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REVIEW PROTOCOL

Education Technologies for Mental Health in Healthcare: Scoping Review Protocol

Tecnologias educacionais sobre saúde mental na área da saúde: Protocolo de scoping review

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ABSTRACT

Objective: To identify and map educational technologies related to mental health in healthcare. **Method:** A scoping review will follow the Joanna Briggs Institute guidelines to answer the question: "What educational technologies related to mental health have been used in healthcare?". Multidisciplinary electronic databases in the health sciences and dissertation or thesis repositories will be used. The review aims to identify and map available evidence regarding educational technologies, their impact, and challenges in the field. This information is essential to improve teaching quality in continuing education, health education, or academic training. The scoping review is anticipated to contribute to a critical analysis of educational technologies focused on mental health in the health sector, given their potential impact on the development of educational competencies.
Descriptors: Mental Health; Educational Technology; Teaching Materials.

RESUMO

Objetivo: Identificar e mapear as tecnologias educacionais sobre saúde mental utilizadas no ensino da saúde. **Método:** Será conduzida uma *scoping review*, seguindo o referencial do Joanna Briggs Institute, com o objetivo de responder à questão: "Quais são as tecnologias educacionais sobre saúde mental que têm sido utilizadas na área da saúde?". Para a identificação dos estudos, serão utilizadas bases de dados eletrônicas multidisciplinares em ciências da saúde, bem como repositórios de dissertações e teses. A identificação e o mapeamento da evidência disponível por meio deste estudo revelarão aspectos relevantes acerca das tecnologias educacionais existentes, seus impactos e desafios neste campo, o que é considerado relevante para subsidiar a melhoria da qualidade do ensino, seja na educação permanente, educação em saúde ou formação acadêmica. Espera-se que a *scoping review* contribua para a análise crítica das tecnologias educacionais sobre saúde mental na área da saúde, dada a potencialidade de impacto no desenvolvimento das competências educacionais.
Descritores: Saúde Mental; Tecnologia Educacional; Materiais de Ensino.

INTRODUCTION

The mental health field encompasses diverse aspects related to individuals' mental states and the social context in which they are embedded. Beyond the absence of diseases or symptoms, it also promotes quality of life and has gained visibility in recent years[1].

On the one hand, national and international movements have broadened the concept of mental health by questioning the hegemony of psychiatric clinics and emphasizing care from a multidisciplinary and community-based perspective[2]. On the other hand, changes in family configurations and socio-political relations have increased psychological distress and demands for mental health care, which have become recurrent in a society characterized by "performance and exhaustion"[3].

According to the World Health Organization (WHO), approximately 40% of the global population will experience some form of mental disorder during their lifetime. Even in the absence of psychotic symptoms, minor mental disorders such as anxiety and/or depression, irritability, and sleep disturbances hurt the

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well-being of this population, with implications for public health[4-6].

Additionally, the scenario caused by the COVID-19 pandemic, marked by physical distancing, abrupt changes in social relationships, daily grief, fear of illness, and transmitting the disease to vulnerable friends and/or family, further exacerbates mental health issues[7,8]. These factors, along with economic instability, scarcity of basic supplies for life maintenance, and an infodemic of fake news, among others, amplify the onset or worsening of mental health problems.

In this context, developing competencies for mental health self-care becomes imperative, aiming to address the uniqueness of human suffering by constructing a Singular Therapeutic Project under the perspective of an expanded clinical approach[9]. However, there is a notable deficiency in the spaces for education on mental health, whether in health education (targeted at users and patients), continuous education (for healthcare professionals), or academic training[10].

Therefore, the potential of Educational Technologies (ET) for constructing and disseminating knowledge about mental health in various contexts is highlighted. ET refers to sociotechnical practices that mediate the teaching-learning process, making it dynamic and cooperative, and can assist in educational processes across different learning environments[11].

Nevertheless, it is important to note the scarcity of scoping review studies focused on using educational technologies in mental health in the health field. For this reason, it is believed that this review will fill this gap and contribute to educational practices in mental health, consequently impacting the improvement of mental health care and the quality of life for healthcare professionals. Thus, this study aims to identify and map the educational technologies related to mental health used in health education.

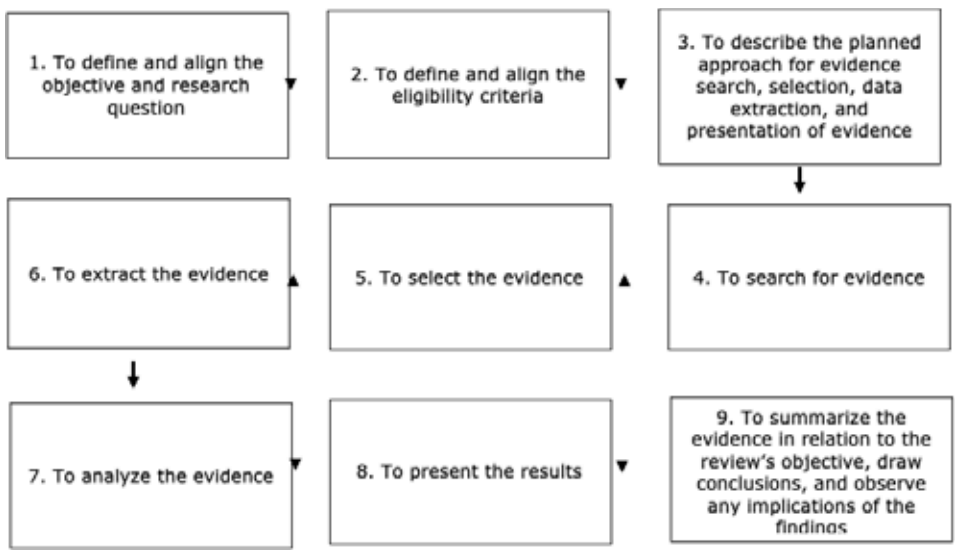
METHOD

This scoping review will be conducted in accordance with the guidelines of the Joanna Briggs Institute (JBI) and will follow the theoretical framework proposed by Peters et al.[12] (Figure 1). The protocol of this review has been registered on the Open Science Framework (OSF) (accessible at https://doi.org/10.17605/OSF.IO/T863P) to ensure transparency and pioneering of this review.

Search strategy and identification of studies

The eligibility criteria were defined according to the methodology proposed by JBI, based on the acronym PCC (P, population; C, concept; C, context) (Figure 2). Thus, the guiding question of the review is: "What mental health educational technologies have been used in healthcare?".

Therefore, the population will include studies that focus on the area of mental health. In terms of concept, studies describing educational technologies (ETs) will be highlighted. Studies conducted within the context of health education, including



Source: Adapted from Peters et al., 2020

Figure 1 - Stages to be followed in the scoping review. Natal, RN, Brazil, 2023

Acronym PCC	Element	Reference concept
P (population)	Mental health	A polysemous, plural health field, which concerns the mental state of individuals and communities, going beyond the absence of diseases or symptoms, encompassing production and quality of life [1].
C (concept)	Educational Technologies	Both digital and non-digital educational materials were developed based on a sound theoretical and methodological framework aimed at facilitating the teaching-learning process creatively and proactively [13].
C (context)	Healthcare field	It includes courses from the health sciences, such as nursing, pharmacy, physical therapy, speech therapy, medicine, nutrition, dentistry, public health, and occupational therapy, as well as courses at the interface of the human sciences, health-psychology, and hospital management [14,15].

Figure 2 - Definition of the acronym PCC reference concepts for the scoping review. Natal, RN, Brazil, 2023

health education, continuing education, and academic education, will be included.

Preliminary searches were conducted for similar scoping reviews in the Open Science Framework (OSF), Joanna Briggs Institute CONNECT+, The Cochrane Library, and International Prospective Register of Systematic Reviews (PROSPERO) databases, but no protocols or reviews with similar topics were identified. Only one integrative review was found, which aimed to identify mental health educational technologies developed for and used by healthcare professionals[16], representing a limited sample related to continuing education.

PubMed and the *Biblioteca Virtual de Saúde* (BVS) were searched to identify keywords used in published studies on the research topic. This search was carried out using the *Descritores em Ciências da Saúde* (DeCS) and Medical Subject Headings (MeSH), which formed a reference search strategy that will be adapted to each database/repository included in this review, considering the specific research requirements of each database.

The Extraction, Conversion, Combination, Construction, and Use model was used to construct the reference search strategy for this review. This framework was used to refine the search strategy to ensure high sensitivity for the review[17]. Figure 3 shows a synthesis of the search stages for controlled descriptors from MeSH and DeCS, as well as the search for synonyms in two major databases (PubMed and BVS), culminating in the definition of the final strategy that will be adapted to the search engines of each database included in the data collection for this review. Exclusion criteria based on language and time limitations will be established during this process.

The following databases will be searched in this review: MEDLINE/PubMed, LILACS/BVS, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Google Scholar, Web of Science (WOS), Education Resources Information Center (ERIC), American Psychological Association (PsycInfo APA), EMBASE. For gray literature searches, the following databases will be used: *Catálogo de Teses e Dissertações da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES), DART-Europe E-Theses Portal, Electronic Theses Online Service (EThOS), *Repositório Científico de Acesso Aberto de Portugal* (RCAAP), National ETD Portal, Theses Canada, *Portal de Tesis Latinoamericanas*, and World Cat Dissertations and Theses. The reference lists of each study included in the final sample are analyzed to allow the addition of potential studies.

Figure 4 shows the results of the initial search and application of filters in the literature databases reviewed.

Study selection

After collection, all studies will be identified, grouped, and entered into the Rayyan software to manage the collection, study selection, and duplicate removal. The analysis of titles and abstracts will be performed paired according to the pre-defined inclusion and exclusion criteria. In case of conflicts during this phase, a consensus will seek an initial solution and, if necessary, a third reviewer will be responsible for the final decision. The full-text reading will follow the same methodological procedure.

Articles (research and experience reports), dissertations, and theses that address the three levels of education (continuing education, health education, and academic training) within the

Acronym	MeSH terms	Keywords	Search strategy
P (Population)	Mental Health	-	[("Mental Health") AND ("Educational Technology" OR Technology OR "Teaching materials")]
C (Concept)	Educational Technology	Technology / Teaching materials	
C (Context)*	-	-	
Acronym	DeCS terms	Keywords	Search strategy
P (Population)	Mental Health	-	[("Saúde Mental") AND ("Tecnologia Educacional" OR Tecnologia OR "Materiais de Ensino" OR "Recurso Educacional")]
C (Concept)	Educational Technology	Technology / Teaching Materials / Educational Resource	
C (Context)*	-	-	

Figure 3 - Search strategy constructed based on exploratory research. Natal, RN, Brazil, 2023.
*Note: The context "Health Area" will be used as a filter in the database search.

Databases	Search strategy	Initial N	Filters applied	N after Filters
MEDLINE/ PubMed	("Mental Health"[MeSH Terms]) AND ("Educational Technology"[Title/Abstract] OR Technology[Title/ Abstract] OR "Teaching materials"[Title/Abstract])	875	Full-text articles	835
LILACS/BVS	("Saúde Mental") AND ("Tecnologia Educacional" OR Tecnologia OR "Materiais de Ensino" OR "Recurso Educacional")	56	Type of study (excluding reviews)	35
CINAHL	MH "mental health" AND AB ("Educational Technology" OR Tecnologia OR "Materiais de Ensino" OR "Recurso Educacional")	704	Full-text articles	298
Web of Science (WOS)	"Mental Health" (Palavras-chave de autor) AND "Education Technology" OR Technology OR "Teaching material" (Resumo)	1868	Full Text, Type of Document, and Area	834
Education Resources Information Center (ERIC)	title:"Mental Health" title:"Educational Technology"	516	Type of document (articles)	265
EMBASE	mental health':kw AND ('educational technology':ab OR technology:ab OR 'teaching materials':ab)	912	Type of document (articles)	618

Figure 4 - Search results in the literature databases reviewed. Natal, RN, Brazil, 2023

scope of health education will be considered[18]. Reflection papers, editorials, reviews, and research not related to health were excluded. The standardized reasons for exclusion are shown in Figure 5.

Data extraction

The data will be extracted by two independent reviewers using an extraction tool developed by the researchers and aligned with this review's objective and guiding question. The information collected will be entered into a spreadsheet created in Microsoft Excel 2016, which will include the following data: type of publication, year of publication, country of origin of the study, qualification of the author, objective of the study, methodological design, type of educational technology used, topic of the technology, target audience, level of education, purpose of the technology, validation of the technology, impact of the use of the technology, and challenges to the use of the technology (Figure 6).

The authors may re-evaluate the extraction tool during the research phases to adapt it to the objective of the review. To standardize the research steps, including title and abstract screening and full-text reading, a pilot study will be conducted at each stage, with five studies analyzed together.

Reason	To include	To exclude
Inadequate study type.	Articles (research and experience reports), dissertations, and theses.	Editorials, reflection papers, and reviews (integrative review, scoping review, systematic review, and meta-analysis).
Inadequate population.	Studies about the teaching of mental health involve continuing education (for professionals), health education (for patients), and academic training (for students).	Studies that address teaching in a different field other than mental health.
Inadequate concept.	Studies about educational technologies (support materials for online or offline teaching).	Studies about care or management technologies.
Inadequate context.	Studies in the health field.	
	Studies about technologies as the cause of mental health problems.	

Figure 5 - Standardized Reasons for Exclusion. Natal, RN, Brazil, 2023

Variable	Standardization
Type of publication	If article, dissertation, or thesis
Year	Year in which the study was published
Country	Country in which the study was conducted
Author's Education	Degree of lead author
Objective	Describe the main objective of the study
Methodological design	Type of research carried out by the study authors
Type of Educational Technology	Detail which technology was used
The theme of the Technology	Detail the topic of the technology used
Target Audience	Describe which audience the technology is intended for
Educational Level	Whether continuing education, health education, or academic training
Purpose of the Technology	Describe the purpose of the technology (for example, use in a course, incorporation into a curriculum, use in a campaign...)
Validation of the Technology	Describe whether the technology has been validated (if so, what type of validation)
Impacts of Technology Use	Describe the impacts of using the technology
Challenges to Technology Use	Describe the challenges to the use of the technology

Figure 6 - Data extraction form. Natal, RN, Brazil, 2023

Summary and presentation of data

The extracted data will be synthesized and presented descriptively in tables per this review's objective and guiding question. This process will be conducted by consensus between the two reviewers, and any disagreements will be resolved by consultation with a third reviewer.

The results will be fully described in a narrative form, following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR)[19].

CONFLICT OF INTERESTS

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

REFERENCES

1. Dantas ESO. Saúde mental dos profissionais de saúde no Brasil no contexto da pandemia por Covid-19. Interface - Comunic, Saúde, Educ. 2021;23 Suppl 1. https://doi.org/10.1590/Interface.200203

2. Marques IP, Ferigato SH, Minelli M, Marcolino TQ. Da produção local à cooperação internacional em saúde mental: construção de redes de cuidado e aprendizagem entre Brasil e Itália. Interface - Comunic, Saúde,

Educ. 2020;24:e200241. https://10.0.45.86/S1518-787.201805200XXXX

3. Vieira CEC. Sociedade do cansaço: reflexo da sociedade capitalista de razão neoliberal. Cadernos De Psicologia Social Do Trabalho. 2022; 25:e-194197. https://doi.org/10.11606/issn.1981-0490.cpst.2022.194197.

4. Santos FF, Brito MFSF, Pinho L, Cunha FO, Rodrigues-Neto JFR, Fonseca ADG, et al. Transtornos mentais comuns em técnicos de Enfermagem de um hospital universitário. Rev. Bras. Enferm. 2020;73(1):e20180513. http://dx.doi.org/10.1590/0034-7167-2018-0513

5. Veloso LUP, Lima CLS, Sales JCS, Monteiro CFS, Gonçalves AMS, Silva-Júnior FJG. Ideação suicida em universitários da área da saúde: prevalência e fatores associados. Rev. Gaúcha Enferm. 2019;40:e20180144. https://doi.org/10.1590/1983-1447.2019.20180144

6. Gomes CFM, Pereira-Júnior RJ, Cardoso JV, Silva DA. Transtornos mentais comuns em estudantes universitários: abordagem epidemiológica sobre vulnerabilidades. SMAD, Rev. Eletrônica Saúde Mental Álcool Drog. 2020;16(1). http://dx.doi.org/10.11606/issn.1806-6976.smad.2020.157317

7. Ornell F, Schuch JB, Sordi AO, Kessler FHP. "Pandemic fear" and COVID-19: mental health burden and strategies. Braz. J. Psychiatry. 2020;42(3). https://doi.org/10.1590/1516-4446-2020-0008

8. Machado CO, Fonseca JF, Salvador PTCO, Dantas ESO, Oliveira LV. Impactos da Covid-19 na saúde mental da equipe de enfermagem de Unidades de Terapia Intensiva: uma revisão de escopo. Revista Eletronic Acervo Saúde. 2022;15(11). https://doi.org/10.25248/REAS.e11188.2022

9. Brito GEG, Forte FDS, Freire JCG, Moreira LB, Paredes SO, Silva SLA. Articulação entre a EqSF/AB e o NASF/AB e sua influência na produção do cuidado no contexto da Atenção Primária à Saúde. Ciência Saúde Colet. 2022;27(6). https://doi.org/10.1590/1413-81232022276.03942021

10. Lima AMJ, Andrade ELG, Perillo RD, Santos AF. Olhares sobre a assistência em Saúde Mental na Atenção Primária à Saúde em municípios de pequeno porte: emergência de práticas inovadoras. Interface - Comunicação, Saúde, Educação. 2021; 25:e200678. https://doi.org/10.1590/interface.200678

11. Santos AMD, Resende EB, Rodrigues CCFM, Alves KYA, Oliveira LV, Salvador PTCO. Validation of educational technologies in health care: scoping review protocol. Research, Society and Development. 2021;10(17):e75101724342. http://dx.doi.org/10.33448/rsd-v10i17.24342

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 [Internet]. Adelaide: JBI; 2020 [cited 2022 Jan 23]. Available from: https://synthesismanual.jbi.global

13. Santos AMD, Lopes RH, Alves KYA, Oliveira LV, Salvador PTCO. Análise do Conceito "Tecnologia Educacional" na Área da Saúde. EaD Em Foco. 2022;12(2): e1675. https://doi.org/10.18264/eadf.v12i2.1675

14. Centro Latino-Americano e do Caribe de Informação em Ciências da Saúde. Descritores em Ciências da Saúde [Internet]. São Paulo (SP): BIREME/OPAS/OMS; 2023 [citado 2023 Jan 20]. Available from: http://decs.bvsalud.org

15. Pimenta MM, Oliveira RC. A Contribuição da Sociologia para o Ensino em Saúde. Revista Linhas. 2020;21(45),260-84. http://dx.doi.org/10.5965/1984723821452020260

16. Feitosa CDA, Mendes PN, Oliveira AC, Fernandes MA, Pillon SC. Tecnologias educacionais em saúde mental para trabalhadores: revisão integrativa. Acta Paul Enferm. 2022;35:eAPE02766. https://doi.org/10.37689/acta-ape/2022AR027666

17. Araújo WCO. Health Information Retrie-val: Construction, Models and Strategies. ConCI Conv Cienc Inf. 2020;3:100-34. https://10.33467/conci.v3i2.13447

18. Sampaio GB, Gomes RM, Silva MCQS, Jesus IS, Duarte ACS, Santos K. Educação Permanente e o Processo Formativo dos Profissionais da Saúde: Entrelace de Saberes. Revista Eletrônica Acervo Saúde. 2019;25:e630. https://doi.org/10.25248/reas.e630.2019

19. Tricco AC, Lillie E, Zarin W, Brien KKO, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med. 2018;169(7):467-73. https://doi.org/10.7326/M18-0850

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Data collection: Oliveira LV, Salvador PTCO
Data analysis and interpretation: Santos AMD, Santos ACM, Silva RDV, Silva CRDV, Oliveira LV, Salvador PTCO
Writing and/or critical review of the intellectual content: Santos AMD, Santos ACM, Silva RDV, Silva CRDV, Oliveira LV, Salvador PTCO
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