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REVIEW PROTOCOL

Educational games for health literacy improvement in people with diabetes: a protocol for scoping review

Jogos educativos para melhorar letramento em saúde de pessoas com diabetes: protocolo de *scoping review*

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ABSTRACT

Objective: To map educational games that help improve health literacy in people with type 2 diabetes mellitus (DM) to enhance self-care. **Method:** This protocol is guided by the Joanna Briggs Institute (JBI), with the research question formulated using PCC: Population (people with type 2 DM); Concept (educational games for health literacy improvement); and Context (empowerment for self-care), generating: "What educational games can be used to improve health literacy and empower people with type 2 diabetes mellitus for self-care?". Search will be conducted in PubMed, Scopus, LILACS, Information, Science & Technology, Google Scholar, the CAPES Thesis and Dissertation Catalogue, and Open Access Scientific Repositories from Portugal. The articles will be selected in two stages, with two researchers and another reviewer to resolve conflicts using Rayyan software. Data extraction will be done using a form adapted from the JBI. The analysis will be descriptive, and the results will be presented in flowcharts, graphs, and/or tables.

Descriptors: Diabetes Mellitus; Health Literacy; Play and Playthings; Self Care.

RESUMO

Objetivo: Analisar os fatores que influenciam a adesão dos enfermeiros às precauções padrão. **Método:** Utilizou-se a metodologia do Instituto Joanna Briggs (JBI). **Resultados:** Foram analisados 12 estudos que identificaram os seguintes fatores que afetam a adesão dos enfermeiros às precauções básicas de controle de infecção: formação/treino insuficiente; indisponibilidade de materiais; falta de apoio/incentivo por parte da gestão; experiência profissional; falta de formação/educação/conscientização. **Conclusão:** Há uma necessidade evidente de criar procedimentos e recomendações por escrito e compartilhar essas informações com os profissionais de saúde. Isso ajudará na conscientização e na adoção de boas práticas, contribuindo para a redução do risco de infecção e aumentando a segurança do paciente.

Descritores: Conhecimento; Controle de Infecções; Enfermagem.

INTRODUCTION

Health literacy (HL) is a set of competencies necessary to obtain, process, and apply health information. HL is a powerful health tool that should be seen as a result of education and health promotion activities. It is responsible for bringing personal and social benefits and providing an opportunity to improve quality of life[1].

Good levels of health literacy empower individuals and contribute to developing autonomy over their health status, thereby promoting self-care. In addition, health literacy enables people to become aware of their rights to advocate for changes that meet their real needs within health policies and systems[2].

Diabetes mellitus (DM) is an endocrine-metabolic disorder characterized by elevated blood glucose levels due to impaired insulin secretion or function. Caring for DM is a challenge for both patients and health

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care workers, as it requires a number of specific daily care practices, such as physical activity, a balanced and healthy diet, and medication treatment[3].

Therefore, health literacy is considered an important tool since it helps understand the disease and the importance of treatment and contributes to better adherence, thereby reducing the risk of complications and improving the quality of life of people with diabetes[4].

Literature reviews highlight the important role of educational technologies in achieving a desirable level of health literacy for people living with diabetes mellitus. These technologies can work by using methods that support this educational process through the use of games, primarily digital but also physical, besides other media[5-6].

Thus, mapping educational games to increase the health literacy levels of people with type 2 diabetes mellitus is essential to improve self-care for this population. Therefore, the development of this research is justified, as low levels of health literacy in this population can lead to deficits in self-care and worsening of this health condition[7-8]. A preliminary search of the Open Science Framework (OSF), Database of Abstracts of Reviews of Effects (DARE), and The Cochrane Library platforms was conducted, and no similar scoping reviews were identified.

Therefore, the relevance of a scoping review study on this topic is shown. The study aims to map educational games that help improve health literacy in people living with type 2 DM and improve self-care.

METHOD

This scoping review protocol is based on the structure established by the Joanna Briggs Institute (JBI). A scoping review involves the researcher conducting a comprehensive mapping of the literature to exhaust the content around a research topic and consists of five stages: (1) identifying the research question; (2) identifying important studies; (3) examining the studies; (4) appraising the data; (5) synthesizing and presenting the findings[9]. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-ScR) checklist guided the review's writing[10].

This review model is the best option compared to others because it offers the opportunity to comprehensively map the literature in the search for already validated educational games for people with type 2 DM. The intention is to improve health literacy and, hence, the quality of life of these people. This protocol was registered on the Open Science Framework (OSF) (DOI: https://doi.org/10.17605/OSF.IO/K4V98).

Review question

The mnemonic PCC was used to construct the review question, objective, and descriptors. Herein, P (population) refers to people with type 2 DM; C (concept) refers to educational games to promote health literacy; and C (context) relates to empowerment for self-care. The following guiding question was formulated: "What educational games can be used to improve health literacy and empower people with type 2 DM for self-care?".

Inclusion criteria

Participants

This review will include studies that address educational games as a way to improve health literacy in people with type 2 DM, regardless of gender, ethnicity, age, or sociodemographic and sociocultural profiles.

Concept

The evaluated concept is educational games designed to support the health literacy of people with type 2 diabetes mellitus. Health literacy is defined as an individual's ability to access, understand, evaluate, and use information and services to make informed decisions about their health[11].

Educational games establish a relationship between play and education, aiming to reconcile playful activities with pedagogical objectives in different ways[12].

There are two kinds of educational games. One is called informal educational games, which are not designed for a formal educational purpose but are playful. The other type, formalized educational games, are directly related to academic goals. In addition, these games have a high degree of novelty and aim to develop cognitive skills on specific content. They are carefully planned to stimulate the capacity for deliberate self-reflection, leading the target audience to change their behavior without losing the fun aspect, as they are also playful[13].

Context

The context of this research will be empowerment for self-care. Self-care is one of the most important strategies to be encouraged and im-

plemented by health care workers for individuals living with diabetes. This is because it allows them to improve their dietary habits, adopt physical exercise routines, properly monitor blood glucose levels, and take prescribed medications correctly[14].

Source types

Virtual literature sources will be consulted: databases, virtual libraries and repositories. All types of studies will be included in Portuguese, Spanish, and English, whether quantitative, qualitative, or mixed, as these are the most widely used languages in the existing literature.

Both original studies and literature reviews, narratives, and other products of the grey literature will be considered.

Exclusion criteria

Opinion articles, duplicate studies, and/or studies that do not address the topic or answer the research question will be excluded. In addition, only fully available studies that reflect the perspective of educational games to improve health literacy in people with type 2 DM will be included.

Search strategy

The process is divided into two parts, as recommended by the JBI[9]. First, descriptors were selected from other published research available on two data platforms: Scopus (Elsevier) and the National Library of Medicine (PubMed). To facilitate this process, Health Sciences Descriptors (DECS) and/or Medical Subject Headings (MeSH) terms were used and crossed using the Boolean operators "AND" and "OR". After the initial search, descriptors were defined for the subsequent search for studies that would form the sample for the scoping review.

In this way, the results will be searched in databases related to health sciences and technological sciences, namely PubMed, Scopus, and LILACS in the health field and the Library, Information, Science & Technology (EBSCO) in the technology field, besides Google Scholar as a source of different fields of knowledge, including grey literature sources. In addition, the CAPES catalog (Catalog of Theses and Dissertations of the Journal of the Coordination for the Improvement of Higher Education Personnel) and the RCAAP (Open Access Scientific Repositories of Portugal) will also be used. Search strategies used in the two parts of this step are described in Figure 1.

Figure 1 - Presentation of the terms corresponding to the PCC and search strategy. João Pessoa, pb, Brazil, 2023

1ST STAGE		
Mnemonic	**DECS**	**MeSH**
P - People with type 2 DM	Diabetes Mellitus Adulto Idoso	*Diabetes Mellitus* *Adult* *Aged*
C - Educational games to help improve HL	Letramento em Saúde Jogos	*Health Literacy* *Plays*
C – Empowerment for self-care	Autocuidado Autogestão	*Self Care* *Self-Management*
Initial Search Strategy		
"Diabetes Mellitus" AND Adult OR Aged AND "Health Literacy" AND Play AND "Self Care" OR "Self-Management"		
"Diabetes Mellitus" AND Adulto OR Idoso AND "Letramento em Saúde" AND Jogos AND Autocuidado OR Autogestão		
2ND STAGE		
Mnemonic	**DECS**	**MeSH**
P - People with type 2 DM	Diabetes Mellitus; Diabetes Mellitus Tipo 2; Adulto; Idoso;	*Diabetes Mellitus; Diabetes Mellitus, Type 2; Adult; Aged; Aged, 80 and over; Middle Aged*
C - Educational games to help improve HL	Letramento em Saúde; Conhecimentos, Atitudes e Prática em Saúde; Alfabetização; Conhecimento; Jogos; Jogos e Brinquedos; Jogos Experimentais	*Health Literacy; Health Knowledge, Attitudes, Practice; Literacy; Knowledge;* *Play; Play and Playthings; Experimental Games*
C - Empowerment for self-care	Autocuidado Autogestão	*Self Care* *Self-Management*
Final Search Strategy		
PubMed	*((((((((((("Diabetes Mellitus") undefined ("Diabetes Mellitus, Type 2")) undefined (Adult)) OR (Aged)) OR ("Aged, 80 and over")) OR ("Middle Aged")) AND ("Health Literacy")) OR ("Health Knowledge, Attitudes, Practice")) OR (Literacy)) AND (Play)) OR ("Play and Playthings")) OR ("Experimental Games")) AND ("Self Care")) OR ("Self-management")*	
LILACS (Portuguese)	("Diabetes Mellitus") OR ("Diabetes Mellitus Tipo 2") AND (Adulto) OR (Idoso) OR ("Idoso de 80 Anos ou mais") OR ("Pessoa de Meia-Idade") AND ("Letramento em Saúde") OR ("Conhecimentos, Atitudes e Prática em Saúde") OR (Alfabetização) AND (Jogos) OR ("Jogos e Brinquedos") OR ("Jogos Experimentais") AND (Autocuidado) OR (Autogestão)	
LILACS (English)	*("Diabetes Mellitus") OR ("Diabetes Mellitus, Type 2") AND (Adult) OR (Aged) OR ("Aged, 80 and over") OR ("Middle Aged") AND ("Health Literacy") OR ("Health, Knowledge, Attitudes, Practice") OR (Literacy) AND (Play) OR ("Play and Playthings") OR ("Experimental Games") AND ("Self Care") OR ("Self-Management")*	
Library, Information Science & Technology Abstracts (EBSCO)	*"Diabetes Mellitus" OR "Diabetes Mellitus, Type 2" AND Adult OR Aged OR "Aged, 80 and over" OR "Middle Aged" AND "Health Literacy" OR "Health Knowledge, Attitudes, Practice" OR Literacy AND Play OR "Play and Playthings" OR "Experimental Games" AND "Self Care" OR "Self-Management"*	
Google Scholar (English)	*"Diabetes Mellitus" OR "Diabetes Mellitus, Type 2" AND Adult OR Aged OR "Aged, 80 and over" OR "Middle Aged" AND "Health Literacy" OR "Health Knowledge, Attitudes, Practice" OR Literacy AND Play OR "Play and Playthings" OR "Experimental Games" AND* "Self Care" OR "Self-Management"	
Google Scholar (Portuguese)	"Diabetes Mellitus" OR "Diabetes Mellitus Tipo 2" AND Adulto OR Idoso OR "Idoso de 80 Anos ou mais" OR "Pessoa de Meia-Idade" AND "Letramento em Saúde" OR "Conhecimentos, Atitudes e Prática em Saúde" OR Alfabetização AND Jogos OR "Jogos e Brinquedos" OR "Jogos Experimentais" AND Autocuidado OR Autogestão	
CAPES	"Diabetes Mellitus Tipo 2" AND Adulto OR Idoso AND "Letramento em Saúde AND Jogos	
RCAAP	"Diabetes Mellitus" AND "Letramento em Saúde" AND Jogos	

Selection and analysis of studies

The third and fourth steps, described in the manual as the selection and appraisal of studies, will be detailed according to the recommendations of PRISMA-ScR. After searching the databases accessible through the CAPES Journals Portal, references will be analyzed, and duplicates will be selected using Rayyan software.

In addition, the reference screening process is conducted by two trained blind reviewers using Rayyan's resources. Hence, each reviewer assesses the study content independently of the other's inclusion or exclusion decisions. In case of disagreement, an experienced third reviewer is consulted. Following this process, the pre-selected studies will undergo a full-text evaluation based on the designed inclusion and exclusion criteria according to the JBI protocol. Finally, the references of the included studies will be analyzed to include potential new studies.

Data extraction

A tool developed by JBI and adapted for this study will be used to extract relevant data. The following information will be included: study title, type of material, year of publication, study objective, sample, and research site, as well as main findings and educational games used to improve health literacy in people with type 2 DM. The tool is shown in Figure 2.

Figure 2 - Data collection instrument for the review. João Pessoa, Paraíba, Brazil, 2023

PART I-CHARACTERIZATION OF THE SELECTED STUDIES	
Variables	Information to be collected
1 - Title of the study	Title of the study
2 - Type of material	Article, dissertation, thesis, or official document
3 - Year of publication	Year of publication
4 - Objective(s) of the study	Objective(s) of the study
5 - Methodological design of the study	Type of research described in the manuscript
6 - Sample (N)	Number of study participants
7- Study setting and location	Place where the study was carried out (country)
PART II-DATA FROM THE STUDIES RELATED TO THE OBJECTIVES OF THE SCOPING REVIEW	
8-What games exist aimed at improving SL in people with type II DM?	Main results of the variable
9-What steps or requirements are needed to build this type of game?	Main results of the variable
10-What is the gap in game production in LS and type II DM, and what can I offer this audience?	Main results of the variable

Presentation of results

The data extracted will be presented using tables and the results found. They will be arranged through a descriptive analysis that establishes a relationship between what was obtained and the objectives set, answering the review question.

Expected results

The analysis aims to identify games that support improving health literacy in people with type 2 DM. This tool is believed to be an effective educational and playful method of addressing such issues with this population. Gathering this data may highlight existing gaps in this approach, support pedagogical interventions in different health contexts, and provide means for developing new technologies.

CONFLICT OF INTERESTS

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

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