

Risk factors for HIV infection among young people: a systematic review protocol

Fatores de risco à infecção pelo HIV entre pessoas jovens: protocolo de revisão sistemática

Factores de riesgo de infección por VIH entre jóvenes: protocolo de revisión sistemática

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Abstract

This is a systematic review protocol, whose objective is to identify and analyze risk factors for HIV infection among young people. The review will be conducted through the following steps: elaboration of the research question, search for relevant publications, selection of studies found, data extraction, analysis, and evidence synthesis. The guiding question was elaborated from the PEO strategy (person, exposure and outcome): what are the risk factors (E) for HIV infection (O) among young people (P)? For bibliographic search, controlled and free vocabularies that address the question to be investigated will be used. The searches will be carried out in seven scientific literature databases and one gray literature database, in addition to a manual search for articles. The results obtained will be exported to the Rayyan QCRI software, allowing the exclusion of duplicate materials and the reading of titles and abstracts by two reviewers independently. Observational-analytic studies that address risk factors associated with HIV infection among young people will be included in the study, and those included will be read in full to ensure their applicability to the study. The data found will be extracted through a structured form so that they are then subjected to a narrative synthesis and meta-analysis, if possible. Studies will also be subjected to an assessment of methodological quality and, finally, the quality of the evidence will be analyzed.

Keywords: HIV; Risk Factors; Adolescent; Young adult.

Resumo

Trata-se de um protocolo de revisão sistemática, cujo objetivo pretende identificar e analisar os fatores de risco à infecção pelo HIV entre pessoas jovens. A revisão será conduzida por meio das seguintes etapas: elaboração da questão de pesquisa, busca de publicações relevantes, seleção dos estudos encontrados, extração de dados, análise e síntese das evidências. A pergunta norteadora foi elaborada a partir da estratégia PEO (pessoa, exposição e *outcome* - desfecho): "Quais são os fatores de risco (E) à infecção pelo HIV (O) entre pessoas jovens (P)?" Para a busca bibliográfica, serão utilizados vocabulários controlados e livres que contemplem a questão a ser investigada. As buscas serão feitas em sete bases de dados de literatura científica e uma base de dados de literatura cinzenta, além de estar prevista uma busca manual por artigos. Os resultados obtidos serão exportados para o software Rayyan QCRI, sendo possível a exclusão de materiais duplicados e a leitura dos títulos e resumos por dois revisores de maneira independente. Estudos

observacionais-analíticos que abordem fatores de risco associados à infecção pelo HIV entre pessoas jovens serão incluídos no estudo, sendo que aqueles incluídos passarão pela leitura na íntegra para garantir a sua aplicabilidade ao estudo. Os dados encontrados serão extraídos por meio de uma ficha estruturada, para que, em seguida, sejam submetidos a uma síntese narrativa e metanálise, se possível. Os estudos também serão submetidos a uma avaliação da qualidade metodológica e por fim, a qualidade da evidência será analisada.

Palavras-chave: HIV; Fatores de risco; Adolescente; Adulto jovem.

Resumen

Se trata de un protocolo de revisión sistemática, cuyo objetivo es identificar y analizar los factores de riesgo de infección por el VIH entre los jóvenes. La revisión se realizará mediante los siguientes pasos: elaboración de la pregunta de investigación, búsqueda de publicaciones relevantes, selección de estudios encontrados, extracción de datos, análisis y síntesis de evidencias. La pregunta guía se creó a partir de la estrategia PEO (persona, exposición y resultado - outcome): "¿Cuáles son los factores de riesgo (E) de infección por VIH (O) entre los jóvenes (P)?" Para la búsqueda bibliográfica se utilizarán vocabularios controlados y libres que aborden la cuestión a investigar. Se realizarán búsquedas en siete bases de datos de literatura científica y una base de datos de literatura gris, además de una búsqueda manual de artículos. Los resultados obtenidos serán exportados al software Rayyan QCRI, permitiendo la exclusión de materiales duplicados y la lectura de títulos y resúmenes por dos revisores de forma independiente. Se incluirán en el estudio estudios observacionales-analíticos que aborden los factores de riesgo asociados con la infección por VIH entre los jóvenes, y los incluidos se leerán en su totalidad para garantizar su aplicabilidad al estudio. Los datos encontrados se extraerán a través de un formulario estructurado y luego se enviarán a una síntesis narrativa y metanálisis, si es posible. Los estudios también serán sometidos a una evaluación de calidad metodológica y finalmente se analizará la calidad de la evidencia.

Palabras clave: VIH; Factores de riesgo; Adolescente; Adulto joven.

1. Introduction

HIV infection represents a public health challenge, since, of the estimated 38 million people living with HIV in the world in 2019, only 25.4 million had access to antiretroviral treatment and 1.7 million new cases were reported (UNAIDS, 2020). Despite a 23% decrease in recent HIV diagnoses since 2010, global data indicate that 87% of new cases were in the age group between 15 and 49 years of age in 2019, with 19% of them in young people aged 15 to 24 years (UNAIDS, 2020).

Among the hypotheses raised to increase the vulnerability of young people to HIV, the barriers to access to education and health actions, use of licit and illicit drugs, early initiation of sexual practices and non-use of male and female condoms stand out (Le et al., 2016; Flores et al., 2018; Williams et al., 2020), demanding an intensification in the offer of strategies aimed at health promotion and prevention of HIV transmission for this population (Brazil, 2018; Ssekamatte et al., 2020).

Understanding demographic, behavioral and socio-structural elements that make young individuals vulnerable to HIV infection provide opportunities for more specific health practices (Parkhurst, 2014; Naidoo et al., 2014; Lenzi et al, 2018) and that are not restricted to the distribution of condoms and that consider the individual and collective needs of this population group (UNAIDS, 2017).

Considering the global HIV detection rate among young people aged between 15 and 24 (UNAIDS, 2020), this article presents the systematic review protocol, whose objective is to identify and analyze risk factors for HIV infection among this population. It is noteworthy that the protocol was registered in PROSPERO (CRD42021276566) and that, in a preliminary search on this database, no similar protocol was found, demonstrating the importance and originality of the review on the subject in question.

2. Methodology

This is a systematic review protocol, developed in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) (Moher et al., 2015; Shamseer et al., 2015) recommendations, as well as the "Methodological Guidelines: elaboration of a systematic review and meta-analysis of comparative observational studies on risk and prognostic factors" steps, prepared by the Ministry of Health (Brazil, 2014). A systematic review was chosen, since it allows gathering and assessing the data obtained individually and publishing the evidence found on a particular area of interest, in order

to collaborate with decision-making and the construction of knowledge in the face of an elaborated question (Donato & Donato, 2019).

Thus, this protocol will detail what was and/or will be done in the following stages of the study: definition of research question; definition of eligibility criteria for selection of primary studies; selection of databases; search for eligible studies; screening of articles found by reading titles and abstracts; full reading of studies selected in previous stage; assessment of study eligibility; data extraction; methodological quality assessment of included studies; synthesis of results and quality of evidence assessment (Brazil, 2014).

To elaborate the guiding question “What are the risk factors for HIV infection among young people and adolescents?”, the acronym PEO was used, which was structured as follows: Population (P) corresponding to young people; Exposure (E) to risk factors; and Outcome (O) to HIV infection.

For study selection, primary studies or gray literature were included, which tested the hypothesis of the existence of some risk factor for HIV infection among young people. As a result, it is intended to include observational-analytical studies in the review, regardless of the country in which it was carried out. It is understood by young people, adolescents and young adults aged between 15 and 24 years (Brazil, 2010; United Nations, 1986). Thus, studies that include people in the other age groups (0 to 14 years and 25 years or older) will be excluded.

For bibliographic search, MEDLINE (Medical Literature Analysis and Retrieval System Online), Embase (Excerpta Medica Database), Scopus (SciVerse Scopus), LILACS (Latin American and Caribbean Literature in Health Sciences) and Web of Science databases will be used. For searching gray literature, it will be carried out with Google Scholar. The keywords and descriptors used for the search were identified in the Descriptors in Health Science (DeCS), Medical Subject Headings (MeSH) and Emtree, as well as by previous searches in the literature. The search strategies will be adapted for each database using Boolean operators OR and AND (Brazil, 2014), as shown in Chart 1. In the search, language limits will not be used, however, the filters will apply: publication period from 2012 to 2021 in all databases and Google Scholar; and type of publication (article, conference article, review, systematic review, meta-analysis), except LILACS and Google Scholar.

Chart 1. Article search strategies used to carry out a systematic review on risk factors for HIV infection among young people, Ribeirão Preto, SP, Brazil, 2021

Databases	Vocabulary found/free vocabulary
MEDLINE	((“hiv”[MeSH Terms] OR “hiv”[All Fields] OR “Human immunodeficiency virus”[All Fields] OR “Human immunodeficiency virus”[All Fields] OR “Acquired Immune Deficiency Syndrome virus”[All Fields] OR “Acquired Immune Deficiency Syndrome virus”[All Fields] OR “AIDS virus”[All Fields]) AND (“Risk Factors”[MeSH Terms] OR “risk factor*”[All Fields] OR “predictive factor*”[All Fields] OR “predictor*”[All Fields] OR “associated factor*”[All Fields]) AND (“Young Adult”[MeSH Terms] OR “Adolescent”[MeSH Terms] OR “young adult*”[All Fields] OR “Young people”[All Fields] OR “young person*”[All Fields] OR “Young men”[All Fields] OR “Young women”[All Fields] OR “Young population”[All Fields] OR “youngster*”[All Fields] OR “prime adult*”[All Fields] OR “youth*”[All Fields] OR “adolescent*”[All Fields] OR (“adolescences”[All Fields] OR “adolescence”[All Fields] OR “Adolescent”[MeSH Terms] OR “Adolescent”[All Fields] OR “adolescence”[All Fields] OR “adolescents”[All Fields] OR “adolescent s”[All Fields]) OR “teenager*”[All Fields] OR (“Adolescent”[MeSH Terms] OR “Adolescent”[All Fields] OR “teenage”[All Fields] OR “teenager”[All Fields] OR “teenagers”[All Fields] OR “teenaged”[All Fields] OR “teenager s”[All Fields] OR “teenages”[All Fields]) OR “teen*”[All Fields]))
LILACS	((“Young adult*” OR “Young people” OR “Young person*” OR “Young men” OR “Young women” OR “Young population” OR Youngster* OR “Prime adult*” OR Youth* OR Adolescent* OR Adolescence OR Teenager* OR Teenage OR Teen* OR Jovem OR Jovens OR Adolescente* OR Adolescência OR Juventude OR Joven* OR Juventud) AND (HIV OR “Human immunodeficiency virus” OR “Human immuno deficieny virus” OR “Acquired Immune Deficiency Syndrome virus” OR “Acquired Immunodeficiency Syndrome virus” OR “AIDS virus” OR VIH OR “Virus da AIDS” OR “Virus da Imunodeficiência Humana” OR “Virus de Imunodeficiência Humana” OR “Virus de Imunodeficiencia Humana” OR “Virus de la Inmunodeficiencia Humana” OR “Virus del SIDA”) AND (“Risk Factor*” OR “Predictive Factor*” OR Predictor* OR “Associated factor*” OR “Fatores de Risco” OR “Factores de riesgo” OR “Fator de risco” OR “Fator preditivo” OR “Fatores preditivos” OR Preditor* OR “Fator associado” OR “Fatores associados” OR “Factor de riesgo”))
Embase	((‘young adult’ OR adolescent OR ‘young adult*’ OR ‘young people’ OR ‘young person*’ OR ‘young men’ OR ‘young women’ OR ‘young population’ OR youngster* OR ‘prime adult*’ OR youth* OR adolescent* OR adolescence OR teenager* OR teenage OR teen*) AND (hiv OR ‘human immunodeficiency virus’ OR ‘human immuno deficieny virus’ OR ‘acquired immune deficiency syndrome virus’ OR ‘acquired immunodeficiency syndrome virus’ OR ‘aids virus’) AND (‘risk factor’ OR ‘risk factor*’ OR ‘predictive factor*’ OR predictor* OR ‘associated factor*’))
Scopus	(TITLE-ABS-KEY (“Young adult*” OR “Young people” OR “Young person*” OR “Young men” OR “Young women” OR “Young population” OR youngster* OR “Prime adult*” OR youth* OR adolescent* OR adolescence OR teenager* OR teenage OR teen*) AND TITLE-ABS-KEY (hiv OR “Human immunodeficiency virus” OR “Human immuno deficieny virus” OR “Acquired Immune Deficiency Syndrome virus” OR “Acquired Immunodeficiency Syndrome virus” OR “AIDS virus”) AND TITLE-ABS-KEY (“Risk Factor*” OR “Predictive Factor*” OR predictor* OR “Associated factor*”))
Web of Science	“Young adult*” OR “Young people” OR “Young person*” OR “Young men” OR “Young women” OR “Young population” OR Youngster* OR “Prime adult*” OR Youth* OR Adolescent* OR Adolescence OR Teenager* OR Teenage OR Teen* (Tópico) and HIV OR “Human immunodeficiency virus” OR “Human immuno deficieny virus” OR “Acquired Immune Deficiency Syndrome virus” OR “Acquired Immunodeficiency Syndrome virus” OR “AIDS virus” (Tópico) and “Risk Factor*” OR “Predictive Factor*” OR Predictor* OR “Associated factor*” (Tópico)
Google Scholar (Two strategies will be used)	“young people” “risk factor for HIV” “young people” “risk factors for HIV”

Source: Prepared by the authors.

Citations found in the databases will be exported to the Qatar Computing Research Institute Rayyan Systematic Review application QCRI (Ouzzani et al., 2016). Then, duplicate publications will be excluded so that titles and abstracts can be read by two independent reviewers. If there is doubt or disagreement between reviewers regarding the inclusion of any material, a third reviewer will be consulted. To confirm the inclusion of selected articles, all eligible articles will be read in full.

The entire search and eligibility process of the materials found and included will also be presented in a flow diagram, as recommended by the PRISMA (Page et al., 2021).

Data extraction will take place through a standardized form, in which an independent pair of trained reviewers will compare the results obtained and, in case of disagreement, a third reviewer will be contacted. The data extraction form was prepared according to items suggested by The Joanna Briggs Institute for extracting data from systematic reviews of etiology

and risk (Moola et al., 2020), which are: authors; year of publication; journal name; study objective; kind of study; study site; population and characteristics of study sample; procedures performed in the recruitment of subjects; duration of study and follow-up; exposure factors (independent variables); dependent variables; data analysis; adjustment for confounders; study results and comments. If necessary, the authors of the articles will be contacted for the purpose of requesting missing or additional data regarding any stages of the studies.

The methodological quality of all articles included in this review will be assessed using the instruments recommended by The Joanna Briggs Institute for each type of study performed (Moola et al., 2020), through which it will be possible to identify the number of items addressed in the studies according to the number of items provided by the instruments.

The articles included will be submitted to a narrative synthesis and, if possible, to a quantitative synthesis (meta-analysis). Finally, the GRADE system (Grades of Recommendation, Assessment, Development and Evaluation) will be used to grade the quality of evidence.

It is noteworthy that from the completion of the steps of this protocol, the data will be inserted and updated in PROSPERO database, in order to ensure transparency of this systematic review and use the platform as a safe repository of results found.

3. Expected Results

This systematic review aims to identify the main risk factors related to HIV infection among the young population, whose production of social and health responses is anchored in the proposition of innovative strategies aimed at reducing virus transmission, including the perspective of actions in intersectoral health for HIV prevention and control.

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