






Health literacy, risk behaviors, and sexually transmitted infections among adults: a scoping review

Letramento em saúde, comportamentos de risco e infecções sexualmente transmissíveis em adultos: revisão de escopo

How to cite this article:

Silva SPP, Silva BM, Porto CF, Viegas SMF, Cortes VF. Health literacy, risk behaviors, and sexually transmitted infections among adults: a scoping review. Rev Rene. 2026;27:e96445. DOI: <https://doi.org/10.36517/2175-6783.20262796445>

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Conflict of interest: the authors have declared that there is no conflict of interest.

EDITOR IN CHIEF: Ana Fatima Carvalho Fernandes 

ASSOCIATE EDITOR: Francisca Diana da Silva Negreiros 

ABSTRACT

Objective: to map the relationship between health literacy, risk behaviors, and the occurrence of sexually transmitted infections in adults. **Methods:** scoping review, with searches in seven databases, without time restriction. **Results:** a total of 23,572 records were identified, 27 articles composing the final sample after screening according to eligibility criteria. A predominance of cross-sectional studies was observed, along with a concentration of evidence on HIV infection. Findings indicate that lower health literacy levels are associated with gaps in knowledge regarding sexually transmitted infections, as well as the persistence of misconceptions and stigmatizing attitudes. Moreover, sociodemographic and economic factors were identified as elements influencing health literacy levels and the adoption of protective behaviors. **Conclusion:** the evidence highlights the relevance of health literacy in relation to sexual risk behaviors, indicating that insufficient literacy levels may contribute to greater vulnerability to sexually transmitted infections. **Contributions to practice:** the findings support educational actions and care strategies, contributing to the strengthening of health literacy, the qualification of care practices, and the improvement of prevention actions. **Descriptors:** Health Literacy; Knowledge; Sexually Transmitted Diseases; Health Risk Behaviors.

RESUMO

Objetivo: mapear a relação entre o letramento em saúde, comportamentos de risco e ocorrência de infecções sexualmente transmissíveis em adultos. **Métodos:** revisão de escopo, com busca em sete bases de dados, sem recorte temporal. **Resultados:** foram identificados 23.572 registros, dos quais 27 artigos compuseram a amostra final após triagem pelos critérios de elegibilidade. Observou-se a predominância de estudos com delineamento transversal e concentração de evidências sobre a infecção pelo HIV. Os achados indicam que níveis reduzidos de letramento em saúde estão relacionados a lacunas no conhecimento sobre as infecções sexualmente transmissíveis, além da persistência de crenças equivocadas e atitudes estigmatizantes. Ademais, fatores sociodemográficos e econômicos foram apontados como elementos que influenciam o nível de letramento em saúde e a adoção de comportamentos protetores. **Conclusão:** as evidências destacam a relevância do letramento em saúde na relação com comportamentos sexuais de risco, indicando que níveis insuficientes de letramento podem contribuir para maior vulnerabilidade às infecções sexualmente transmissíveis. **Contribuições para a prática:** os achados subsidiam ações educativas e estratégias de cuidado, contribuindo para o fortalecimento do letramento em saúde, para a qualificação das práticas assistenciais e para o aprimoramento das ações de prevenção. **Descritores:** Literacia para a Saúde; Conhecimento; Infecções Sexualmente Transmissíveis; Comportamentos de Risco à Saúde.

Introduction

Sexually transmitted infections (STIs) are caused by viruses, bacteria, or other microorganisms and represent a major public health challenge worldwide⁽¹⁻²⁾. Their high transmissibility is associated mainly with sexual risk behaviors, nonuse of barrier protective methods, and vertical transmission⁽²⁾. Worldwide, STIs infect one million people per day, and incidence reaches 4.5 million per year. Despite scientific advances, most global targets for control by 2020 were not achieved⁽³⁾.

In Brazil, the foundations for the prevention, diagnosis, and treatment of STIs are well established. However, epidemiological indicators still do not show satisfactory results⁽¹⁾. Moreover, even in view of the acknowledged underreporting of cases, studies indicate that factors such as low health literacy, sexual risk behaviors, younger age, low schooling⁽⁴⁾, and difficulty accessing reliable information⁽⁵⁾ contribute to the persistence of these infection rates⁽⁴⁾.

Health is influenced by individual and behavioral characteristics, as well as by social, economic, and environmental factors that permeate the lives of individuals and communities. In this context, elements such as literacy, beliefs, and social norms influence how people understand health information and make care-related decisions, posing challenges for addressing complex public health problems, such as STIs⁽⁶⁻⁷⁾.

In this context, health literacy is defined as a set of personal skills, within the spectrum of literacy and numeracy, that enables individuals to obtain, understand, evaluate, and apply health information⁽⁷⁾.

Unlike health knowledge, understood as possession of information about a given condition, literacy is a broader construct, within which individuals become aware of issues related to the health-disease process and actively participate in decision-making aimed at individual and collective health⁽⁸⁾.

Individual health literacy has a positive impact on reducing sexual risk behaviors and improving self-care management. Adequate levels support actions for health promotion, prevention, and recovery⁽⁶⁾, as

well as favor more protective individual attitudes and behaviors regarding STIs⁽⁹⁾. However, studies mainly focus on the relationship between health literacy and HIV infection, to the detriment of examining this construct in other STIs relevant to public health, which limits scientific and social understanding of its influence in the broader context of these infections⁽¹⁰⁾.

In this context, fragility is evident. Examining the extent of the interrelationship among health literacy, sexual risk behaviors, and the occurrence of STIs broadens understanding of this complex topic and supports more effective response actions⁽⁴⁾.

Given the above, the present study was guided by the following research question: what is the relationship among health literacy, risk behaviors, and the occurrence of STIs in adults?

The objective was to map the relationship between health literacy, risk behaviors, and the occurrence of sexually transmitted infections in adults.

Methods

Type of study

This is a scoping review. The methodology recommended by the Joanna Briggs Institute, aimed at investigating, expanding, and mapping the literature⁽¹¹⁾, was used to capture the scientific evidence on the topic under study.

The methodological process comprised the following stages: 1) definition of the research question; 2) establishment of study eligibility criteria; 3) development of the search strategy; 4) selection of evidence sources, including the definition of databases to be consulted; 5) screening and selection of identified evidence through analysis of titles, abstracts, and full-text reading; 6) data extraction from included studies; 7) analysis and synthesis of the evidence found; and 8) presentation and interpretation of the results⁽¹¹⁾.

The study was prepared in accordance with the Preferred Reporting Items for Systematic Reviews and MetaAnalyses extension for Scoping Reviews (PRIS-

MASCR) checklist and with the research protocol registered in the Open Science Framework database, available at the link (<https://osf.io/vpjaq/>).

Data collection and search period

The database search was conducted in July 2024. Seven databases were used: Medical Literature Analysis and Retrieval System Online (MEDLINE), via PubMed, Web of Science, SCOPUS, *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS), Cochrane Library, Excerpta Medica Database (EMBASE) and CAPES Theses and Dissertations Catalog (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*).

The search strategy was developed using the PCC mnemonic (Population, Concept, Context)⁽¹²⁾. For this review, the population (P) was composed of adults (≥18 years); the concept (C) included health literacy and sexual risk behaviors; and the context (C)

corresponded to sexually transmitted infections. Therefore, the review question was: what is the relationship among health literacy, risk behaviors, and the occurrence of STIs in adults?

The descriptors used in this search were identified in Medical Subject Headings (MeSH) and combined with Boolean operators: ‘Health Literacy’ OR ‘Knowledge’ AND ‘Sexually Transmitted Diseases’ AND ‘Health Risk Behaviors’ NOT ‘Adolescent’. The Boolean operator NOT and the term “Adolescent” were used to focus the review on studies with an adult population, as defined in the eligibility criteria. It is recognized that this choice may have excluded publications with mixed samples (adolescents and adults). However, this criterion was adopted to ensure coherence with the population defined by the PCC framework.

Figure 1 presents the search strategies used in each database, according to the descriptors and Boolean operators defined.

Database	Search strategy
MEDLINE	((("health literacy"[MeSH Terms] OR ("health"[All Fields] AND "literacy"[All Fields]) OR "health literacy"[All Fields] OR ("knowledge"[MeSH Terms] OR "knowledge"[All Fields] OR "knowledge s"[All Fields] OR "knowledgeability"[All Fields] OR "knowledgeable"[All Fields] OR "knowledgeably"[All Fields] OR "knowledges"[All Fields])) AND ("sexually transmitted diseases"[MeSH Terms] OR ("sexually"[All Fields] AND "transmitted"[All Fields] AND "diseases"[All Fields]) OR "sexually transmitted diseases"[All Fields]) AND ("health risk behaviours"[All Fields] OR "health risk behaviors"[MeSH Terms] OR ("health"[All Fields] AND "risk"[All Fields] AND "behaviors"[All Fields]) OR "health risk behaviors"[All Fields])) NOT ("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]))
Web of Science	(Health Literacy) OR (Knowledge) AND (Sexually Transmitted Diseases) AND (Health Risk Behaviors) NOT (Adolescent)
SCOPUS	(TITLE-ABS-KEY (Health Literacy) OR TITLE-ABS-KEY (Knowledge) AND TITLE-ABS-KEY (Sexually Transmitted Diseases) AND TITLE-ABS-KEY (Health Risk Behaviors) AND NOT TITLE-ABS-KEY (Adolescent))
LILACS	Health Literacy OR Knowledge AND Sexually Transmitted Diseases AND Health Risk Behaviors NOT Adolescent
Cochrane Library	(Health Literacy OR Knowledge) AND (Sexually Transmitted Diseases) AND (Health Risk Behaviors) NOT (Adolescent)
EMBASE	(((((Health Literacy) OR (Knowledge)) AND (Sexually Transmitted Diseases)) AND (Health Risk Behaviors))
CAPES Theses and Dissertations Catalog	Letramento em saúde AND Infecções sexualmente transmissíveis

Figure 1 – Search strategies applied in the selected databases. Divinópolis, MG, Brazil, 2025

Inclusion criteria

Some studies were eligible for inclusion if published in full, available free of charge, in English, Spanish, or Portuguese, without time restriction, and addressing the central topic.

Eligible study types included observational studies (crosssectional, cohort, and casecontrol), qualita-

tive studies, and systematic reviews on the topic. Editorials, letters, theoretical essays, experience reports, and opinion articles were excluded as complements. It is important to note that the restriction to openaccess articles was adopted due to budgetary constraints, which may have introduced availability bias. This limitation was considered in the interpretation of the results and explicitly stated in the study limitations section.

Study selection and data processing

Articles that met the inclusion criteria were exported to the Rayyan Systems software. Article reading was performed simultaneously by three researchers to enhance the study’s credibility. Initially, article screening was based on title and abstract reading, and analytical disagreements were resolved by a fourth reviewer. Subsequently, fulltext reading was carried out, crosschecking each article against the eligibility criteria.

Then the data were synthesized to categorize the selected articles according to level of evidence, as outlined in EvidenceBased Practice. The strength of evidence was divided into five levels: Level 1: strong evidence from at least one systematic review of multiple randomized trials. Level 2: strong evidence from at least one randomized controlled trial. Level 3: evidence from well designed studies without randomization, such as timeseries or paired casecontrol studies. Level 4: evidence from well designed nonexperimental or multicenter studies. Level 5: opinions of respected authorities, based on clinical evidence, descriptive studies, or expertcommittee reports⁽¹³⁾.

Although scoping reviews do not require formal

methodological quality assessment, classification by level of evidence was included as a tool to organize the findings, providing a clearer view of the strength and reliability of available evidence and reflecting how the scientific literature has produced studies on this topic.

The process of identification, screening, selection, and inclusion of studies was presented through a flow diagram developed according to the Preferred Reporting Items for Systematic Reviews and MetaAnalyses (PRISMA)⁽¹⁴⁾ guidelines, which describe the flow of information across the different stages of this review.

Results

Initially, the search conducted in the seven abovementioned databases identified a total of 23,572 results, 1,010 of which were duplicates and therefore excluded. After blind reading by the three reviewers, 67 studies were selected for fulltext reading. Of these, 27 articles were included in the final sample.

Figure 2 represents the number of studies identified in this scoping review and the database processing, across the following stages: identification, selection, eligibility, and inclusion.

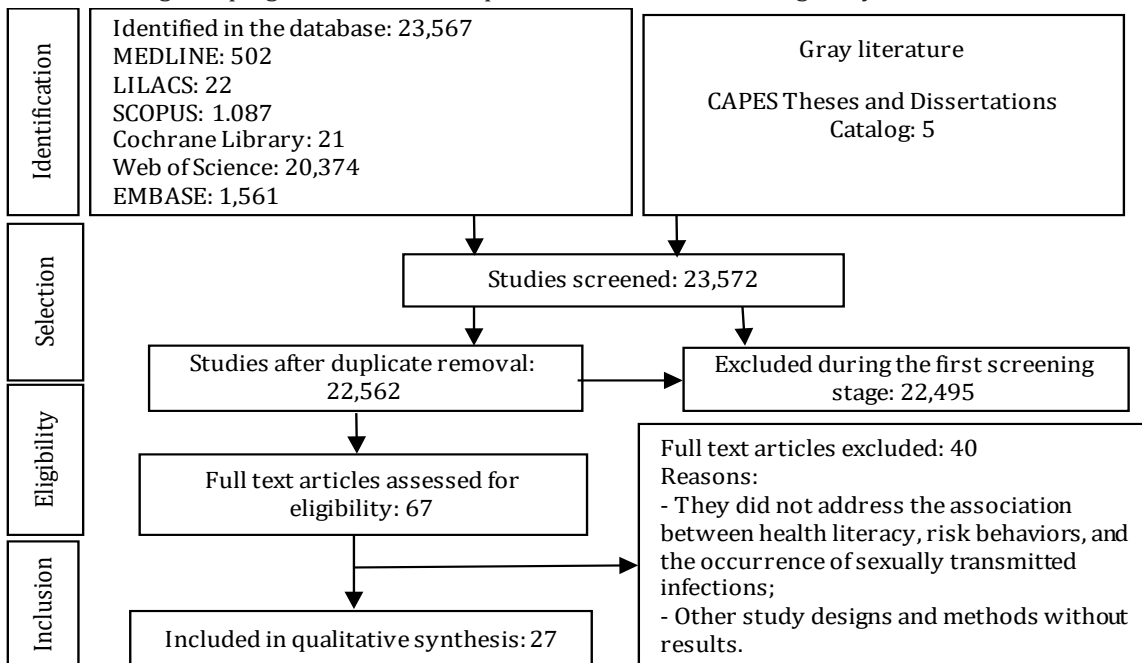


Figure 2 – Flowchart of the study identification, screening, eligibility, and inclusion process, developed according to the PRISMA flow diagram. Divinópolis, MG, Brazil, 2025

The summarized data of the final sample of authors, publication year, country of origin, indexed articles are presented in Figure 3, which shows the database, level of evidence, sample size, and synthesis of findings for each study.

Author, year / Country / Database	Study type / Sample / Level of evidence	Summary of findings
Olivi et al/2008 Brazil SCOPUS	Quantitative study 165 workers Level of evidence 4	The findings indicate gaps in knowledge and underestimated risk perception, associated with inadequate preventive behaviors.
Lotfi et al/2012 Iran MEDLINE	Qualitative study 22 participants Level of evidence 4	Combined personal and socioenvironmental barriers reduce the capacity for negotiating and practicing sexual protection.
Scott-Sheldon et al/2013 South Africa SCOPUS	Quantitative study 820 participants Level of evidence 4	HIV/AIDS testing was associated with greater knowledge about the virus and related to reductions in risk behaviors.
Giuseppe et al/2013 Italy MEDLINE	Crosssectional study 244 participants Level of evidence 4	Participants correctly identified the routes of transmission and prevention of HIV. However, risk perception varied according to demographic characteristics.
Praça et al/2013 Brazil SCOPUS	Retrospective descriptive study 214 participants Level of evidence 5	Among nursing students, knowledge about HIV/AIDS related to women's health was broad but showed variation in information levels over time.
Sykes et al/2013 United Kingdom MEDLINE	Conceptual analysis 32 included articles Level of evidence 5	A conceptual study defining critical health literacy as a construct integrating cognitive and social skills that influence personal decisionmaking.
Grin et al/2013 United States MEDLINE	Quantitative study 100 participants Level of evidence 4	Low knowledge about acute HIV infection, with many participants unable to recognize its signs and implications for transmission in the early stage.
Zou et al/2014 China SCOPUS	Crosssectional study 937 participants Level of evidence 4	The sample showed low knowledge about HIV/AIDS, high prevalence of stigma, and sexual risk behaviors.
Liao et al/2015 China MEDLINE	Crosssectional study 1,230 participants Level of evidence 4	Bisexual behaviors and low knowledge about HIV/AIDS were associated with stigmatizing attitudes and greater sexual risk, whereas higher knowledge was related to more consistent condom use.
Alimohammadi et al/2016 Iran SCOPUS	Descriptive crosssectional study 120 participants Level of evidence 4	Use of traditional media and WhatsApp was associated with greater knowledge, whereas risk behaviors and female gender correlated with lower knowledge.
Kuete et al/2016 China SCOPUS	Quantitative study 234 participants Level of evidence 4	The study found significant differences in knowledge, attitudes, and behaviors related to HIV/AIDS and STIs, influenced by sociodemographic factors and sexual practices.
Ma et al/2016 China EMBASE	Crosssectional study 617 participants Level of evidence 4	13.7% of men with HIV older than 50 years reported highrisk sexual behavior in the past year, with greater risk associated with low educational levels.
Santos et al/2018 Brazil SCOPUS	Descriptive crosssectional study 75 participants Level of evidence 4	Despite high knowledge about STIs (98.6%), attitudes and sexual practices were inadequate, revealing a mismatch between knowledge and behavior.
Nguyen et al/2019 Vietnam MEDLINE	Crosssectional study 300 participants Level of evidence 4	General knowledge about HIV was high, yet misconceptions about transmission routes and persistence of risk behaviors were observed.
Guimarães et al/2019 Brazil MEDLINE	Crosssectional study 4,176 participants Level of evidence 4	In 12 Brazilian cities, only 23.7% presented high levels of knowledge about HIV/AIDS, and sociodemographic factors were positively associated with knowledge.
Paschen-Wolff et al/2020 United States MEDLINE	Descriptive qualitative study 22 participants Level of evidence 4	Stigmatizing attitudes toward STIs were common, and condom use was inconsistent, especially among young people and individuals with lower schooling.
Duteil et al/2021 France MEDLINE	Observational crosssectional study 2,002 participants Level of evidence 4	Although there was general awareness about HIV and transmission routes, gaps in specific knowledge remained, particularly regarding transmission and postexposure prophylaxis.

(The Figure 3 continue in the next page...)

Author, year / Country / Database	Study type / Sample / Level of evidence	Summary of findings
Sherafat-Kazemzadeh et al/2021 South Africa MEDLINE	Crosssectional study 113,023 women Level of evidence 4	Greater knowledge about HIV was associated with more protective behaviors, yet poverty and lack of agency reduced or nullified this effect.
Pullen et al/2021 United States MEDLINE	Quantitative study 165 participants Level of evidence 4	In South African communities, knowledge about HIV/AIDS varied widely and was frequently associated with age, educational level, and access to information.
Vakilian/2021 Iran EMBASE	Crosssectional study 1,500 participants Level of evidence 4	Among Iranian university students, although more than 90% had heard of HIV, knowledge about its symptoms and other STIs was unsatisfactory.
Zhou et al/2022 China MEDLINE	Crosssectional study 300 participants Level of evidence 4	A low proportion underwent HIV testing after highrisk behaviors, with "selfperceived luck" being the main reason for not testing.
Ferreira et al/2022 Brazil MEDLINE	Crosssectional study 2,552 participants Level of evidence 4	Development and validation of abbreviated versions of an instrument to assess HIV/AIDS knowledge among sexual and gender minorities in Brazil.
Jiao et al/2022 China MEDLINE	Crosssectional study 2,022 participants Level of evidence 4	Factors associated with testing differed between groups, indicating the need to identify highrisk subgroups with low testing uptake for targeted actions.
Xu et al/2023 China MEDLINE	Crosssectional study 168 participants Level of evidence 4	Men who have sex with men presented inadequate levels of knowledge about hepatitis C and predominantly negative attitudes.
Bano et al/2023 Pakistan MEDLINE	Sociological analysis 20 participants Level of evidence 5	Condom use was frequently inconsistent among transgender sex workers, influenced by individual and contextual factors.
Sul et al/2023 Portugal MEDLINE	Quantitative study 47 participants Level of evidence 4	Implementation of a communitybased HIV/STI prevention program grounded in health literacy.
Al-Gburi et al/2023 Iraq SCOPUS	Crosssectional study 823 participants Level of evidence 4	Although general knowledge about HIV/STIs was moderate to high, significant gaps and misconceptions about the specifics of these infections persisted.

HIV/AIDS: human immunodeficiency virus/acquired immunodeficiency syndrome; STIs: sexually transmitted infections

Figure 3 – Description of the included studies: title, publication year, country of origin, study type, number of participants, level of evidence, and synthesis of findings (n=27). Divinópolis, MG, Brazil, 2025

The temporal analysis of the publications shows that 14 studies (52%) were published between 2019 and 2023, 6 (22%) between 2014 and 2018, and 7 (26%) between 2008 and 2013. Regarding the types of studies included in this sample, there were cross-sectional (n=22), qualitative (n=2), sociological analysis (n=1), retrospective descriptive (n=1), and conceptual analysis (n=1). This picture indicates that most of the available evidence on this topic stems from observational studies, which limits more robust inferences about the relationships among health literacy, sexual risk behaviors, and the occurrence of STIs.

Overall, the findings indicate that lower levels of health literacy are associated with gaps in knowledge about transmission routes, prevention, and diag-

nosis of STIs, as well as the persistence of misconceptions and stigmatizing attitudes.

Another recurring aspect identified in the studies was the discrepancy between knowledge and behavior, in which individuals who demonstrated adequate knowledge about preventive measures still maintained sexual risk behaviors. Moreover, socio-demographic factors, such as age, educational level, access to information, and socioeconomic conditions, were frequently identified as elements influencing both health literacy levels and the adoption of protective behaviors.

In addition, a strong concentration of investigations on HIV infection was observed, even though the scope of this review encompasses STIs more broadly.

Most of the analyzed studies, corresponding to 51% of the sample, presented HIV/AIDS as the central focus of their analyses. Although other STIs were also mentioned, they were explored in a secondary way in most investigations.

The findings of the included studies revealed different elements related to health literacy that intersect with sexual risk behaviors and vulnerability to

the occurrence of STIs. Furthermore, these studies also presented strategies for addressing these vulnerabilities, which were summarized in this review to support actions for promotion, prevention, and care on this topic within public health.

Figure 4 synthesizes the main elements identified in the literature and the possible strategies for addressing them.

Health literacy, risk behaviors, and vulnerability to STIs*	Suggested strategies in the literature
Relationship between schooling and health literacy: the premise that higher educational level corresponds to higher health literacy ⁽¹⁵⁾ .	Assessing the population's educational level and, concomitantly, the possible gaps in health literacy ⁽¹⁵⁾ .
Lack of knowledge about STIs associated with stigma and discrimination ⁽¹⁶⁾ .	Combatting prejudice through knowledge promotion actions on the actual transmission routes of STIs ⁽¹⁷⁾ .
Limited access to comprehensible educational materials ⁽¹⁸⁾ .	Ongoing and comprehensive programs promoting accessible STI-related knowledge, offering clear and concise information ⁽¹⁸⁾ .
Misinformation about preventive methods (e.g., condoms) ⁽¹⁹⁾ .	School-based sexual education strategies to raise awareness before the onset of sexual activity ⁽¹⁵⁾ .
Difficulty in recognizing STI signs and symptoms ⁽³⁾ .	Expanding access to health services and strengthening the promotion of symptomatic counseling and early voluntary rapid testing ⁽³⁾ .
False beliefs about STIs and unreal popular knowledge ^(16,18-19) .	Behavioral and targeted interventions aimed at social groups, designed to expand knowledge and demystify misconceptions ⁽⁸⁾ .
Sociodemographic characteristics: younger age, non white race, lower educational level, more vulnerable social classes, and gender ^(4,16-17,20-21) .	Personalized educational campaigns tailored to population-specific health needs and characteristics ^(10,18) .
High volume of varied information about STIs on the internet ⁽⁵⁾ .	Critical health literacy and the ability to interpret information for health-related application ⁽⁸⁾ .
Stigma, shame, and taboos related to seeking sexual health care ⁽²²⁾ .	Training health professionals to provide welcoming and confidential care ⁽²³⁾ .

*STIs: sexually transmitted infections

Figure 4 – Description of the elements related to health literacy, sexual risk behaviors, and the occurrence of sexually transmitted infections, and the strategies for addressing them suggested in the literature. Divinópolis, MG, Brazil, 2025

Discussion

Health literacy related to STIs is influenced by the various information sources accessed throughout life stages. In childhood and adolescence, the family plays an important role in health literacy and is often regarded as the primary source of information⁽²⁴⁾. Later, the school environment represents a potential setting in which sexual education could be addressed in basic education, although it faces social resistance⁽²⁰⁾. In adulthood, dissemination of information on STIs long occurred through traditional media such as television and radio⁽²⁵⁾. In the current period, with the

advent of globalization, the internet has become the main source of health information, especially through websites, blogs, and social media⁽²⁾. However, the high volume of varied information may hinder the development of an integrated understanding of topics related to STIs⁽⁵⁾.

Health literacy has been identified in the literature as a relevant element in decisionmaking about STI prevention⁽²⁶⁾. Some studies suggest a relationship between literacy levels and the adoption of protective measures^(17,19,21), such as regular condom use⁽²¹⁾, frequent screening tests, reduction of sexual risk behaviors⁽²⁶⁾ and decreased stigma toward STIs through

knowledge of transmission routes⁽¹⁷⁾. Supporting this relationship, a South African study showed that greater knowledge about HIV transmission and prevention was associated with lower risk sexual behaviors and negative serology for the disease⁽²⁷⁾.

Nevertheless, although knowledge is frequently highlighted as a relevant factor, it is not sufficient on its own to ensure adoption of such protective measures. Health literacy cannot be considered, in isolation, as an indicator of preventive behaviors, since health-related decisions depend on the capacity to understand, evaluate, and apply information individually in different contexts^(17,21,28). In this sense, a frequent misalignment is observed between knowledge and practice, in which subjective awareness of preventive measures for STIs does not necessarily translate into their daily adoption⁽²⁵⁾.

Evidence indicates that higher levels of schooling are often related to greater knowledge about STIs and lower engagement in risk behaviors, which may be linked to greater access to consistent health information and, as a result, to less negative attitudes⁽²⁸⁻³⁰⁾.

However, this relationship is not consistent across all contexts. An individual with high formal educational attainment may still experience difficulties applying this knowledge for the benefit of personal health⁽⁷⁾. Supporting this, a Chinese study found that STI-related literacy was limited among medical students, showing that inadequate knowledge about these infections can occur even in social groups with high educational levels^(15,31).

Sociodemographic characteristics of individuals are associated with levels of STI-related literacy. Younger people, individuals of non-White race, those with lower educational level, more vulnerable social classes, and residents of rural areas tend to show lower levels of knowledge^(4,16-17,21), which may contribute to greater vulnerability to infection⁽²¹⁾.

Beyond the individual dimensions related to knowledge and health literacy, the studies indicate the influence of structural factors on vulnerability to STIs. Evidence suggests that, although literacy about these

infections is related to safer preventive behaviors, its effects may be limited in contexts of poverty, greater social vulnerability, and restricted autonomy^(4,17,21). In these circumstances, even when knowledge is present, structural barriers may hinder its translation into preventive practices⁽²¹⁾.

Consistently, other studies in this review emphasize that changes in sexual behaviors depend not only on access to information but also on broader social determinants, including socioeconomic inequalities, stigma, and discrimination, which shape vulnerability to STIs^(17,32). These findings reinforce the need to understand health literacy within the social and structural conditions in which individuals are embedded^(4,16-17,21).

Gender-related dimensions also influence STI-related literacy. Men tend to report greater knowledge about infections that are more symptomatic in the male population, such as gonorrhea, whereas women show greater familiarity with human papillomavirus (HPV), due to its higher prevalence in women⁽²⁰⁾. Within this gender spectrum, women also present higher STI-related literacy compared with men, which may be related to greater use of health services and higher interest in accessing health information⁽³²⁻³³⁾.

In the social context of health literacy, false beliefs about STIs stand out, grounded in unreal popular knowledge and broadly disseminated across cultures. These include misconceptions about transmission routes, such as through food, objects, mosquitoes, swimming pools, or kissing^(16,18,34); erroneous risk perceptions in sexual practices, such as believing condom use is unnecessary in certain situations⁽¹⁹⁾; and beliefs about partner characteristics, such as assuming no risk with seemingly healthy partners or men who have undergone vasectomy^(25,28).

From a public health perspective, these unreal beliefs are less severe than outright lack of knowledge about STI transmission routes, as they do not directly cause infections. However, they may be associated with lower self-perceived risk, greater propensity for high-risk sexual behaviors, and reduced use of preven-

tive measures^(18,22). Moreover, they contribute to discriminatory and stigmatizing attitudes toward people living with chronic STIs^(10,16), and are reinforced in contexts of weak public health care systems⁽⁴⁾.

In the current global epidemiological picture of STIs, a decline in HIV/AIDS prevalence is observed, whereas the morbimortality of other infections shows an increasing trend⁽³¹⁾. The studies in this review highlighted the historical centrality of HIV in scientific production and public health agendas, which over recent decades mobilized key prevention and response strategies^(4,5,10,16-17,21-22,26-27,29-30,32,34-35). Although these advances have contributed to better control of HIV infection, this focus may reduce the visibility of other STIs relevant to public health, whose control dynamics may likewise depend on sexual behaviors and population health literacy levels, as shown in the available studies^(2,8-9,15,18-20,23-25,28,31,33).

Therefore, although STIs are interconnected, they pose distinct challenges, since each infection has its own historical trajectory, pathologic stages, and level of individual literacy⁽³⁵⁾. For this reason, the heterogeneity of STIs and the specificities of each social group should be considered to broaden awareness of sexual risk behaviors and to strengthen STI-related health literacy⁽³⁴⁻³⁵⁾.

Study limitations

The predominance of cross-sectional studies and those with lower methodological rigor limits the depth of this analysis and highlights the need for more robust investigations.

In relation to the search strategy, the restriction to open access articles may have introduced availability bias. Furthermore, the use of the Boolean operator NOT with the term “Adolescent” may have excluded publications with mixed samples, thereby limiting the understanding of intergenerational dynamics on this topic.

In addition, the predominance of HIV-centered studies suggests thematic bias, which may reduce the

visibility of other STIs and constrain understanding of the relationships between health literacy and sexual risk behaviors in different epidemiological contexts.

Contributions to practice

The findings of this review indicate that health literacy is a central component in the relationship between the adoption of safe sexual behaviors and STI prevention, establishing itself as a strategic axis for health and nursing practice.

The identification of literacy gaps, false beliefs, and limitations in the application of health information reinforces the need for systematic and contextualized educational actions. In this context, strategies suggested in the literature include promoting critical health literacy and STI-related literacy, implementing continuous sexual education programs across age groups, expanding access to counseling and early testing services, and demystifying misconceptions in specific social groups.

Conclusion

The included studies point to a relationship between health literacy, the adoption of sexual behaviors, and vulnerability to sexually transmitted infections, particularly in contexts of insufficient literacy.

Findings indicate that low sexually transmitted infections related literacy may occur even among individuals with high educational levels and that knowledge of preventive measures does not always translate into protective practices, reflecting challenges related to the application of this knowledge. In addition, patterns of gaps in sexually transmitted infections related literacy, misconceptions, and limitations in knowledge application were identified, particularly associated with sociodemographic, cultural, and structural factors such as social inequalities, stigma, and conditions of vulnerability, indicating priority areas for educational interventions and health policies.

Acknowledgements

The authors thank the Research and Innovation ProReitoria (*Pró-Reitoria de Pesquisa e Pós-Graduação*) of the *Universidade Federal de São João del-Rei*, for the funding provided through Edital nº 006/2023.

Authors' contributions

Conception and design or data analysis and interpretation: **Silva SPP, Silva BM, Porto CF, Cortes VF**. Writing of the manuscript or critical review of the intellectual content: **Silva SPP, Silva BM, Porto CF, Viegas SMF, Cortes VF**. Final approval of the version to be published: **Viegas SMF, Cortes VF**. Agreement to be responsible for all aspects of the manuscript related to accuracy or integrity being investigated and resolved appropriately: **Silva SPP, Silva BM, Porto CF, Viegas SMF, Cortes VF**.

Data availability

The authors declare that the data supporting the findings of this study are available within the article. Supplementary data can be requested from the corresponding author if necessary.

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