomized controlled trials</li> <li>Before-and-after studies</li> <li>Interrupted time series</li> <li>Systematic reviews</li> <li>Meta-analyses and/or meta-syntheses</li> <li>Books and guidelines, published in indexed sources</li> </ul>	<ul style="list-style-type: none"> <li>Narrative reviews</li> <li>Editorials</li> <li>Expert opinions</li> <li>Advertisements published in media</li> </ul>

identified study method, to minimize publication bias, guidelines from scientific societies, and conference proceedings, so long as the study design was recognizable. Narrative reviews, expert opinions, and editorials will be excluded from this scoping review (Table 2).

## Method

This scoping review will be conducted in accordance with JBI methodology (16,18). All results are presented according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for scoping reviews (PRISMA-ScR) (19).

### Search strategy

To identify relevant studies, will be consulted the following scientific databases: Scopus, Scientific Electronic Library Online (SciELO), PubMed, Biomed Central Journal, Wiley-Blackwell, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Education Resource Information Center (ERIC). For each strategy item, will be used descriptors and/or their synonyms according to Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH). These databases will be selected for their comprehensiveness and broad coverage of publications in health sciences.

**Table 3.** The search strategy developed and strategy in PubMed.

<p> <b>“Aprendizagem” OR “Aprendizado” OR “Aprendizado Contextualizado” OR “Aprendizagem Contextualizada” OR “Educação Contextualizada” OR “Fenomenografia” OR “Treinamento da Memória” OR “Treinamento de Memória” OR “Learning” OR “Phenomenography” OR “Memory Training” OR “Training, Memory”; “Educação Interprofissional” OR “Cross-Training” OR “Treinamento Cruzado” OR “Interprofessional Education” OR “Education, Interprofessional” OR “Education, Professional”; “Estudantes de Medicina” OR “Students, Medical” OR “Medical Students” OR “Student, Medical” OR “Medical Student”; “Comunicação Interdisciplinar” OR “Comunicação Transdisciplinar” OR “Pesquisa em Comunicação” OR “Interdisciplinary Communication” OR “Communication, Interdisciplinary” OR “Communications, Interdisciplinary” OR “Interdisciplinary Communications” OR “Multidisciplinary Communication” OR “Communication, Multidisciplinary” OR “Communications, Multidisciplinary” OR “Multidisciplinary Communications” OR “Cross-Disciplinary Communication” OR “Communication, Cross-Disciplinary” OR “Communications, Cross-Disciplinary” OR “Cross Disciplinary Communication” OR “Cross-Disciplinary Communications” OR “Communication Research”; “Educação Médica” OR “Education, Medical” OR “Education, Medical Continuing” OR “Education Medical, Graduate” OR “Internship and Residency” OR “Medical, Undergraduate Education,” OR “Teaching Roundss</b> </p>
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Together with the co-authors, a librarian specialized in digital search strategies will developed and tested the search strategy in PubMed. The search strategy will be presented in Table 3. Once suitable articles were identified and duplicates removed, we will analyze the literature, redefining the search strategy when appropriate (15,16). The records will be loaded to Rayyan app (20) for duplicate removal and double-blind screening. Other articles will be retrieved from the gray literature and through bibliographic research in printed copies of journals (14,16).

We will use documents published in English and Portuguese, but not in Spanish.

### Study selection

Study selection will involve the following steps:

Step 1: Through double-blind analysis, we will evaluate the title and abstract of each retrieved

article to determine its relevance to the research question and adherence with the inclusion or exclusion criteria. When in doubt, we will evaluate the full text before reaching a final decision (20).

Step 2: We will assess all articles that remained in the sample after Step 1 for relevance and compliance with the inclusion criteria through a thorough evaluation of the full text.

Step 3: We will present the results according to PRISMA-ScR methodology (19).

The research team discuss the data selection results, reached a consensus, and prepared a data extraction table. Of the 2101 articles, 1598 were excluded because they were duplicates. The titles and abstracts of the remaining 503 articles were independently analyzed by two of the researchers (TB and JD) to select those relevant to the eligibility criteria. Articles that failed to mention their eligibility criteria were excluded from this scoping review. In case of disagreement, a third researcher (LS) was consulted, who provided the final opinion on the relevance of the study to the research question. Additional sources that met the eligibility criteria, were important for this study, and had not been identified in the search strategy were included in this scoping review after manual search by these researchers LL and AR.

To calibrate the eligibility criteria among researchers, we (TB, JD, and LS) randomly analyzed the title and abstract of 25 articles. All articles included in this scoping review reached at least 75% agreement with respect to the inclusion and exclusion criteria. Disagreements regarding the inclusion or exclusion of these articles were discussed until reaching a consensus.

#### *Data extraction*

From the eligible studies, reviewers (TB, JD, and LS) will extract relevant data, following an extraction table prepared by the researchers: (i) name of the lead author, year of publication; (ii) study design; (iii) tool; (iv) target audience; (v) tool components; and (vi) evaluation of the psychometric properties (if the

study assessed psychometric parameters—validity and reliability—and evaluation methods) of the tool.

#### *Data analysis*

The results will be organized and plotted by theme. The final decision on the graphical representation of the results will be made after completing the review.

**Ethic Committee:** Institution name and protocol number and year

**Conflict of Interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

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