



Revista de Pesquisa Cuidado é Fundamental Online

ISSN: 2175-5361

carlos.lyra@unirio.br

Universidade Federal do Estado do Rio de Janeiro
Brasil

Petry, Stéfany; Padilha, Maria Itayra; Mazera, Maiara Suelen; Silva, Amina Regina
Populações-chave ao vírus da imunodeficiência humana nos estudos da enfermagem: revisão integrativa

Revista de Pesquisa Cuidado é Fundamental Online,
vol. 16, e-12987, 2024, Janeiro-Dezembro 2025

Universidade Federal do Estado do Rio de Janeiro
Rio de Janeiro, Brasil

DOI: <https://doi.org/10.9789/2175-5361.rpcfo.v16.12987>

Disponível em: <https://www.redalyc.org/articulo.oa?id=505780780075>

- ▶ Como citar este artigo
- ▶ Número completo
- ▶ Mais informações do artigo
- ▶ Site da revista em [redalyc.org](https://www.redalyc.org)

[redalyc.org](https://www.redalyc.org)

Sistema de Informação Científica Redalyc

Rede de Revistas Científicas da América Latina e do Caribe, Espanha e Portugal

Sem fins lucrativos acadêmica projeto, desenvolvido no âmbito da iniciativa
acesso aberto

CUIDADO É FUNDAMENTAL

Escola de Enfermagem Alfredo Pinto – UNIRIO

INTEGRATIVE REVIEW OF LITERATURE

DOI: 10.9789/2175-5361.rpcfo.v16.12987

KEY POPULATIONS FOR HUMAN IMMUNODEFICIENCY VIRUS IN NURSING STUDIES: AN INTEGRATIVE REVIEW

*Populações-chave ao vírus da imunodeficiência humana nos estudos da enfermagem: revisão integrativa**Poblaciones clave para el virus de la inmunodeficiencia humana en estudios de enfermería: una revisión integrativa***Stéfany Petry**¹ **Maria Itayra Padilha**² **Maiara Suelen Mazera**³ **Amina Regina Silva**⁴ 

ABSTRACT

Objective: to highlight the key populations for the human immunodeficiency virus addressed in scientific nursing studies. **Methods:** integrative literature review carried out in the National Library of Medicine, National Institutes of Health, Scientific Electronic Library Online and Virtual Health Library; in the databases Embase, Cumulative Index to Nursing and Allied Health Literature, Scopus, Web of Science and Literatura Latino-Americana e do Caribe em Ciências da Saúde. **Results:** 1,059 articles were identified, of which 18 were included. The findings were grouped according to the dimensions of vulnerability (individual, social and programmatic). **Conclusion:** the role of nursing in the face of the individual, social and programmatic dimensions of vulnerability was important to identify the specificities of these populations and to understand the aspects that make these individuals vulnerable to HIV/AIDS. There is direct nursing intervention through promotion and prevention actions in order to contribute to good care practices.

DESCRIPTORS: Vulnerable populations; Social vulnerability; HIV; Acquired immunodeficiency syndrome; Nursing;

^{1,2,3} Federal University of Santa Catarina, Santa Catarina, Florianópolis, Brazil.

⁴ Brock University, Ontario, St. Catharines, Canada.

Received: 30/10/2023; Accepted: 13/11/2023; Published online: 24/02/2024

Corresponding Author: Stéfany Petry stefanypetry@hotmail.com

How cited: Petry S, Padilha MI, Mazera MS, Silva AR. Key populations for human immunodeficiency virus in nursing studies: an integrative review. *R Pesq Cuid Fundam* [Internet]. 2023 [cited year month day];16:e12987. Available from:

<https://doi.org/10.9789/2175-5361.rpcfo.v16.12987>



RESUMO

Objetivo: evidenciar as populações-chave ao vírus da imunodeficiência humana abordadas em estudos científicos de enfermagem. **Método:** revisão integrativa da literatura realizada nas bibliotecas *National Library of Medicine*, *National Institutes of Health*, *Scientific Electronic Library Online* e Biblioteca Virtual de Saúde; nas bases de dados *Embase*, *Cummulative Index to Nursing and Allied Health Literature*, *Scopus*, *Web of Science* e Literatura Latino-Americana e do Caribe em Ciências da Saúde. **Resultados:** identificados 1.059 artigos, dos quais 18 foram incluídos. Os achados foram agrupados conforme as dimensões da vulnerabilidade (individual, social e programática). **Conclusão:** o papel da enfermagem diante das dimensões individuais, sociais e programáticas da vulnerabilidade, foi importante para identificar as especificidades dessas populações e para a compreensão dos aspectos que tornam estes indivíduos vulnerabilizados ao HIV/aids. Verifica-se a intervenção direta da enfermagem por meio de ações de promoção e prevenção de modo a contribuir para as boas práticas de cuidado.

DESCRITORES: Populações vulneráveis; Vulnerabilidade social; HIV; Síndrome de imunodeficiência adquirida; Enfermagem;

RESUMEN

Objetivos: resaltar las poblaciones clave para el virus de la inmunodeficiencia humana abordadas en estudios científicos de enfermería. **Método:** revisión integrativa de la literatura realizada en la Biblioteca Nacional de Medicina, Institutos Nacionales de Salud, Biblioteca Científica Electrónica en Línea y Biblioteca Virtual en Salud; en las bases de datos *Embase*, *Cummulative Index to Nursing and Allied Health Literature*, *Scopus*, *Web of Science* y Literatura Latino-Americana e del Caribe em Ciências da Saúde. **Resultados:** se identificaron 1.059 artículos, de los cuales 18 fueron incluidos. Los hallazgos se agruparon según las dimensiones de vulnerabilidad (individual, social y programática). **Conclusión:** el papel de la enfermería frente a las dimensiones individual, social y programática de la vulnerabilidad fue importante para identificar las especificidades de estas poblaciones y comprender los aspectos que tornan a esos individuos vulnerables al VIH/SIDA. Existe intervención directa de enfermería a través de acciones de promoción y prevención para contribuir a las buenas prácticas de cuidado.

DESCRIPTORES: Poblaciones vulnerables; Vulnerabilidad social; VIH; Síndrome de inmunodeficiencia adquirida; Enfermería.

INTRODUCTION

The term vulnerability is considered interdisciplinary and applies to various fields of knowledge. In the area of health, more specifically in epidemiological conceptualization, the term vulnerable populations/key populations refers to individuals who have a higher risk of illness when compared to the rest of the population.¹ Vulnerability is complex, and although it involves socioeconomic and political aspects and cultural hierarchies, social inequities are often pointed to as the greatest cause of vulnerability in health matters, as they can limit access to resources and shape decision-making and behavior in ways that go beyond the ability to control or change.¹⁻²

In this study, we considered vulnerability and its dimensions (social, individual and programmatic).³ Individual vulnerability encompasses the relationship between the degree of information an individual has about health problems and their ability to manage this information, resulting in behaviors that can prevent or favor these problems.³ Social vulnerability highlights the population's profile in terms of access to information, health services, education, material resources, religious beliefs and gender conceptions. Programmatic/institutional vulnerability points to social resources such as public programs and policies aimed at providing comprehensive, universal and humanized care to populations.³⁻⁴

From the perspective of the Human Immunodeficiency Virus/ Human Immunodeficiency Syndrome (HIV/AIDS) issue, the

concept of vulnerability was associated with the epidemic in the 1990s when intervention designs were carried out guided by a focus on comprehensive care and social mobilization processes based on human rights.⁴ The progressive path of changes in perspectives, although not linear, resulted in the paradigmatic construction of vulnerability, in an attempt not only to "overcome" the reading proposed by the epidemiology of risk, but also in the possibility of having a conceptual basis with the capacity to articulate public and private institutions in the comprehensive care and prevention of HIV/AIDS.⁴⁻⁶ Even with technological and treatment advances, HIV/AIDS is still an alarming public health problem. Global statistics show that in 2021 there were 1.5 million HIV infections,⁷ and in Brazil 40,880 cases were reported in the same year.⁸

Nursing has been playing an excellent role in proposing strategies favorable to early diagnosis and in actions to promote, prevent and manage care for people with HIV/AIDS in all its aspects. Thus, in order for actions to be designed and implemented effectively, as well as the formulation of appropriate public policies, it is important to know and understand who the populations in situations of vulnerability to HIV/AIDS are in order to help make decisions and take health actions that benefit these populations.

The aim of this study was to highlight the key human immunodeficiency virus populations addressed in scientific nursing studies.

METHOD

An integrative literature review was carried out in five stages: identifying the problem, searching the literature, analyzing the quality and risk of bias of the data, extracting the data and presenting the synthesis.⁹ To ensure transparency in the reporting of results, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) was also used.¹⁰ The research question was developed using the acronym PICO11, i.e. Population (people with HIV/AIDS), Interest (Key populations for HIV/AIDS) and Context (Brazilian nursing): What are the key populations for the human immunodeficiency virus addressed in Brazilian nursing studies?

An a priori search strategy protocol was drawn up, with the help of a librarian from the Federal University of Santa Catarina (UFSC), for articles published in Portuguese, English and Spanish (Chart 1). The search was carried out in PubMed, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, Web of Science, Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Health Sciences Literature (LILACS), in August 2022.

Chart 1 - Combinations of descriptors and Boolean markers as search strategies in libraries and databases, Florianópolis, SC, Brazil, 2022

Example of a search strategy

("Vulnerable Populations" OR "Vulnerable Population" OR "Underserved Population" OR "Underserved Populations" OR "Underserved Patient" OR "Underserved Patients" OR "Disadvantaged" OR "Sensitive Populations" OR "Sensitive Population") AND ("HIV" OR "Human Immunodeficiency Virus" OR "Human Immunodeficiency Viruses" OR "Acquired Immune Deficiency Syndrome Virus" OR "Acquired Immunodeficiency Syndrome Virus" OR "Human T Cell Lymphotropic Virus Type III" OR "Human T-Cell Lymphotropic Virus Type III" OR "Human T-Cell Leukemia Virus Type III" OR "Human T Cell Leukemia Virus Type III" OR "Lymphadenopathy-Associated Virus" OR "Lymphadenopathy Associated Virus" OR "Lymphadenopathy-Associated Viruses" OR "Human T Lymphotropic Virus Type III" OR "Human T-Lymphotropic Virus Type III" OR "HTLV-III" OR "LAV-HTLV-III" OR "Acquired Immunodeficiency Syndrome" OR "Acquired Immunodeficiency Syndromes" OR "AIDS" OR "Acquired Immune Deficiency Syndrome" OR "Acquired Immuno-Deficiency Syndrome" OR "Acquired Immuno-Deficiency Syndromes" OR "Acquired Immuno Deficiency Syndrome") AND ("Nursing" OR "Nursings" OR "Nurses" OR "Nurse")

The records were exported to the EndNote X9[®] reference manager, where they were organized and duplicates removed, and then imported into the Rayyan Web application to read the titles and abstracts. As for eligibility in relation to the inclusion criteria, these were carried out independently by two reviewers and then the studies were read in their entirety using the double-blind reading technique, and in the event of disagreement, a third reviewer led to consensus.

Original studies were included in their entirety, published in English, Portuguese and Spanish, studies related to HIV/AIDS key populations, carried out in the field of nursing, with at least one nurse author. Quantitative, experimental and quasi-experimental studies, observational studies, case-control studies and qualitative studies were included. Editorials, abstracts, books or book chapters, experience reports, reviews, essays, theses and dissertations were excluded. To extract the results, a tool was created containing: name of author(s), year, country, objective, population, sample, method, main results and conclusions. The data was extracted into a Microsoft Excel spreadsheet.

The data analysis and synthesis stage took place in three phases: first, the articles were sorted and categorized according to their focus.⁹ Next, the data was integrated into qualitative data¹²; and finally, the relevant themes for the review were identified. Using inductive qualitative content analysis, the results were grouped according to the dimensions of vulnerability.³

The included studies were assessed for their methodological quality and relevance using the Mixed Methods Assessment Tool (MMAT).¹³ This tool assesses the "consistency and completeness" of the research, as well as the adequacy and relevance of the evidence to answer the review questions. Two authors assessed the quality and relevance of the 18 studies that made up the final sample, achieving the maximum score in 17 studies. However, all the studies showed quality and relevance to integrate the results. It was therefore decided to keep all the articles for synthesis.

RESULTS

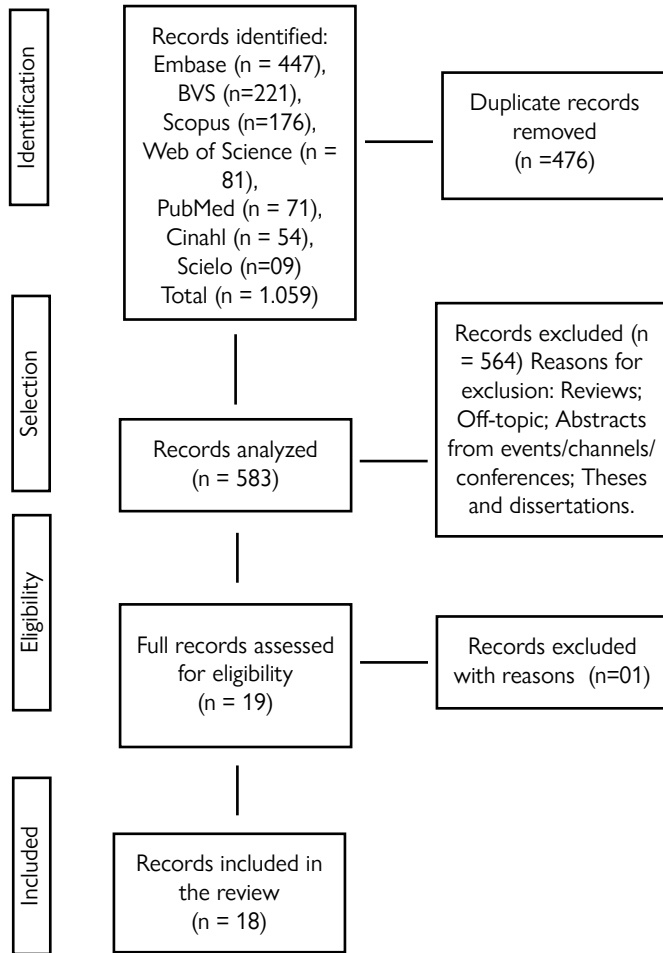
The initial search identified 1,059 studies and after removing duplicates a total of 583 results were obtained for evaluation, of which 18 studies that met the inclusion criteria for the research were included. The article selection process is shown in Figure 1.

The studies were originally published in Portuguese (n=11) and English (n=7). Most of the studies were carried out in Brazil (n=17), followed by the United States (n=1). As for the methodological approach, quantitative (n=11) and qualitative (n=7) studies were identified. After the inductive qualitative content analysis approach, the findings were grouped according to the dimensions of individual vulnerability (Chart 2), social vulnerability (Chart 3) and programmatic vulnerability (Chart 4).

The studies show that the populations in a situation of vulnerability to HIV/AIDS, in accordance with the dimension of individual vulnerability, are women (n=3), the elderly (n=2), men (n=1) and adolescents (n=1). Drug users (n=2), elderly

women (n=1), pregnant women (n=1), HIV-positive women (n=1), the LGBTQIA+ population (n=1), tobacco users (n=1), and schoolchildren (n=1).

Figure 1 - Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews flow diagram of research and literature selection, Florianópolis, SC, Brazil, 2022



As far as social vulnerability is concerned, rural populations (n=1), sugarcane cutters (n=1), gender relations (n=1) and regional inequalities (n=1) stand out.

In the dimension of programmatic vulnerability, the studies show the interactions of individuals with policies and systems, such as access by populations to health services (n=3), the perspective of nurses on vulnerability (n=2), the notification system (n=1) and the formulation of nursing diagnoses in the face of a vulnerable population (n=1).

DISCUSSION

Individual vulnerability encompasses cognitive and behavioral aspects, as well as the relationship between the degree of information that the individual has about health problems and their ability to manage this information in order to put it into practice in their daily lives, resulting in behaviors that can prevent or favor these problems.³ Based on this concept, we are faced with the vulnerability of women - although they were almost invisible at the beginning of the epidemic, there has been a substantial increase in HIV cases in women, especially of reproductive age.³²⁻³³

In line with this review, a study showed an increase in pregnant women with HIV/AIDS aged between 15 and 19, pointing out that the emergence of this disease among adolescents may be linked to several factors: low socioeconomic status, less schooling, and difficulty in accessing Basic Health Units (BHUs). This group is more susceptible to risk situations, such as alcohol and drug use, unplanned pregnancy, violence and STI/HIV/AIDS infections.³⁴ Adolescents are exposed to different forms of risk, making them more susceptible to common vulnerabilities at this stage of life. Early sexual initiation, non-use of condoms and multiple partners are all factors that lead to STIs/HIV/AIDS.^{19, 35-36}

Drug use and abuse promote risk behaviors in injecting drug users undergoing treatment for drug addiction, such as exchanging sex for money and/or drugs, sexual relations with partners diagnosed with STIs and a history of sexual violence.^{18,37}

Chart 2 - Summary of selected studies regarding the individual dimension of vulnerability, Florianópolis, SC, Brazil, 2022

Authors/year	Population/approach	Main results
Brito BMS et al, 2011 ¹⁴	76 women; Semi-structured interview	Incorrect/insufficient knowledge about Pap smears; inadequate frequency of Pap smears; lack of knowledge about immunosuppression and cervical cancer; not having Pap smears after being diagnosed with HIV infection; inconsistent or non-existent use of condoms with sexual partners, whether fixed or not.

Alencar RA, 2015 ¹⁵	11 elderly people; Semi-structured interview	Difficulties: early diagnosis of HIV/AIDS; request for HIV serology as a routine in primary care; diagnosis obtained after exhaustive visits to health services
Bezerra VP et al, 2015 ¹⁶	37 elderly people; Focus Group	Use of condoms and their use; sexual abstinence; lack of knowledge among professionals about the clientele.
Lamblet LCR et al, 2017 ¹⁷	401 Men who have sex with men (MSM); Interview	Rectal douching is common practice; some STIs have been diagnosed, such as hepatitis; chlamydia; human papillomavirus; gonorrhea; rectal gonorrhea; genital herpes; syphilis and HIV.
Guimarães RA et al, 2018 ¹⁸	323 non-injecting drug users; Interview	Vulnerability factors: drug use, exchanging sex for money and/or drugs, sexual relations with partners diagnosed with STIs and injecting drug users (IDUs), and a history of sexual violence.
Costa MIF et al, 2020 ¹⁹	287 schoolchildren aged 11 to 17; Instruments	212 (73.9%) adolescents; 137 (64.6%) were male, aged between 15 and 16, vulnerable to STIs/HIV/AIDS. The environment and living conditions are conditioning factors for STI/HIV/AIDS; 125 (43.55%) of the adolescents were living in poverty.
Scarinci IC et al, 2021 ²⁰	36 PLHIV; Interview	26 were living with HIV, 22% of participants had undergone treatment for other STIs in the last 5 years; the majority of current smokers demonstrated low self-efficacy to quit smoking.

Chart 3 - Summary of selected studies on the social dimension of vulnerability, Florianópolis, SC, Brazil, 2022

Authors/year	Population/approach	Main results
Vernaglia TVC et al, 2017 ²¹	816 crack users; Interview	Female crack users were in a situation of greater social vulnerability than men. They had less schooling; worse working conditions/subsistence; more likely to be unemployed; less income or benefits for their basic needs. They suffered more from violence and had a higher prevalence of HIV; they were more likely to live alone and separated from their children.
Amorim TF et al, 2018 ²²	353 individuals; Interview	22% with symptomatic STIs. Homosexuality as a predictor of STIs, due to risk behaviors.
Melo GC et al, 2020 ²³	102 municipalities; Ecological study	Regional inequalities in living conditions identified. Critical risk areas in terms of HIV incidence. Existence of agglomerations that leave the coastal regions and migrate inland, extrapolating the global index and the current national situation
Soares JP et al, 2020 ²⁴	937 sugarcane cutters; Interview and rapid test	Prevalence of 4.1% for STIs in the rapid test. Positivity for any STI investigated and age, religion, sex with a person of the same sex, alcohol use and illicit drug use were statistically relevant

Chart 4 - Summary of the selected studies in relation to the programmatic dimension of vulnerability, Florianópolis, SC, Brazil, 2022

Authors/year	Population/approach	Main results
Holanda ER et al, 2015 ²⁵	841 notifications of infected pregnant women; Ecological study	Factors such as illiteracy, lack of prenatal care and poverty are relevant to the risk of vertical transmission of HIV, especially in disadvantaged regions.
Silva IR et al, 2015 ²⁶	15 nurses; Semi-structured interview	Detection of adolescents' feelings of invulnerability in the face of sexual relations. Non-adherence to condoms and gender inequalities are also mentioned as adolescent weaknesses.
Alencar RA et al, 2016 ²⁷	11 elderly people, 11 nurses and 12 doctors; Interviews	The elderly person's sex life is ignored during care. Information about prevention measures is only given after HIV/AIDS has been confirmed. Lack of specific training for health professionals at undergraduate and/or postgraduate level.
Santos MCF et al, 2018 ²⁸	53 validated nursing diagnoses; elaboration of diagnoses	Forty-two nursing diagnoses were classified as individual vulnerability, 21 as social vulnerability and 7 as programmatic vulnerability. Of these, 53 were validated and considered useful for clinical nursing practice, favoring professional decision-making.
Lopes LM et al, 2020 ²⁹	56 cases and 112 controls; Interviews	The following issues were highlighted as significant: satisfaction with care, missing scheduled return appointments, appointments with infectious disease doctors, nurses and social workers. The relationship between people living on the streets, the unemployed and/or retired housewives, absences from appointments and non-users of antiretroviral therapy (ART) were more likely to be hospitalized.
Pimenta MC et al, 2022 ³⁰	71 key players; Interview	Professionals raise concerns about the risks involved in switching to combination prevention and the ability of individuals to adhere to the medication.
Santos GM et al, 2022 ³¹	21,795 individuals; Global poll	Consequences of COVID-19: Reduction in PrEP use by almost 12%; problems accessing clinics by 16.2%. People taking ART, around 18.9% indicated that they could not access or receive their medication.

There is concern about the elderly in the articles included in this review due to the fact that HIV/AIDS is not detected early because they are often considered "asexual" by health professionals. The asexuality of the elderly has consequences in the field of public health given the incipient discussions about sexual health and STI prevention at this stage.^{15,38} Although elderly people know about the importance of condoms, they make little use of them since they do not recognize or perceive themselves as vulnerable beings.¹⁶

The role of nursing in relation to the individual dimension of vulnerability is important in identifying the specificities of the key populations identified in the studies, in understanding the aspects that make these individuals vulnerable to HIV/AIDS, as well as in direct intervention through promotion and prevention actions, and in the appropriate management and control of the rates of involvement of these populations.

Social vulnerability is defined according to the characteristics of a person or community, and can affect their ability to anticipate, cope with, repair and recover from the effects of a disaster. Factors such as socioeconomic status, family composition, minority status and access to vehicles,³⁹ are known as the Social Determinants of Health (SDH). The term SDH involves social structures and economic systems, e.g. social environment, physical environment, health services, structural and social factors, which are responsible for most health inequities, including the disproportionate effects of HIV on some populations.¹

Vulnerability has been identified in the rural population and among sugarcane cutters, especially those living in rural settlements and camps, including difficult transportation to health units and the lack/inexistence of them in the most vulnerable territories.^{22,40} The lack of a service weakens the link between professionals and the local reality and reduces the chances of the user being seen on spontaneous demand.⁴¹⁻⁴³ Factors such as age, religion, same-sex relationships, alcohol and drug use are relevant to the acquisition of STIs.²⁴ Social vulnerability also involves the dimension of individual vulnerability, which is structured around gender inequality, where, for example, women lack financial independence and social support.⁴⁴ In a study of crack users, the relationship between crack use and gender characteristics was shown to be a complex issue, with women crack users being more socially vulnerable than men.²¹

Extensive evidence also documents how the interaction between structural factors and social forces, including stigma, discrimination and harmful cultural norms, can frustrate HIV prevention efforts that would otherwise reduce the incidence and prevalence of HIV at a population level.⁴⁵

It is the responsibility of nurses to be aware of the aspects that make these populations key to HIV/AIDS, and not only to act in promotion and prevention actions, but to actively participate in the development of health policies aimed at improving quality of life.

Programmatic vulnerability raises questions about its understanding and operationalization in health services, as well

as whether or not to integrate the social part of the health vulnerability construct,⁴⁶ in line with the findings of this review, which reflect that access to health services can be included in social and/or programmatic vulnerability.

In addition, there is evidence that symbolic violence in STI/AIDS care is an aggravating factor for programmatic vulnerability. Health professionals have a significant responsibility to combat vulnerability and preserve/restore the integrity of individuals. This duty manifests itself, above all, in promoting the interests of individuals in order to reinforce their fundamental rights, based on human dignity and human rights, and to respect their life history.⁴⁷ In order to minimize the effects of programmatic vulnerability, it is up to the nurse, as the person technically responsible, to focus on articulating and proposing individual and collective actions that aim to contemplate the promotion, prevention, diagnosis, treatment, rehabilitation and maintenance of health in the various specificities.

Vulnerability and integrity must be recognized as intrinsically human dimensions.⁴⁷ In order to reduce these negative impacts of inequalities in the context of interdisciplinarity, the technical-scientific progression of professionals must be stimulated from a dialogical perspective, in order to care for socially disadvantaged subjects, enabling horizontal work that favors co-responsibility and timely assistance.

Knowing and being able to identify population groups and their vulnerabilities is part of everyday professional nursing practice. From this perspective, understanding the individual, social and programmatic dimensions of the vulnerability of specific populations to HIV/AIDS helps to draw up public policies aimed at preventing and promoting the health of these populations, as well as helping to intervene in the epidemiological reality of HIV.

The limitations of the study include the use of the term "vulnerable populations" in the search, since historically the names used before this concept were "risk groups" and "risk behaviors", which may influence the number of findings.

FINAL CONSIDERATIONS

Research into population groups and their vulnerabilities is fundamental to understanding the actions needed to intervene in health inequalities. Vulnerability is something structural in an individual, resulting from a combination of socio-economic and demographic aspects, together with access to and supply of public services that help maintain health. Nursing studies on key populations for HIV/AIDS point to specific individuals and groups who need their own policies to reduce these health limitations (gender, age group, sexual orientation and users of illicit substances). This review has provided a differentiated view of women, adolescents, the elderly, as well as those who are vulnerable due to the lack of adequate information, such as the rural population, which is not always placed at the center when HIV/AIDS is discussed.

REFERENCES

1. Hahn RA. What is a social determinant of health? Back to basics. *J Public Health Res.* [Internet]. 2021 [cited 2023 oct 10];10(4). Available from: <https://doi.org/10.4081/jphr.2021.2324>.
2. Smallheer B. Addressing and dismantling inequities of vulnerable populations. *Nurs Clin North Am.* [Internet]. 2022 [cited 2023 oct 10];57(3). Available from: <https://doi.org/10.1016/j.cnur.2022.07.001>.
3. Ayres JR. Vulnerabilidade, Cuidado e integralidade: reconstruções conceituais e desafios atuais para as políticas e práticas de cuidado em HIV/Aids. *Saúde debate* [Internet]. 2022 [acesso em 10 de outubro 2023];46(spe7). Available from: <https://doi.org/10.1590/0103-11042022E714>.
4. Fernandes BA, Rodrigues RAP, Tavares DMS, Haas VJ. Factors associated with the social, individual and programmatic vulnerability of older adults living at home. *Rev Esc Enferm USP.* [Internet]. 2019 [cited 2023 oct 10];53. Available from: <https://doi.org/10.1590/S1980-220X2017050103429>.
5. Silva AFCD, Cueto M. HIV/AIDS, its stigma and history. *Hist ciênc saúde-Manguinhos.* [Internet]. 2018 [cited 2023 oct 10];25(2). Available from: <https://doi.org/10.1590/S0104-59702018000200001>.
6. Castellanos MEP, Baptista TWF, Ayres JR. Interview with José Ricardo Ayres. *Saúde Soc.* [Internet]. 2018 [cited 2023 oct 10];27(1). Available from: <http://dx.doi.org/10.1590/s0104-12902018000002>.
7. The Joint United Nations Programme on HIV/AIDS (UNAIDS). Fact Sheet 2022 [Internet]. 2022 [cited 2023 oct 10]. Available from: https://unaids.org.br/wp-content/uploads/2022/07/2022_07_27_Factsheet_PT.pdf.
8. Ministério da Saúde (BR). Boletim Epidemiológico - HIV/Aids 2022 [Internet]. 2022 [acesso em 10 de outubro 2023]. Disponível Em: <https://www.gov.br/aids/pt-br/centrais-de-conteudo/boletins-epidemiologicos/2022/hiv-aids>.
9. Silva AR, Padilha MI, Petry S, Silva VS, Woo K, Galica J, et al. Reviews of literature in nursing research methodological considerations and defining characteristics. *ANS Adv Nurs Sci.* [Internet]. 2022 [cited 2023 oct 10];45(3). Available from: <https://doi.org/10.1097/ANS.0000000000000418>.
10. Tricco A, 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 2023 oct 10];169(7). Available from: <https://doi.org/10.7326/M18-0850>.
11. Aromataris E, Munn Z. JBI Manual for Evidence Synthesis. JBI [Internet]. 2020 [cited 2023 oct 10]. Available from: <https://synthesismanual.jbi.global>. <https://doi.org/10.46658/JBIMES-20-01>
12. Noyes J, Booth A, Moore G, Flemming K, Tunçalp Ö, Shakibazadeh E. Synthesising quantitative and qualitative evidence to inform guidelines on complex interventions: Clarifying the purposes, designs and outlining some methods. *BMJ Glob Health.* [Internet]. 2019 [cited 2023 oct 10];4(suppl 1). Available from: <http://dx.doi.org/10.1136/bmjgh-2018-000893>.
13. Hong QN, Pluye P, Fàbregues S, Bartlett G, Boardman F, Cargo M, et al. Improving the content validity of the mixed methods appraisal tool: A modified e-Delphi study. *J Clin Epidemiol.* [Internet]. 2019 [cited 2023 oct 10];111. Available from: <https://doi.org/10.1016/j.jclinepi.2019.03.008>.
14. Brito DMS, Galvão MTG, Pereira MLD. Markers of vulnerability for cervical cancer in HIV-infected women. *Rev latinoam enferm.* [Internet]. 2011 [cited 2023 oct 10];19(3). Available from: <https://doi.org/10.1590/S0104-11692011000300008>.
15. Alencar RA, Ciosak SI. Late diagnosis and vulnerabilities of the elderly living with HIV/AIDS. *Rev Esc Enferm USP.* [Internet]. 2015 [cited 2023 oct 10];49(2). Available from: <https://doi.org/10.1590/S0080-62342015000200007>.
16. Bezerra VP, Serra MAP, Cabral IPP, Moreira MASP, Almeida AS, Patrício ACFA. Preventive practices in the elderly and vulnerability to HIV. *Rev gaúch enferm.* [Internet]. 2015 [cited 2023 oct 10];36(4). Available from: <https://doi.org/10.1590/1983-1447.2015.04.44787>.
17. Lambret LCR, Silva RJC. Prevalence and types of rectal douches used for anal intercourse among men who have sex with men in Brazil. *BMJ Open.* [Internet]. 2017 [cited 2023 oct 10];7(5). Available from: <https://doi.org/10.1136/bmjopen-2016-011122>.
18. Guimarães RA, Monteiro LHB, Teles AS, Fernandes IL, Rodvalho AG, Silva GC, et al. Risk behaviors for sexually transmitted infections in noninjecting drug users: A cross-sectional study. *Int J STD AIDS.* [Internet]. 2018

- [cited 2023 oct 10];29(7). Available from: <https://doi.org/10.1177/0956462417750332>.
19. Costa MIF, Rodrigues RR, Teixeira RM, Paula PHA, Luna IT, Pinheiro PNC. Adolescents in situations of poverty: resilience and vulnerabilities to sexually transmitted infections. *Rev bras enferm.* [Internet]. 2020 [cited 2023 oct 10];73(suppl4). Available from: <https://doi.org/10.1590/0034-7167-2019-0242>.
 20. Scarinci IC, Ribeiro M, Gibson E, Hansen B, Kienen N. Assessing tobacco cessation needs among persons living with HIV in Brazil: results from a qualitative interview study. *J Assoc Nurses AIDS Care.* [Internet]. 2021 [cited 2023 oct 10];32(2). Available from: <https://doi.org/10.1097/JNC.000000000000181>.
 21. Vernaglia TVC, Leite TH, Faller S, Pechansky F, Kessler FHP, Cruz MS, et al. The female crack users: Higher rates of social vulnerability in Brazil. *Health Care Women Int.* [Internet]. 2017 [cited 2023 oct 10];38(11). Available from: <https://doi.org/10.1080/07399332.2017.1367001>.
 22. Amorim TF, Teles SA, Moraes LC, Matos MA, Carneiro MAS, Nogueira DJ, et al. Symptomatic sexually transmitted infections in Brazil emerging rural populations. *J Assoc Nurses AIDS Care.* [Internet]. 2018 [cited 2023 oct 10];29(6). Available from: <https://doi.org/10.1016/j.jana.2018.05.004>.
 23. Melo GC, Oliveira ECA, Leal IB, Silva CPMFS, Beltrão RA, Santos AD, et al. Spatial and temporal analysis of the human immunodeficiency virus in an area of social vulnerability in Northeast Brazil. *Geospat Health.* [Internet]. 2020 [cited 2023 oct 10];15(2). Available from: <https://doi.org/10.4081/gh.2020.863>.
 24. Soares JP, Teles SA, Caetano KAA, Amorim TF, Freire MEM, Nogueira JA, et al. Factors associated with sexually transmitted infections in sugarcane cutters: subsidies to caring for. *Rev latinoam enferm.* [Internet]. 2020 [cited 2023 oct 10];28. Available from: <https://doi.org/10.1590/1518-8345.3425.3306>.
 25. Holanda ER, Galvão MTG, Pedrosa NL, Paiva SS, Almeida RLF. Spatial analysis of infection by the human immunodeficiency virus among pregnant women. *Rev latinoam enferm.* [Internet]. 2015 [cited 2023 oct 10];23(3). Available from: <https://doi.org/10.1590/0104-1169.0481.2574>.
 26. Silva IR, Gomes AMT, Valadares GV, Santos NLP, Silva TP, Leite JL. Nurses' perceptions of the vulnerabilities to STD/AIDS in light of the process of adolescence. *Rev gaúch enferm.* [Internet]. 2015 [cited 2023 oct 10];36(3). Available from: <https://doi.org/10.1590/1983-1447.2015.03.47293>.
 27. Alencar RA, Ciosak SI. Aids in the elderly: reasons that lead to late diagnosis. *Rev Bras Enferm.* [Internet]. 2016 [cited 2023 oct 10];69(6). Available from: <https://doi.org/10.1590/0034-7167-2016-0370>.
 28. Santos MCF, Nóbrega MML, Silva AO, Bittencourt GKGD. Nursing diagnoses for elderly women vulnerable to HIV/AIDS. *Rev Bras Enferm.* [Internet]. 2018 [cited 2023 oct 10];71(suppl3). Available from: <https://doi.org/10.1590/0034-7167-2017-0086>.
 29. Lopes LM, Andrade RLP, Arakawa T, Magnabosco GT, Nemes MIB, Netto AR, et al. Vulnerability factors associated with HIV/AIDS hospitalizations: a case-control study. *Rev Bras Enferm.* [Internet]. 2020 [cited 2023 oct 10];73(3). Available from: <https://doi.org/10.1590/0034-7167-2018-0979>.
 30. Pimenta MC, Bermúdez XP, Godoi AMM, Maksud I, Benedetti M, Kauss B, et al. Barriers and facilitators for access to PrEP by vulnerable populations in Brazil: the ImPrEP Stakeholders Study. *Cad Saúde Pública.* [Internet]. 2022 [cited 2023 oct 10];38(1). Available from: <https://doi.org/10.1590/0102-311X00290620>.
 31. Santos GM, Hong C, Wilson N, Nutor JJ, Harris O, Garner A, et al. Persistent disparities in COVID-19-associated impacts on HIV prevention and care among a global sample of sexual and gender minority individuals. *Glob public health.* [Internet]. 2022 [cited 2023 oct 10];17(6). Available from: <https://doi.org/10.1080/17441692.2022.2063362>.
 32. Brito ES, Knauth DR, Brand ÉM, Calvo KDS, Vigo Á, Pilecco FB, et al. Factors associated with HIV and vulnerability contexts for women in Brazil. *Arch Sex Behav.* [Internet]. 2021 [cited 2023 oct 10];50(7). Available from: <https://doi.org/10.1007/s10508-021-01960-7>.
 33. Zachek CM, Coelho LE, Domingues RMSM, Clark JL, De Boni RB, Luz PM, et al. The intersection of HIV, social vulnerability, and reproductive health: analysis of women living with HIV in Rio de Janeiro, Brazil from 1996 to 2016. *AIDS Behav.* [Internet]. 2019 [cited 2023 oct 10];23(6). Available from: [10.1007/s10461-019-02395-x](https://doi.org/10.1007/s10461-019-02395-x).
 34. Silva CM, Alves RS, Santos TS, Bragagnollo GR, Tavares CM, Santos AAP. Epidemiological overview of HIV/

- AIDS in pregnant women from a state of northeastern Brazil. *Rev Bras Enferm.* [Internet]. 2018 [cited 2023 oct 10];71(suppl1). Available from: <http://dx.doi.org/10.1590/0034-7167-2017-0495>.
35. Silva JKB, Santos JM, Romero ROG, Nóbrega LMB, Queiroga RPF, Leadebal ODCP, et al. HIV infections in youth: prevalence and associated factors. *Rev Rene.* [Internet]. 2023 [cited 2023 oct 10];24. Available from: <https://doi.org/10.15253/2175-6783.20232483018>.
 36. Souza SO, Paula AC, Silva CA, Carvalho PMRS, Souza MM, Matos MM. Gender inequalities and vulnerability to sti/hiv/aids in urban settlement adolescents: an exploratory study. *Cienc enferm.* [Internet]. 2020 [cited 2023 oct 10];26. Available from: <http://dx.doi.org/10.29393/ce26-5igso60005>.
 37. Kpelly E, Schauder S, Bohm MK, Sounga D, Moukouta C. Profiles and health risks (STIs, HCV, HIV) of injecting drug users. *Rev Epidemiol Sante Publique.* [Internet]. 2022 [cited 2023 oct 10];70(6). Available from: <http://dx.doi.org/10.1016/j.respe.2022.08.007>.
 38. Aguiar RB, Leal MCC, Marques APO, Torres KMS, Tavares MTDB. Elderly people living with HIV - behavior and knowledge about sexuality: an integrative review. *Cien Saude Colet.* [Internet]. 2020 [cited 2023 oct 10];25(2). Available from: <https://doi.org/10.1590/1413-81232020252.12052018>.
 39. Flanagan BE, Hallisey EJ, Adams E, Lavery A. Measuring community vulnerability to natural and anthropogenic hazards: the centers for disease control and prevention's social vulnerability index. *J Environ Health* [Internet]. 2018 [cited 2023 oct 10];80. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7179070/pdf/nihms-1063751.pdf>
 40. Costa AS, Almeida PF. Vulnerabilities and decentralization of operations for attention to HIV/AIDS for Primary Health Care. Northeast, Brazil, 2019. *Rev Gerenc Polit Salud.* [Internet]. 2021 [cited 2023 oct 10];20. Available from: <https://doi.org/10.11144/Javeriana.rgps20.vdac>.
 41. Garnelo L, Lima JG, Rocha ESC, Herkrath FJ. Access and coverage of primary health care for rural and urban populations in the northern region of Brazil. *Saúde debate.* [Internet]. 2018 [cited 2023 oct 10];42(spe). Available from: <https://doi.org/10.1590/0103-11042018S106>.
 42. Prabhu S, Wanje G, Oyaro B, Otieno F, Mandaliya K, Jaoko W, et al. Adaptation of a social vulnerability index for measuring social frailty among East African women. *BMC Public Health.* [Internet]. 2022 [cited 2023 oct 10];22. Available from: <https://doi.org/10.1186/s12889-022-12597-z>.
 43. Shimizu HE, Trindade JS, Mesquita MS, Ramos MC. evaluation of the responsiveness index of the family health strategy in rural areas. *Rev Esc Enferm USP.* [Internet]. 2018 [cited 2023 oct 10];52. Available from: <https://doi.org/10.1590/s1980-220x2017020203316>.
 44. Paz PdO, Silva N, Becker L, Rigatto R. vulnerability of women in situation of violence in specialized service. *Aquichan.* [Internet]. 2019 [cited 2023 oct 10];19(2). Available from: <https://doi.org/10.5294/aqui.2019.19.2.2>.
 45. Kapadia F. Structural interventionsthat reduce HIV vulnerability: a public health ofconsequence, June 2022. *Am J Public Health.* [Internet]. 2022 [cited 2023 oct 10];112(6). Available from: <https://doi.org/10.2105/AJPH.2022.306869>.
 46. Azevedo SGV, Florêncio RS, Cestari VRF, Silva MAM, Pessoa VLMP, Moreira TMM. Programmatic vulnerability in health: concept analysis. *REME rev min enferm.* [Internet]. 2022 [cited 2023 oct 10];26. Available from: <https://doi.org/10.35699/2316-9389.2022.39021>.
 47. Morais TCA, Monteiro PS. Concepts of human vulnerability and individual integrity in bioethics. *Rev bioét.* [Internet]. 2017 [cited 2023 oct 10];25(2). Available from: <http://dx.doi.org/10.1590/1983-80422017252191>.