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SYSTEMATIC REVIEW ARTICLE

Application of educational games for assessing self-care behaviors in patients with cardiovascular diseases: a scoping review protocol

Aplicação de jogos educativos para avaliação do autocuidado em doentes cardíacos: protocolo de scoping review

Aplicación de juegos educativos para la evaluación del autocuidado en pacientes cardíacos: protocolo de revisión exploratoria

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Abstract

Context: Knowledge of the disease influences the self-care behaviors of cardiac patients, and the application of educational games in health is a proposal for co-participation.

Objective: To map educational games for assessing self-care behaviors in cardiac patients.

Review method: Scoping review protocol according to the Joanna Briggs Institute method based upon the PCC (Participants, Concept and Context) framework: Participants will include patients with different cardiovascular diseases; the Concept will be educational games for assessing self-care in cardiac patients; and the Context will be studies conducted in outpatient settings. Indexed databases such as MEDLINE, CINAHL, LILACS, ERIC, Cochrane Library, JBI Connect, and gray literature will be consulted. Independent reviewers will extract and synthesize the data.

Presentation and interpretation of the results: A narrative summary, tables, and charts will be used to present and interpret the results.

Conclusion: This study is expected to consolidate the results about educational games for assessing self-care behaviors in cardiac patients.

Keywords: games; cardiovascular diseases; heart diseases; self-care; nursing

Resumo

Contexto: O conhecimento sobre a doença influencia o autocuidado em doentes cardíacos e a aplicação de jogos educativos em saúde constituem uma proposta de coparticipação.

Objetivo: Mapear jogos educativos destinados a avaliação do comportamento de autocuidado em doentes cardíacos.

Método de revisão: Trata-se de protocolo de *scoping review* segundo o método do *Joanna Briggs Institute*, onde na definição dos participantes, conceito e contexto (PCC), serão incluídos como participantes: doentes cardíacos, sob diferentes doenças cardiovasculares; no conceito: jogos educativos para avaliação do comportamento de autocuidado; e no contexto: estudos realizados a nível ambulatório. E para tal, serão consultadas bases indexadas, como: MEDLINE, CINAHL, LILACS, ERIC, Cochrane Library, JBI Connect e literatura cinzenta. A extração e síntese dos dados serão realizadas por revisores independentes.

Apresentação e interpretação dos resultados: A narrativa, tabelas e quadros permearão a apresentação e interpretação dos resultados.

Conclusão: A expetativa é um resultado consolidado sobre jogos educativos para avaliação do comportamento de autocuidado em doentes cardíacos.

Palavras-chave: jogos experimentais; doenças cardiovasculares; doentes cardíacos; autocuidado; enfermagem

Resumen

Contexto: El conocimiento sobre la enfermedad influye en el autocuidado en los pacientes cardíacos y la aplicación de juegos educativos en la salud constituye una propuesta de coparticipación.

Objetivo: Mapear los juegos educativos destinados a evaluar el comportamiento de autocuidado en pacientes cardíacos.

Método de revisión: Se trata de un protocolo de revisión exploratoria según el método del Instituto Joanna Briggs, donde en la definición de participantes, concepto y contexto (PCC) se incluirán como participantes, pacientes cardíacos con diferentes enfermedades cardiovasculares; como concepto, juegos educativos para la evaluación de la conducta de autocuidado, y como contexto, estudios realizados a nivel ambulatorio. Para ello, se consultarán bases indexadas como MEDLINE, CINAHL, LILACS, ERIC, Cochrane Library, JBI Connect y literatura gris. La extracción y la síntesis de los datos las realizarán revisores independientes.

Presentación e interpretación de los resultados: La narración, las tablas y los gráficos marcarán la presentación e interpretación de los resultados.

Conclusión: La expectativa es un resultado consolidado sobre los juegos educativos para la evaluación del comportamiento de autocuidado en los pacientes cardíacos.

Palabras clave: juegos experimentales; enfermedades cardiovasculares; cardiopatías; autocuicado; enfermería

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Introduction

Cardiovascular diseases consist of ischemic heart disease, stroke, heart failure, peripheral arterial disease, and several other cardiac and vascular conditions (Mensah et al., 2019) and remain the leading cause of death worldwide (Mc Namara et al., 2019). It is estimated that, out of the 17 million deaths each year, 7.4 million deaths were due to cardiovascular diseases (Organização Mundial da Saúde, Organização Pan-Americana da Saúde, 2017).

In Brazil, heart diseases such as heart failure, myocardial infarction, atrial fibrillation, and hypertension are estimated to affect approximately 45.7 million people, which corresponds to approximately 32% of the adult population (Stevens et al., 2018).

It should be noted that the management of chronic diseases, such as cardiovascular diseases, is strongly associated with patient adherence to self-care practices. Thus, knowledge about the disease is one of the key factors for developing self-care behaviors (Linn et al., 2016), aiming at lifestyle changes (Dickson et al., 2013).

Educational actions should prioritize forms of interaction, dialogue, and reflection that can be mediated by games, among other educational strategies (Freitas et al., 2014). In general, educational games are a proposal for co-participation that create a space for reflection and sharing and promote learning (Fernandes et al., 2018).

In this context, as health professionals, nurses have the opportunity to use educational games as playful tools to promote self-care practices among patients, and teach, train, reinforce, and assess self-care skills in cardiovascular diseases (Marques et al., 2016).

Outpatient settings are extremely relevant scenarios for the promotion of self-care practices in patients with cardiovascular diseases. These environments are permeated by individuals who constantly return to the health services for follow-up treatment.

Therefore, a preliminary search was undertaken between February and March 2020 in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE), via PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Joanna Briggs Institute (JBI), and Cochrane Library. No scoping reviews about educational games for assessing self-care behaviors in cardiac outpatients were identified.

Scoping reviews are eligible research approaches to identify and analyze knowledge gaps and promote a reflection on how research is addressed and developed on a certain topic (Peters et al., 2020). Thus, scoping reviews provide a comprehensive synthesis of the knowledge about a certain topic by incorporating different study designs. On the other hand, it also contributes to the advancement of knowledge about healthcare practices, policies, and research (Nascimento et al., 2019).

For Peters et al. (2020), scoping review might be conducted for various reasons. In this study, the scoping review was considered the best option over other review methodologies because it aims to provide broader and more extensive knowledge on the topic. Thus, this scoping review was developed as a research output within the scope of a doctoral program in healthcare sciences, and it will support the construction of an educational game for assessing self-care behaviors in cardiac patients.

Therefore, the authors decided to conduct a scoping review according to the methodology proposed by the Joanna Brigs Institute (Peters et al. 2020) to map educational games for assessing self-care behaviors in patients with different cardiovascular diseases.

The review question is: Which educational games can be applied for assessing self-care behaviors in cardiac outpatients?

Review Method

The scoping review will be based on the Participants, Concept, and Context (PCC) framework. From this perspective, regarding the participant inclusion criteria, the review will include studies involving patients with cardiovascular diseases, namely systemic arterial hypertension, myocardial infarction, heart failure, atrial fibrillation, and stroke. These heart diseases were chosen due to their high incidence in the world population (Organização Mundial da Saúde, 2017).

Regarding the concept, this review will include studies focused on educational games for assessing self-care behaviors. Regarding the context, it will include studies carried out in outpatient settings.

It will consider qualitative and/or quantitative studies with experimental and epidemiological designs, including randomized controlled trials, quasi-experimental studies, before-and-after studies, and case studies. In addition, literature reviews, observational studies, descriptive cross-sectional and longitudinal studies will be considered. Gray literature will be searched through dissertations and theses in the databases of the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) and Google Scholar. This review will also consider other texts, such as opinion papers and reports, without time limit of the publications, and full-text studies in English, Portuguese, and Spanish.

Search strategy and study identification

A three-step search strategy will be used. The initial search was undertaken in the MEDLINE and CINAHL databases using the following words and expressions: *games*, *cardiovascular disease*, *myocardial infarction*, *atrial fibrillation*, *systemic arterial hypertension*, *cerebrovascular disease*, *stroke*, and *outpatient*.

Then, in the second step, all identified keywords and index terms will be used in another search in the following databases: MEDLINE via PubMed, CINAHL, *Literatura científica e técnica da América Latina e Caribe* (LILACS), via *Biblioteca Virtual em Saúde* (BVS), Cochrane Library; JBI Connect, Educational Resources Information Center (ERIC), *Portal de Teses e Dissertações da CAPES*, and Google Scholar.

On December 2020, a search strategy completed in MEDLINE database, via PubMed, using controlled descriptors [mh] and free-text synonymous [tiab], in association with the Boolean operators AND and OR and applying the language filter Portuguese, English, and Spanish,

generated the following Boolean expression: (((Games, Recreational[mh] OR "Recreational Game*"[tiab] OR "Educational Game*"[tiab] OR Play and Playthings[mh] OR Play*[tiab] OR Toys[tiab] OR Games, Experimental[mh] OR Video Games[mh] OR Game*[tiab] OR Educational Technology[mh] OR "Educational Technolog*"[tiab] OR "Instructional Technolog*"[tiab] OR "Educational Intervention*"[tiab] OR "Educational Action*"[tiab] OR "Health Education*"[ti]) AND (Outpatients[mh] OR Outpatient*[tiab] OR Ambulatory Care Facilities[mh] OR "Ambulatory Care Facilit*"[tiab] OR "Outpatient Clinic*"[tiab])) AND (Cardiovascular Diseases[mh] OR "Cardiovascular Disease*"[tiab] OR Myocardial Infarction[mh] OR "Myocardial Infarct*"[tiab] OR "Cardiovascular Stroke*"[tiab] OR "Heart Attack*"[tiab] OR "Heart Disease*"[tiab] OR Cardiopath*[tiab] OR Atrial Fibrillation[mh] OR "Atrial Fibrillation*"[tiab] OR Hypertension[mh] OR Hypertension[tiab] OR "High Blood Pressure*"[tiab] OR Cerebrovascular Disorders[mh] OR "Cerebrovascular Disorder*"[tiab] OR "Intracranial Vascular Disease*"[tiab] OR "Brain Vascular Disorder*"[tiab] OR "Cerebrovascular Insufficienc*"[tiab])) AND (English[lang] OR Portuguese[lang] OR Spanish[lang]). In this preliminary search, 602 documents were retrieved.

Finally, in the third step, a search will be undertaken for complementary studies through the references of the studies included in the scoping review.

Study selection

The software used for managing search results will be the free, open-access version of EndNote Online reference manager through Clarivate Analytics, by registering in the online webpage of My Endnote Web. Using this software, all identified citations will be collated and duplicates removed. Titles and abstracts will then be screened by two independent reviewers for assessment against the inclusion criteria for the scoping review based on the PCC framework. Then, the full text of selected citations will be assessed in detail against the inclusion criteria by two independent reviewers. Excluded studies will be recorded and reported in the full report of the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion, or with a third reviewer. The search results will be reported in full and presented in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Review (PRISMA-ScR) flowchart, as recommended by the Joanna Briggs Institute (Peters et al. 2020).

Data extraction

Data will be extracted from studies included in the scoping review by two independent reviewers using a data extraction tool developed by the researchers based on the review objective and question (Table 1). The data extracted from full-text articles will include specific details about the study population, designs, and key findings. In a pilot test, the reviewers will assess the relevance of the items assessed by the tool. The data extraction tool will be modified as necessary to add relevant data found throughout text reading. Modifications will be detailed in the full report of the scoping review. Any disagreements that arise between the reviewers will be resolved through discussion with a third reviewer. If necessary, the authors of included studies will be contacted to clarify any doubts or request additional information during this process.

Table 1

Data extraction tool for the systematic review

Research title
Application of educational games for assessing self-care behaviors in cardiac patients: a scoping review protocol
Review question
Which educational games can be applied for assessing self-care behaviors in cardiac outpatients?
Study inclusion criteria according to the PCC framework
Participants: studies including patients with cardiovascular diseases
Concept: studies focused on educational games for assessing self-care behaviors
Context: studies conducted in outpatient settings
Data extraction from the articles analyzed
Article number
Authors/year
Title
Study design
Educational game application context
Participants and follow-up period
Type of educational game applied
Main results (how were self-care behaviors assessed in participants through the educational game?)

Note. PCC = Participants; Concept; Context.

Data synthesis

The results will be presented in narrative form, using tables and charts to list the types of educational games.

Presentation and interpretation of the results

These results are expected to describe educational games, using several methodological designs, for assessing self-care behaviors in patients with cardiovascular diseases.

Conclusion

Since this study is a scoping review, for which scientific evidence available in the public domain will be identified, we considered that it is was not necessary to submit it to a committee for ethical review.

The proposed study was not funded by any funding agencies, and there is no conflict of interest in this study. Hence, this study is expected to consolidate the results about educational games for assessing self-care behaviors in cardiac patients.

Author contributions

Conceptualization: Pereira, F. A. C., Correia, D. M. S.
Methodology: Pereira, F. A. C., Correia, D. M. S., Moraes, E. B.
Supervision: Correia, D. M. S., Moraes, E. B.
Writing – original draft: Pereira, F.A.C., Correia, D.M.S., Moraes, E.B.
Writing – review & editing: Correia, D. M. S., Moraes, E. B.

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