

# Digital educational technology on HIV/AIDS for adolescents and young adults: a protocol of scope review

Tecnologia educacional digital sobre HIV/AIDS para adolescentes e jovens: protocolo de revisão de escopo

Tecnología educativa digital sobre HIV/SIDA para adolescentes y jóvenes: protocolo de revisión del alcance

Camila Moraes Garollo Piran<sup>1</sup>  
ORCID: 0000-0002-9111-9992

Beatriz Souza da Fonseca<sup>1</sup>  
ORCID: 0000-0002-3469-2231

Jhenicy Rubira Dias<sup>1</sup>  
ORCID: 0000-0002-2621-2058

Bianca Machado Cruz Shibukawa<sup>1</sup>  
ORCID: 0000-0002-7739-7881

Gabrieli Patricio Rissi<sup>1</sup>  
ORCID: 0000-0002-1702-4004

Ieda Harumi Higarashi<sup>1</sup>  
ORCID: 0000-0002-4205-6841

Maria de Fátima Garcia Lopes Merino<sup>1</sup>  
ORCID: 0000-0001-6483-7625

Marcela Demitto Furtado<sup>1</sup>  
ORCID: 0000-0003-1427-4478

<sup>1</sup> State University of Maringá, Maringá,  
PR, Brazil

## Editors:

Ana Carla Dantas Cavalcanti  
ORCID: 0000-0003-3531-4694

Paula Vanessa Peclat Flores  
ORCID: 0000-0002-9726-5229

Mariana Bueno  
ORCID: 0000-0002-1470-1321

## Corresponding author:

Camila Moraes Garollo Piran  
E-mail: camilagarollo@gmail.com

Submission: 08/17/2021  
Approved: 01/11/2022

## ABSTRACT

**Objective:** To track scientific evidences about the use of digital educational technology in health, related do HIV/AIDS, addressed to both adolescents and young adults. **Method:** This is about a scope revision protocol, structured according to methodological guidelines by the Joanna Brigs Institute (JBI). Six information bases will be used, applying health descriptors. The process for researching, identifying and evaluating articles will be carried out by two independent researchers, guided by plans as determined by the JBI, meant to answer the following driving question: "What evidences can be found about the use of digital educational technology in health, related to HIV/AIDS, addressed to both adolescents and young adults?". The research will include articles published in either English, Portuguese or Spanish, which are both private and public property and with different methodological approaches. The results will be presented as guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews. The protocol was registered at the Open Science Framework (OSF) under Nr. 10.17605 / OSF / QK2G7.

**Descriptors:** Educational technology; HIV; Adolescent's Health.

## RESUMO

**Objetivo:** mapear as evidências científicas acerca do uso de tecnologia educacional digital em saúde relacionada ao HIV/AIDS, direcionada a adolescentes e jovens adultos. **Método:** trata-se de um protocolo de revisão de escopo, estruturado conforme diretrizes metodológicas do Instituto Joanna Briggs (JBI). Serão utilizadas seis bases de informação, com emprego dos descritores de saúde. O processo de busca, identificação e avaliação de artigos será realizado por dois avaliadores independentes, norteado pelos pressupostos estabelecidos pelo JBI, buscando responder à seguinte questão norteadora: "Quais as evidências científicas encontradas acerca do uso de tecnologia educacional digital em saúde relacionada ao HIV/AIDS, direcionada a adolescentes e jovens adultos?" Serão incluídos artigos publicados no idioma inglês, português ou espanhol, de domínio público e privado, e com diferentes abordagens metodológicas. Os resultados serão apresentados conforme as orientações do *Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews*. O protocolo foi registrado na *Open Science Framework (OSF)*, sob registro nº 10.17605 / OSF.IO / QK2G7.

**Descritores:** Tecnologia Educacional; HIV; Saúde do Adolescente.

## RESUMEN

**Objetivo:** estructurar las evidencias científicas sobre el uso de tecnología educativa digital en salud relacionada con el HIV/SIDA, dirigida a adolescentes y adultos jóvenes. **Método:** se trata de un protocolo de revisión del alcance, estructurado conforme directrices metodológicas del Instituto Joanna Briggs (JBI). Se utilizarán seis bases de información, con el empleo de descriptores de salud. El proceso de búsqueda, identificación y evaluación de artículos será realizado por dos evaluadores independientes, guiado por los presupuestos establecidos por JBI, buscando responder a la siguiente pregunta orientadora: "¿Qué evidencias científicas se han encontrado sobre el uso de la tecnología educativa digital sanitaria relacionada con el HIV/SIDA, dirigida a adolescentes y adultos jóvenes?" Se incluirán artículos publicados en el idioma inglés, portugués o español, de dominio público y privado, y con diferentes enfoques metodológicos. Los resultados se presentarán de acuerdo con las orientaciones del *Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews*. El protocolo se ha registrado en *Open Science Framework (OSF)*, bajo número 10.17605 / OSF.IO / QK2G7.

**Descritores:** Tecnología Educacional; HIV; Salud del Adolescente.

## INTRODUCTION

The Syndrome of Acquired Immunodeficiency (AIDS) and the Human Immunodeficiency Virus (HIV) have been presented as an instable and continuous worldwide phenomenon since the early 80's, affecting until current times both the health and the life of the individuals, whatever their sex, sexual option, social class, culture or age<sup>(1)</sup>.

Nevertheless, over recent years, adolescents and youngsters came do represent a growing number of persons living with HIV/DIA. Worldwide, in 2017, 590 thousand young people from 15 to 24 years old were estimated to be infected; and out of that group, 250 thousand were adolescents from 15 to 19 years old<sup>(2)</sup>.

Therefore, the increased number of HIV/AIDS cases among that age group represents a serious public health problem<sup>(3)</sup>. This specific population is characterized by presenting health behaviors that are risky (RHB), understood as actions that may threaten their health, both today and in the future. RHB examples include alcohol and drugs consumption, tobacco included, improper alimentary habits, physical inactivity and unprotected sexual behaviors, leading to undesired pregnancy and Sexually Transmissible Infections (STI)<sup>(4)</sup>.

HIV/AIDS is still a stigmatized theme, due to the multiple social and individual significances assigned to the disease. It is known that, if actions for promoting health and HIV/AIDS adequate prevention are not provided, the chronic condition is increased, with negative health impact for those who live with the disease, besides affecting their families<sup>(5)</sup>.

Furthermore, health managers do concern about costs caused by the disease, for both the patient him or herself and for the society as a whole. Those expenditures are related to medical visits, internments, Antiretroviral Therapy (ARVT) and ambulatory treatment<sup>(6)</sup>. Adherence to ARVT proves to be an important challenge for controlling and eradicating the epidemic, requiring efforts by both health services and patients to start the treatment and to keep it in process<sup>(7)</sup>.

Considering the health impact caused by risky behaviors during the adolescence and the youth periods, it becomes critical to identify and to incorporate health educational strategies, in order

to reduce the number of HIV/AIDS occurrences among that public<sup>(8)</sup>.

One can observe how easy it is for teens to deal with technologies, virtual social networks and the internet, which are important means for part of that public to access information – and therefore, a means for making health education public<sup>(9)</sup>.

In must be remarked that those tools must release trustful information, must be attractive, and must allow for the interaction of adolescents and young adults with the theme. It is well known that the internet provides that interactive and dynamic ambiance for divulging information that, on the other hand, may influence both behavior and attitudes changes<sup>(9)</sup>.

One of the tools that might be implemented for that public are the Information and Communication Technologies (ICT), essential resources in the sexual and health education process, as they enable for exchanging knowledge, appraising previous cognizance supported on scientific information, besides leading to the collective construction of knowledge concerning health<sup>(9)</sup>.

In must be remarked that those tools must release trustful information, must be attractive, and must allow for the interaction of adolescents and young adults with the theme. It is well known that the internet provides that interactive and dynamic ambiance for divulging information that, on the other hand, may influence both behavior and attitudes changes<sup>(9)</sup>.

We remark that, in earlier times, knowledge involving the term "technology" was related to equipment and physical goods used in procedures. However, following the human and scientific development, that concept was enlarged, and now it involves the daily experience of researches and users, developing safe information about the conception of both material products or knowledge that might be used in practical situations<sup>(10)</sup>. Thus, the Digital Educational Technologies (DET) are proving to be adequate tools to provide apprenticeship, as they use digital technological resources in the education, turning adolescents and young adults into knowledge agents, promoting their participation in the educational process<sup>(11,12)</sup>. All those resources may be used in activities either present or in distance (e-learning), and may be transmitted using the internet, TV, computers, mobile devices such as smartphones and tablets (m-learnin)g, among others<sup>(12)</sup>.

Simulating and carrying out careful procedures in virtual environments may help to improve and acquire capabilities<sup>(9)</sup>. Considering that TEDs in health are more and more present in teaching procedures, and that systematized results on the theme are still not sufficient – despite the many resources available to be used by adolescents and young adults –, this study discussed what digital educational technologies in health aimed at HIV/AIDS are currently being used among that public, thus contributing with the health promotion and damages prevention.

In view of the HIV/AIDS relevance and the benefits the digital environment provides for the education in health, the purpose of the present study is to track scientific evidences of the use of the digital educational technology in health related to HIV/AIDS, addressed to adolescents and young adults.

## METHOD

This is a review of the literature, the scoping review type (or scope review), characterized as a systematized, exploratory review that allows to identify the relevant scientific production with underlying key-concepts in one certain area of study, providing a map for accessible evidences, and identifying lacking elements at the knowledge basis whenever other more specific elements related to one certain theme are not clear. Besides, the scope review becomes even more important when dealing with a thematic method, as it allows to explore the literature dimension or extension, to synthesize and track evidences, and to provide information on future researches<sup>(13)</sup>.

The study will be organized according to the following stages: definition and alignment of both the objective and the research question; development of inclusion criteria; description of the approach as planned for the investigation, selection and data extraction; investigation and selection of evidences; extraction and analysis of evidences; presentation of review/synthesis results; summary of evidences found concerning the purpose of the review,, thus allowing for conclusions and observing certain aspects of the findings<sup>(13)</sup>.

The acronym PCC (P: Population; C: Concept; and C: Context) was adopted as strategy to elaborate the research question<sup>(13)</sup>. In the following structure the acronym represents: Population – adolescents and young adults; Concept – digital

educational technology; Context – HIV/AIDS. It must be remarked that adolescents and young adults will be considered individuals aged from 10 to 24 years<sup>(14)</sup>.

Next, the following question was elaborated: “What scientific evidences were found about the use of digital educational technology in health related to HIV/AIDS addressed to adolescents and young adults?”.

The investigation in articles will be carried out by two independent researchers over the period foreseen from November, 2021, to January, 2022. The sample of articles will be selected based on the following inclusion criteria: articles in English, Portuguese or Spanish, either public or private property; studies that deal with the use of educational technologies, involving the internet, TV, computers, mobile devices, such as smartphones and tablets (m-learning), among others<sup>(12)</sup>. As exclusion criteria were defined letters addressed to the editor, abstracts, annals, besides articles not found in whole, even after contact with the corresponding author. The Mendeley Desktop reference manager will be used.

For extracting data, the JBI adapted instrument will be used, as it considers title data of the study, year of publication, author and authors, objective of the study, methodological outlining and main findings<sup>(13)</sup>.

Descriptors definition was based on a limited investigation on electronic data – such as academic Google and Cumulative Index to Nursing and Allied Health Literature (CINAHL) – to identify controlled and not controlled descriptors on the theme, and, based on them, identify the controlled descriptors using the tools *Descritores em Ciências da Saúde* (DeCS) and Medical Subject Headings (MeSH), which are: Educational technology; Adolescent; Young adult; HIV; Acquired Immunodeficiency Syndrome. The time period for the investigation will be the starting of each base until the end of 2021, aimed at identifying as many productions as possible about the digital educational technology concerning HIV/AIDS for adolescents and young adults.

Data sources selected will be: Medical Literature Analysis and Retrieval System Online (MEDLINE); Cumulative Index to Nursing and Allied Health Literatures (CINAHL); Scopus; Web of Science, *Biblioteca Virtual de Saúde* (BVS); PubMed via

Medline and LILACS. As grey literature, academic Google will be used. We remark that a reading of Bibliographic References of all articles selected will also be carried out in order to identify new studies.

For the studies investigation, the boolean operators will be applied on the information bases, forming the following retriever: "Educational technology" AND "HIV" OR "Acquired Immunodeficiency Syndrome" AND "Adolescent" OR "Young adult"; "Tecnologia educacional" AND "HIV" OR "Síndrome de Imunodeficiência Adquirida" AND "Adolescente" OR "Jovem Adulto"; "Tecnologia educativa" AND "VIH" OR "Síndrome de imunodeficiência adquirida" AND "Adolescente" OR "Adulto jovem".

At last, the results will be presented according to the guidance of the checklist of the Preferred Reporting Items for Systematic Reviews and

Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR)<sup>(15)</sup>. The protocol was registered at the Open Science Framework (OSF) under Nr. 10.17605 / OSF.IO / QK2G7. The method to be used does not require the appreciation by the Ethic Committee for Research.

### CONFLICT OF INTEREST

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

### FINANCIAL SUPPORT

The present study was carried out counting on the support of the Coordination for the Improvement of University Personnel - Brazil (CAPES) - Financing Code 001

### REFERÊNCIAS

1. Teixeira E, Palmeira IP, Rodrigues ILA, Brasil GB, Carvalho DS, Machado TDP. Participative development of educational technology in the HIV/AIDS context. *Rev Min Enferm* [Internet]. 2019 [cited 2021 May 28];23:e-1236. Available from: <http://reme.org.br/artigo/detalhes/1382> <http://dx.doi.org/10.5935/1415-2762.20190084>.
2. United Nations International Children's Emergency Fund (UNICEF). Adolescent HIV prevention [Internet]. New York: UNICEF; 2021 [cited 2021 May 28]. Available from: <https://data.unicef.org/topic/hivaids/adolescents-young-people/>
3. Ministério da Saúde (BR). Boletim epidemiológico HIV/Aids [Internet]. Brasília: Ministério da Saúde; 2020 [cited 2021 May 28]. Available from: <http://www.aids.gov.br/pt-br/pub/2020/boletim-epidemiologico-hivaids-2020>
4. Zappe JG, Alves CF, Dell Aglio DD. Comportamentos de risco na adolescência: revisão sistemática de estudos empíricos. *Psicol Rev* [Internet]. 2018 [cited 2021 May 28];24(1):79-100. Available from: [http://pepsic.bvsalud.org/scielo.php?script=sci\\_abstract&pid=S1677-11682018000100006](http://pepsic.bvsalud.org/scielo.php?script=sci_abstract&pid=S1677-11682018000100006) <http://dx.doi.org/10.5752/P.1678-9563.2018v24n1p79-100>.
5. Jesus GJ, Oliveira LB, Caliari JS, Queiroz AA, Gir E, Reis RK. Dificuldades do viver com HIV/Aids: entraves na qualidade de vida. *Acta Paul Enferm* [Internet]. 2017 [cited 2021 May 28];30(3):301-7. Available from: <https://www.scielo.br/j/ape/a/qcqrCzQgdz-8tZXFR3DBk7ss/abstract/?lang=pt> <http://dx.doi.org/10.1590/1982-0194201700046>.
6. Russo LX, Brambilla MA, Costa CKF, Cunha MS. Análise da eficiência dos tratamentos hospitalares de hiv/aids e seus determinantes nas unidades federativas do Brasil. *Rev Econ NE* [Internet]. 2019 [cited 2021 May 28];50(4):79-95. Available from: <https://www.researchgate.net/publication/341685773>
7. Nunes SS Jr, Ciosak SI. Antiretroviral Therapy for HIV/AIDS: state of the art. *Rev Enferm UFPE on line* [Internet]. 2018 [cited 2021 May 28];12(4):1103-11. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/231267> <http://dx.doi.org/10.5205/1981-8963-v12i4a231267p1103-1111-2018>.
8. Saura S, Jorquera V, Rodríguez D, Mascort C, Castellà I, García J. Gender meanings of the risk of sexually transmitted infections/HIV transmission among young people. *Aten Primaria* [Internet]. 2019 [cited 2021 May 28];51(2):61-70. Available from:

- <https://www.sciencedirect.com/science/article/pii/S0212656717300343> <http://dx.doi.org/10.1016/j.aprim.2017.08.005>. PMID:29102221.
9. Pinto AC, Scopacasa LF, Bezerra LLAL, Pedrosa JV, Pinheiro PNC. Use of information and communication technologies in health education for adolescents: integrative review. *Rev Enferm UFPE on line [Internet]*. 2017 [cited 2021 May 28];11(2):634-44. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/11983> <http://dx.doi.org/10.5205/1981-8963-v11i2a11983p634-644-2017>.
  10. Domingues AN, Jesus ITM, Zem-Mascarenhas SH. Computing in education in health care and nursing: review of research groups. *J Health Inform [Internet]*. 2017 [cited 2021 May 28];9(1):19-24. Available from: <http://www.jhi-sbis.saude.ws/ojs-jhi/index.php/jhi-sbis/article/view/460/301>
  11. Lima ACMACC, Bezerra KC, Sousa DMN, Vasconcelos CTM, Coutinho JFV, Oriá MOB. Educational technologies and practices for prevention of vertical HIV transmission. *Rev Bras Enferm [Internet]*. 2018 [cited 2021 May 28];71(Suppl. 4):1759-67. Available from: <https://www.scielo.br/j/reben/a/yvS-cYX5hhVbcyVsBrFCPnKj/?lang=en> <http://dx.doi.org/10.1590/0034-7167-2016-0333>. PMID:30088650.
  12. Silveira MS, Cogo ALP. Contribuições das tecnologias educacionais digitais no ensino de habilidades de enfermagem: revisão integrativa. *Rev Gaúcha Enferm [Internet]*. 2017 [cited 2021 May 28];38(2):e66204. Available from: <https://www.scielo.br/j/rngen/a/CR4LT8PhNvQkCcs8R9Y9XcH/?lang=pt> <http://dx.doi.org/10.1590/1983-1447.2017.02.66204>. PMID:28723986.
  13. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Scoping reviews (2020 version). In: Aromataris E, Munn Z, editors. *JBIM manual for evidence synthesis [Internet]*. Adelaide: JBI; 2020. chap. 11 [cited 2021 May 28]. Available from: <https://synthesismanual.jbi.global/> <https://doi.org/10.46658/JBIMES-20-12>.
  14. World Health Organization (WHO). Adolescent health [Internet]. Geneva: WHO; 2017 [cited 2021 June 2]. Available from: [https://www.who.int/health-topics/adolescent-health/#tab=tab\\_1](https://www.who.int/health-topics/adolescent-health/#tab=tab_1)
  15. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med [Internet]*. 2018 [cited 2021 May 28];169(7):467-73. Available from: <http://www.prisma-statement.org/Extensions/ScopingReviews> <http://dx.doi.org/10.7326/M18-0850>. PMID:30178033.

AUTHORSHIP CONTRIBUTIONS
Project design: Piran CMG, Furtado MD
Data collection:
Data analysis and interpretation:
Writing and/or critical review of the intellectual content: Piran CMG, Fonseca BS, Dias JR, Schibukawa BMC, Rissi GP, Higarashi IH, Merino MFGL, Furtado MD
Final approval of the version to be published: Piran CMG, Fonseca BS, Dias JR, Schibukawa BMC, Rissi GP, Higarashi IH, Merino MFGL, Furtado MD
Responsibility for the text in ensuring the accuracy and completeness of any part of the paper: Piran CMG, Furtado MD



Copyright © 2022 Online Brazilian Journal of Nursing

This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.