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Virtual serious games for women's health education: A scoping review protocol

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Abstract

Objective: This scoping review aims to identify and map the current state of research on virtual serious games (VSGs) designed for women's health education, with a focus on intended users, design characteristics, and assessed outcomes.

Inclusion criteria: Quantitative, qualitative, and mixed methods study designs examining the use of virtual serious games intended for women's health education. Grey literature sources such as conference abstracts, text, opinion papers, dissertations, and other unpublished material will be excluded. There is no limit on the publication period; however, sources are limited to English.

Methods: The proposed review will be conducted in accordance with the JBI methodology for scoping reviews [18] and reported following the Preferred Reporting Items of Systematic Review and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR) [19]. Databases to be searched will include MEDLINE (OVID), CINHAL – Cumulative Index to Nursing and Allied Health Literature (EBSCO), Web of Science (Clarivate), PsycINFO (OVID), and Embase (OVID) databases. Hand-searching by reviewing selected articles' reference lists will complement the search and ensure relevant studies are not missed. All databases will be searched with no restrictions on the time frame. Search results from each database will be imported into EndNote20 and transferred into Covidence, where duplicates will be removed. Source selection (both at the title/abstract screening and full-text screening) will be performed by two reviewers, independently using the inclusion and exclusion criteria. Any disagreements will be resolved through discussion or by the decision of a third reviewer. The primary researcher will extract data from the sources using a custom data extraction tool and verified by a second reviewer. Qualitative content analysis for basic coding of data to a particular category and descriptive statistical analysis (i.e., frequency counting) will be conducted relating to the study's research questions. The SR results will be presented in tabular format and accompanied by a narrative summary describing how the results relate to the review objectives and questions.

Expected Results: The expected results of this scoping review are to provide a comprehensive overview of existing VSGs developed for women's education, highlighting the target user groups, key design features, and the types of outcomes that have been evaluated. This will help identify gaps in the literature and inform future development and research in the area.

Attachments

Appendix I.pdf
204KB

Appendix II.pdf
77KB

Introduction

1 Virtual serious games (VSGs) hold significant promise for enhancing patient education and decision-making, especially in women's health, particularly in childbirth and reproductive health. Many women lack essential knowledge about their birth options, which can lead to unnecessary interventions [1, 2, 3, 4, 5]. Research indicates that VSGs have demonstrated improved user experience and increased knowledge and skills in the education of healthcare professionals [6, 7, 8, 9, 10, 11].

Despite the expanding body of research in healthcare providers' education, there is currently a notable gap in the literature. To date, no scoping or systematic review specifically focused on VSGs tailored for women's health education has been conducted. Conducting this review would help provide researchers with a comprehensive understanding of the current state of research in this domain. Moreover, it would facilitate the identification of gaps and areas for further investigation.

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, and *JBI Evidence Synthesis* was conducted, and no current or in-progress scoping reviews or systematic reviews on the topic were identified.

The primary objective of this scoping review is to identify and map the state of current research on VSGs designed for women's health education. This review will provide a detailed analysis of the specific populations of women targeted by VSGs, the characteristics (i.e., targeted areas of women's health, theoretical perspectives, engagement of women, collaborations and partnerships with developers, gaming modalities, and gameplay dosage) and the outcomes examined in these VSGs. Through this examination, we will identify gaps in the current research and offer valuable suggestions for future studies on VSGs for women's health education.

Review Question(s)

2 What is the current state of research on VSGs designed for women's health education?
This is divided into the following sub-questions:
i) Which specific populations of women are targeted by VSGs in current research?
ii) What are the characteristics of VSGs designed for women's health education?
iii) What outcomes have been examined in studies that evaluated VSGs designed for women's health?

Inclusion Criteria

3 The Participant, Concept, Context (PCC) approach, as recommended by the JBI group [18], will be used to develop the eligibility criteria. In brief, the eligibility criteria are as follows: participants – women (age 18 years or older), however not limited to health condition or treatment status; concept – VSGs; context – health education.

3.1 Participants

This review will consider study participants identifying as women or females 18 years and older with no restrictions based on health condition or treatment status. Studies focused on educating healthcare professionals about women's health will be excluded.

3.2 Concept

This review will consider studies that explored VSGs intended for women's health education. In this context, VSGs are interactive digital games primarily designed for educational purposes rather than pure entertainment [12, 13].

To maintain the emphasis on women's health education, studies focusing solely on entertainment or lacking an educational component related to women's health will be excluded. Exergames, which aim to promote exercise [14], without providing health education, will be excluded. In addition, studies utilizing games for therapeutic purposes, such as pain management or anxiety reduction, without an educational component will be excluded. Furthermore, studies solely focusing on gamification, defined as using game design elements (i.e., badges, leaderboards, points, evoked emotions, narratives, and competition) in traditionally nongame contexts [15, 16], will be excluded as gamification is distinct from VSGs. Gamification is a design technique applied to existing learning activities or curricula to achieve goals, while VSGs begin as a game designed to fulfill specific objectives [16].

3.3 Context

This review will consider studies that include any settings where health education is provided to women, such as healthcare facilities (hospitals, clinics, and health centres), community centres, schools and universities, workplaces and other relevant institutions or organizations. Health education is "any combination of learning experiences designed to help individuals... improve their health by increasing knowledge, influencing motivation and improving health literacy"[17]. No limitations will be set for the geographical locations of this review.

3.4 Types of sources

This scoping review will include quantitative, qualitative, and mixed methods study designs. Furthermore, systematic reviews will also be considered for inclusion in the proposed scoping review. However, sources of grey literature, including conference abstracts, opinion papers, dissertations, and other unpublished materials, will be excluded to ensure that only peer-reviewed studies with sufficient methodological rigor and detail for data extraction are included.

Methods

4 The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews[18] and in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [19].

4.1 Search strategy

The search strategy will aim to locate published primary studies, systematic or scoping reviews. An initial limited search of MEDLINE (Ovid) and CINHAL (EBSCO) was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy for MEDLINE (Ovid) and CINHAL (EBSCO) (see Appendix I). Input was sought from a research librarian during the search strategy developed for the MEDLINE application and all other electronic databases. The search strategy, including all identified keywords and index terms, will be adapted for each included information source. The reference lists of articles selected for full-text will be screened for additional papers.

Articles published in English will be included to ensure accurate understanding and interpretation due to the author's proficiency in the language. No specific timeframe limitations will be set.

The databases to be searched include MEDLINE (Ovid), CINHAL (EBSCO), EMBASE (Ovid), Web of Science (Clarivate), and PsycINFO (Ovid).

4.2 Study/Source of evidence selection

Following the search, all identified citations and accompanying abstracts will be collated and uploaded into EndNote Version 20 (Clarivate Analytics, PA, USA). The citations and

abstracts will be transferred into Covidence systematic review software (Veritas Health Innovation, Melbourne, Australia), and duplicates will be removed. Following a pilot test, titles and abstracts will be screened by two independent reviewers (KJ and BG) for assessment against the inclusion and exclusion criteria for the review. Potentially relevant sources will be retrieved in full and imported into Covidence. Full-text sources that do not meet the inclusion criteria will be excluded and reasons for their exclusion will be reported in 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 results of the search will be reported in full in the final scoping review and presented in a PRISMA flow diagram [20].

4.3 Data extraction

Data will be extracted from papers included in the scoping review by the first author using a custom data extraction tool developed by the reviewers. The second reviewer will verify the data by reviewing the data extraction tool alongside the selected source. The data extracted will include specific details about the population, concept, methods, and key relevant to the review question. A draft extraction tool is provided (see Appendix II). The draft data extraction tool will be modified and revised as necessary while extracting data from each included paper. Modifications will be detailed in the full scoping review. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer. Authors of papers will be contacted to request missing or additional data, where required.

4.4 Data analysis and presentation

In this scoping review, we will use conventional content analysis [21] and descriptive statistical analysis, focusing on frequency counts and percentages to analyze the data. The results will be organized based on the objectives of the scoping review and presented in tables. Along with the tabular presentations, a narrative summary, including descriptive frequencies and percentage counts, will address the research question.

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