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Vulnerability and Vulnerabilized Populations to Sexually Transmitted Infections in Nursing Curricula: Teachers' Perception

Vulnerabilidade e populações vulnerabilizadas às infecções sexualmente transmissíveis nos currículos de enfermagem: percepção dos docentes

Vulnerabilidad y poblaciones vulnerabilizadas a las infecciones de transmisión sexual en los currículos de enfermería: percepción de los docentes

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ABSTRACT

Objective: to analyze the theoretical, political, and philosophical interest regarding vulnerability and vulnerabilized populations to sexually transmitted infections in the education of undergraduate nursing students at Brazilian Federal Universities. **Method:** a qualitative, socio-historical study using oral and documentary sources. Twenty-three interviews were conducted with faculty members from five undergraduate nursing programs. Data were coded using Atlas.ti software version 9.0, followed by Content Analysis. **Results:** faculty members understand vulnerability and vulnerabilized populations as complex phenomena involving social, structural, and economic factors. These topics are discussed at certain points during the educational process. Students have difficulty recognizing their own vulnerability. **Final considerations:** this topic should be addressed in the training of future nurses. Students' vulnerability must be reflected upon so they can recognize their own vulnerability and understand the importance of self-care.

Descriptors: Faculty; Teaching; Education, Nursing, Diploma Programs; Infecções Sexually Transmitted Diseases; Health Disparate Minority and Vulnerable Populations.

RESUMO

Objetivo: analisar o interesse teórico, político e filosófico acerca da vulnerabilidade e das populações vulnerabilizadas às infecções sexualmente transmissíveis na formação dos estudantes de Graduação em Enfermagem de Universidades Federais brasileiras. **Método:** estudo qualitativo, histórico social, com uso de fontes orais e documentais. Realizadas 23 entrevistas com docentes de cinco cursos de graduação em enfermagem. Os dados foram inseridos no *software* Atlas.ti versão 9.0 para codificação, e operacionalizada a Análise de Conteúdo. **Resultados:** a vulnerabilidade e as populações vulnerabilizadas são compreendidas pelos docentes diante de sua complexidade, que envolve fatores sociais, estruturais e econômicos. São discutidas em alguns momentos durante o processo formativo. Os estudantes possuem dificuldades em perceber a própria vulnerabilidade. **Considerações finais:** a abordagem dessa temática deve ser discutida no ensino dos futuros enfermeiros. A vulnerabilidade do estudante precisa ser refletida de modo que o mesmo perceba sua própria vulnerabilidade e compreenda a importância do autocuidado.

Descritores: Docentes; Ensino; Programas de Graduação em Enfermagem; Infecções Sexualmente Transmissíveis; Minorias Desiguais em Saúde e Populações Vulneráveis.

RESUMEN

Objetivo: analizar el interés teórico, político y filosófico sobre la vulnerabilidad y las poblaciones vulnerables a las infecciones de transmisión sexual en la formación de estudiantes de Graduación en Enfermería en las Universidades Federales de Brasil. **Método:** estudio cualitativo, histórico social, con utilización de fuentes orales y documentales. Se realizaron 23 entrevistas a profesores de cinco carreras de grado en enfermería. Los datos se ingresaron en el *software Atlas.ti* versión 9.0 para su codificación y se implementó el Análisis de Contenido. **Resultados:** la vulnerabilidad y las poblaciones vulnerables son comprendidas por los docentes dada su complejidad, que involucra factores sociales, estructurales y económicos. Se discuten en ocasiones durante el proceso de capacitación. Los estudiantes tienen dificultades para advertir su propia vulnerabilidad. **Consideraciones finales:** el abordaje de este tema debe ser discutido en la enseñanza de los futuros enfermeros. La vulnerabilidad del estudiante debe reflejarse para que este se dé cuenta de su propia vulnerabilidad y comprenda la importancia del autocuidado.

Descriptores: Docentes; Enseñanza; Programas de Graduación en Enfermería; Enfermedades de Transmisión Sexual; Poblaciones Minoritarias, Vulnerables y Desiguales en Salud.

INTRODUCTION

The concept of vulnerability is interdisciplinary and, in the health field, can be summarized as the likelihood of an individual or group being exposed to illness due to individual, collective, and contextual factors that increase susceptibility to infection and disease[1]. However, it is essential to understand that individuals live within diverse and

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hierarchical relationships that may limit access to resources and shape decisions and behaviors, often beyond their control or capacity for change without additional support[2].

Current debates on vulnerability and its classical dimensions (individual, social, and programmatic) are crucial for understanding the susceptibility of populations to sexually transmitted infections (STIs), such as HIV/AIDS and other conditions[1]. The incidence of STIs is closely linked to vulnerability issues. HIV/AIDS, for example, is a central concern in discussions on vulnerability and public health, highlighting the need for policies and strategies that address social, economic, and healthcare access disparities[3].

The discussion on vulnerability emphasized the importance of context, giving voice to affected individuals, and considering how services and work processes are being operationalized[4]. This concept highlights a set of individual and collective characteristics related to increased susceptibility to an event, coupled with reduced availability of resources for protection[5].

In the context of STIs, the initial focus on specific groups in epidemiological studies led to the stigmatizing term "risk groups," which was replaced by "risk behaviors" in the 1990s. However, this terminology introduced punitive issues and rigid standards by blaming individual behaviors[6]. In this context, the World Health Organization (WHO) uses the term "key populations" to describe and define groups that require greater attention regarding prevention, diagnosis, treatment, and care.

Other issues related to the use of vulnerability are inherently tied to identifying individuals or groups with higher or lower vulnerability. Vulnerability is not a general condition; it is specific to something and occurs in certain times and contexts. Vulnerability should not be considered an attribute of a person, group, or situation. Therefore, the terms "vulnerable subjects" or "vulnerable populations" should be replaced with "vulnerabilized populations" or "vulnerabilizing relationships"[5].

In this scenario, nursing plays a crucial role in addressing vulnerabilizing relationships that increase STI incidence. As frontline healthcare professionals, nurses often provide direct care to patients affected by STIs, promoting prevention, early diagnosis, and appropriate treatment. Additionally, nursing students play a significant role in expanding knowledge and raising awareness about vulnerability and STIs within communities. By understanding the complex dimensions of vulnerability, including social, economic, and behavioral factors, future nursing professionals will be better equipped to address the challenges faced by vulnerabilized populations. It is up to the faculty to conduct an epidemiological analysis and problematization of which STIs have the highest rates and which clienteles face difficulties and limitations in accessing care.

Given the above, the following research question emerged: How are vulnerability and vulnerabilized populations to sexually transmitted infections being addressed in the education of undergraduate nursing students at Brazilian Federal Universities? Thus, the objective was set: to analyze the theoretical, political, and philosophical interest regarding vulnerability and vulnerabilized populations to sexually transmitted infections in the education of undergraduate nursing students at Brazilian Federal Universities.

METHOD

This is a qualitative, socio-historical study that utilized oral and documentary sources. The study focused on selecting the oldest nursing programs in each Brazilian region. To choose these institutions, a search was conducted on the e-MEC Portal, which contains all information and credentials of higher education institutions in the country. The selected institutions were: Universidade Federal do Rio Grande do Sul (UFRGS) (1950) in the South; Universidade Federal do Rio de Janeiro (UFRJ) (1923) in the Southeast; Universidade Federal de Mato Grosso (UFMT) (1975) in the Midwest; Universidade Federal da Bahia (UFBA) (1947) in the Northeast; and Universidade Federal do Amazonas (UFAM) (1951) in the North.

For selecting oral sources, a search was conducted on the institutional page of each nursing program to identify faculty members, research lines, and potential involvement in the thematic areas of sexually transmitted infections, sexuality, or vulnerabilized populations. Initially, electronic invitations (via email) were sent to faculty members whose teaching potentially covered these topics. However, due to limited responses, the invitation was extended to all faculty members of the selected institutions. The study sample was initially intentional, followed by snowball sampling[7]. Data collection concluded upon reaching theoretical saturation.

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As eligibility criteria, the study included faculty members in leadership and/or coordination roles, as well as those involved in courses that addressed the teaching of STIs. Exclusion criteria included faculty members involved in teaching sexuality and sexual diversity without association with STIs and vulnerabilized populations, and those teaching basic subjects (biology, immunology, embryology). To ensure methodological rigor, the study followed the Consolidated Criteria for Reporting Qualitative Research (COREQ)[8].

The interviews were conducted by the principal researcher (S.P.) between March and October 2022, according to participants' availability, using a semi-structured guide in a virtual setting (Google Meet), with an average duration of 52 minutes. The study included four faculty members in managerial positions (course coordination/leadership) and 19 faculty members directly involved in courses related to the subject matter. The interviews were fully transcribed and sent to participants for content validation. For data organization and management, the transcribed interview documents were imported into the Atlas.ti 9® software, where codes were applied to statements, sentences, or paragraphs based on their meaning and the topic in question. Descriptions for each code were created to facilitate the subsequent grouping of codes. Using Atlas.ti® tools, memos were also created to record reflections that could be significant in the data discussion.

After this process, Content Analysis[9] was implemented, where codes were grouped by similarity and importance, resulting in three categories of analysis: "Understanding Vulnerability and Vulnerabilized Populations," "Vulnerabilized Populations within Curricula," and "Vulnerability of Nursing Students." The documentary data included Pedagogical Projects, curricula, and teaching and lesson plans. These were obtained through online access on institutional websites, as well as provided by the faculty members interviewed. Document analysis was performed using an instrument developed by the lead author, aimed at verifying the authenticity of the sources and the relevance of the information to the study's objective.

The research protocol for this study was approved by the Ethics and Research Committee. To ensure participant anonymity, verbatim quotes are presented using the code "I" for interview, followed by a sequential number and the acronym of the participant's institution. The Informed Consent Form (ICF) was completed and authorized via Google Forms® and archived by the researcher.

RESULTS

The sociodemographic and teaching characteristics of the study participants and profile information can be found in Tables 1 and 2.

Table 1: Participants' sociodemographic characteristics (n=23). Florianópolis, SC, Brazil, 2023.

Variables	n (%)
Age (years)	
30-40	5 (21.74)
41-50	6 (26.09)
> 50	12 (52.17)
Gender	
Female	18 (78.26)
Male	5 (21.74)
Institution	
UFRJ	6 (26.09)
UFBA	5 (21.74)
UFRGS	5 (21.74)
UFMT	4 (17.39)
UFAM	3 (13.04)

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Table 2: Participant teaching characteristics (n=23). Florianópolis, SC, Brazil, 2023.

Variables	n (%)
Undergraduate degree from the same teaching institution	
Yes	16 (69.57)
No	7 (30.43)
Teaching experience (years)	
<10	8 (34.78)
11-20	4 (17.39)
21-30	3 (13.04)
31-40	6 (26.09)
>40	2 (8.70)
Specific areas*	
Women's health	8 (42.11)
Adult health	6 (31.58)
Epidemiology	2 (10.53)
Collective health	1 (5.26)
Supervised internship	1 (5.26)
Specific STI course	1 (5.26)
Gynecology-Obstetrics	1 (5.26)
Adolescent health	1 (5.26)
Newborn, child, and adolescent health	1 (5.26)

Note: *n=19.

Regarding specificities, four faculty members held coordination or leadership positions in undergraduate nursing programs. Thus, the teaching activities on STIs developed in programmatic curriculum courses were considered for 19 faculty members, with three of these professionals working in more than one specialty. The curricular courses that included the topic of STIs within their content range are presented in Figure 1.

Institution	Courses
UFAM	Nursing in Communicable Diseases Nursing in Comprehensive Care for Adult health
UFBA	Nursing Care for Individuals in the Hospital Context Nursing in Women's Health Care in Primary Care
UFMT	Nursing in Adult Health
UFRGS	Nursing Care for Women and Newborns Nursing Care for Newborns, Children, and Adolescents Nursing Care in Collective Health III Curricular Internship - Primary Care
UFRJ	Youth Health and Me Gynecology-Obstetrics Epidemiology Supervised Nursing Internship G

Figure 1: Programmatic curricular courses addressing STIs. Florianópolis, SC, Brazil, 2023.

From the interviews, the findings are presented from the perspective of three categories: Understanding vulnerability and vulnerabilized populations; Vulnerabilized populations in nursing education curricula; and Nursing students' vulnerability.

Understanding vulnerability and vulnerabilized populations

Vulnerability is perceived as a broad concept by the faculty members. Although the responses are assertive, there is a significant complexity in determining the vulnerability of a specific person or population. In general, the faculty's understanding of the concept is closely linked to the conceptual framework of vulnerability and its dimensions, the Social Determinants of Health (SDH), and how these factors influence people's susceptibility to STIs or other health conditions. In this study, participants defined vulnerability as a set of aspects, as evidenced in this statement:

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> *Anything that can reduce these people's access to any possibility of social, economic, physical, or emotional involvement. That can bring vulnerabilities. (I1UFRJ)*

> *Vulnerability is inherent to the human being; however, when we think of vulnerabilized populations, this stems from social, political, religious, and moral issues, so it is different. Rural women end up being a group, a vulnerabilized population. People experiencing homelessness are a vulnerabilized population. (I2UFBA)*

In a different perspective, some participants also believe that:

> *Vulnerability is being deprived of the means to sustain oneself, to stay healthy. [...] Vulnerable populations are those without access to these conditions. It's one thing to have the means and choose not to engage in self-care; it's another to not have the conditions for it. (I10UFAM)*

Other participants also highlighted the difficulty in accessing vulnerable groups, such as people experiencing homelessness, which can further exacerbate and hinder the improvement of health conditions for this population.

> *And how can we investigate, act, and minimize the issues, effects, and consequences of STIs, for example, in the homeless population? Who approaches them? We are still afraid, we are hesitant because we operate from a social representation that these people are aggressive, that they are criminals. But they don't even enter the service because they often don't even reach the professional, as they lack something called documentation. And the service requires you to present a document to be registered. (I2UFBA)*

Vulnerability, in the faculty's perception, is tied to social, economic, religious, political issues, and especially access. An individual presents some degree of vulnerability when they lack access to healthcare, education, services, and all factors that promote health conditions. There are also discussions regarding the use of the term "vulnerable populations" and how its usage can cause discomfort or even label certain groups, somewhat similar to the use of "risk behaviors" at the beginning of the HIV/AIDS epidemic, which brought aspects of prejudice and stigmatization. From the faculty's perspective, the terminology should not be presented as something static. Populations change according to their needs or the lack of resources that ensure their health and care. As evidenced by this participant discussing the difference between being and becoming vulnerable:

> *It (vulnerability) gives a notion of immutability, as if that vulnerable situation perpetuates itself. Vulnerability is a process, which is why we cannot say that a person is vulnerable but rather that they are in a vulnerable situation. We should not use vulnerable populations because if we say vulnerable population, we imply that this population is vulnerable. So, we work with the process of vulnerabilization. (I11UFRGS)*

Another participant provided more specific examples regarding certain populations, such as LGBTQIA+:

> *We can classify and bring this construct, this designation that the incarcerated population, for example—predominantly Black men, young men—if we also think about sexual diversity, there is the LGBTQIA+ population, a population that is more vulnerable. They are more vulnerable to issues like sexually transmitted infections, not because of their condition but due to the socio-cultural dynamics surrounding this population. It's not because someone is gay that they contract HIV. People end up interacting only within their group, and obviously, in the case of an STI, it could only be transmitted among them. But this has implications for the circulation of information. [...] If we don't talk about this at home, then we're talking about sexual education for children, which is very different from teaching about sex; it's teaching about sexual health. As long as this paternalistic, patriarchal, and sexist culture permeates us, we will continue reproducing this. (I20UFRJ)*

The complexity surrounding the development of vulnerability and the identification of vulnerabilized populations is expressed by faculty members in various ways; in summary, it is linked to the lack of socioeconomic resources, access to healthcare services, the specificities of certain groups due to their social contexts, access to adequate information, among other factors. Important discussions about vulnerability, health inequities, equitable access, and stigmas attached to certain population groups are elucidated within the field of human rights. In a general overview, when initially asked who the vulnerabilized populations are, some faculty members (n=8) did not specify a particular population but rather problematized aspects such as social determinants, associations between environment and vulnerability, and issues regarding lack of access for protection/self-care. However, specific groups were mentioned: people experiencing homelessness (n=6) and homeless women (n=1); Indigenous populations (n=5); Black people (n=4) with an association to race/color conditions (n=1); LGBTQIA+ populations (n=4), more specifically transgender individuals (n=3) and men who have sex with men (n=1); youth and adolescents (n=4); women (n=3) with an association to gender issues (n=1); sex workers (n=3); riverine populations (n=3); people living in rural areas (n=2); quilombolas

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(n=2); drug users (n=2) with an association between adolescent populations and alcohol/drugs (n=1); incarcerated individuals (n=2); people living in peripheral areas (n=1); and the elderly (n=1).

Vulnerabilized populations in nursing education curricula

When asked about how these populations, who are in greater vulnerability, are being addressed within undergraduate nursing curricula, faculty responses emphasized the barriers and difficulties in providing visibility to these populations. The approach occurs:

> *In a still timid way. I see that it's within the service, in primary healthcare. [...] I don't see this as a strong focus, despite being addressed. It's something that happens occasionally—there's an event, and then we call attention to it—but as a systematic part of the program, I don't see it yet. (I5UFRJ)*

> *Students may have classes on it, but they are occasional classes based on the teacher's interest. It's not in the syllabus or curriculum; it's not in the programmatic content. A teacher who works with the homeless population introduces it, but once that teacher leaves, that class ends. (I7UFRJ)*

Other accounts and information pointed out by the faculty highlight ongoing efforts regarding the topic, such as academic work on LGBTQIA+ populations and riverine communities, isolated events with homeless individuals, and occasional classes based on the teacher's interest. There are concerns about the lack of making these discussions part of the formal curriculum, how they end up being veiled within a core subject with various contents, and the individual responsibility to address such topics. Potentialities can also be observed in student training on addressing the vulnerability of certain population groups, as highlighted by faculty members emphasizing regionality and the vulnerabilities of local communities:

> *In the course, we worked on this, the issue of quilombolas, fields, and forests, for example. We can't fully address it, so we bring it up as a policy in a specific seminar, but it's not part of the programmatic content. (I15UFMT)*

> *We address it during class, drawing students' attention to the riverine population, a group that is very present here, the Indigenous population, and the riverine population. [...] They have a course on Indigenous health, which also covers the health of Amazonian populations. Various issues are addressed in that course (I13UFAM)*

> *I think our institution is also marked by a concern with vulnerabilities, with key populations, whether due to territorial issues. There is strong work with traditional communities related to race, quilombola populations, Black populations, and at the same time with social vulnerability, programmatic vulnerability, thinking about the homeless population. (I12UFBA)*

Populations mentioned by faculty members, although analyzed in terms of vulnerability and concerns, still cannot be effectively addressed with the complexity that the discussion demands.

> *I see that there is still much to be worked on, especially with the Indigenous community and the transgender community. We have a trans student at the school who has great difficulty navigating the space, even though people say there is no prejudice, there is prejudice. And there is also the individual's difficulty in feeling secure in these discussions. (I18UFRGS)*

> *I think this is still under construction. There is an occasional approach—how can I put it? We don't yet have a guarantee in the curriculum matrix that we will objectively, effectively, and obligatorily include discussions on the LGBTQIA+ population, the trans population, or the homeless population. [...] It depends a lot on the teaching staff. (I19UFRJ).*

Despite the various challenges that may arise in addressing these groups within the nursing undergraduate program, there is still visibility and efforts to incorporate these issues into the curricula. Some groups, such as homeless individuals, LGBTQIA+ populations, Black and Indigenous populations, appear in discussions and concerns about how to approach them in education.

> *Here at the school, we have already held discussion circles with populations we brought together—indigenous, LGBT, etc.—in a conversation called 'What Unites Us and What Separates Us.' Each group has its specificities, but the fight for the right to health is one. (I8UFAM)*

In summary, discussions on vulnerabilized populations with nursing students are presented as something that can occur transversally across the curriculum, spanning different courses and their clienteles. The association between vulnerability, vulnerabilized populations, sexuality, and STIs is also highlighted.

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> *The pedagogical political project of the course is somewhat outdated and needs to be renewed; this has been discussed at the nursing school. What we do in the courses is much more advanced than what is guided by the pedagogical political project. In the courses, we have a commitment to work on the topic of STIs from a vulnerability perspective, from a perspective of equity promotion policies in health and specific populations. (I11UFRGS)*

> *We have an interdisciplinary project that specifically addresses issues among homeless individuals. We have a partnership with the street clinic, and we provide care there. Without a doubt, one of the main issues that arise is substance use and STIs—it's very common. Some of these homeless individuals are pregnant, and we always address that. We also do some activities on the streetcar. On Thursdays, our care is exclusively at the trans outpatient clinic. (I6UFBA)*

The narratives demonstrate how nursing undergraduate programs are working to develop students' knowledge and skills for managing STIs. Discussions on health equity, assistance to vulnerabilized populations, concerns about sexual and reproductive rights, transmission risks, and public policy coordination are also addressed. Another point of emphasis is faculty members' perception that certain populations cause less discomfort and are more readily addressed by students, such as trans individuals and the LGBTQIA+ population, compared to homeless individuals. Even though this issue is raised, faculty members notice little effort by the programs to include attention to these groups.

Vulnerability of nursing students

Nursing students also need to be seen and recognized as individuals who may express some degree of vulnerability. Even during their training process, it is necessary to reflect on and discuss students' lives as social beings. Faculty members highlight important aspects when asked about student vulnerability—whether it's students not recognizing their own vulnerability or faculty not problematizing student vulnerability.

> *When it comes to teaching or being in training, it's as if those I'm teaching aren't part of this vulnerable group. It's as if we separate things—who is a vulnerable group? The adolescents, those out there, those on the street, those in the favelas—but it's as if the university itself covers this up. Oh, someone inside the university? They're not vulnerable; they already know; they already have information." (I2UFBA)*

Social and economic factors contributing to university students' vulnerability are also highlighted by faculty:

> *We have also become a point of openness, discussion, and support for these students who fall within some characteristics of vulnerability. Quota students also face vulnerability because sometimes they don't have a place to live or food to eat. [...] the topic of gender also stirs things up because sometimes women only realize what's happening in their relationships with boyfriends or husbands when they start reading about gender issues. (I3UFBA)*

> *We have a significant number of low-income students, students who enter through the quota system at the university. And then social issues mix with racial issues. [...] usually, these are people with fewer resources because living in a metropolis has a very high cost of living. The university provides some support through aid scholarships, but they are not enough—it's a BRL 400 scholarship, so it doesn't cover rent or decent subsistence. (I20UFRJ)*

The accounts highlight the complexity of student vulnerability regarding discovering their own vulnerabilities during educational activities and how students often fail to recognize their own vulnerability in their actions and experiences. Many times, it's something externalized, as if it doesn't belong to the student but always to someone else—the person being cared for.

> *Our students don't see themselves as vulnerable because we have this practice of always thinking we're dealing with someone else—that the person with problems is someone else, someone else's health issue. [...] It seems like there's neutrality—I go there to care for someone else as if I weren't involved or could be in that situation myself (I7UFRJ)*

Regarding vulnerability related to students' sexual lives, faculty members express concern when they notice that students' actions do not align with what they practice in educational activities. There is concern about this disconnect and the trivialization of risks related to STIs.

> *I am training professionals who will work on health promotion and disease prevention. But they are also people experiencing these processes themselves—they are here for professional training but also receive care from someone else. And even these students are not very clear on transmission methods sometimes or prevention methods. They think—because most of them are young—that they won't get infected. They continue engaging in sexual practices that put them at risk for infection, especially HIV,*

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and they trivialize it a bit. It's very common for my young female students to be more concerned about getting an IUD than using a condom because they're in stable relationships. (I17UFRJ)

At some institutions, there are specific groups, whether in the form of a center, directory, or committee, that seek to assist students with their social vulnerabilities. There are also extension groups that aim to engage this population in disseminating information and knowledge about STIs to their peers and other populations.

DISCUSSION

In light of the conceptual framework of vulnerability, it is possible to observe that faculty members' understanding is almost uniform. There are important associations regarding social, structural, and economic factors and their significant influence on individuals' lives. Socioeconomic conditions, cultural factors, biological aspects, and sexual behaviors determine vulnerability to STIs. There is a certain discomfort among faculty members when they realize they cannot address all the demands of today's society, which go far beyond the concepts of vulnerability. In other words, STIs are just one aspect intertwined with the socioeconomic and cultural conditions of the population, along with racial issues, drug use and abuse, gender, and sexuality, coexisting with a curriculum framework that is still somewhat rigid in mandatory content, yet not always relevant to this new reality.

Vulnerability is associated with the welfare state's conception and its individual, social, and programmatic dimensions[5], which appear inseparably in the nursing faculty's discourse. When linked to issues such as sexuality and STIs, vulnerability is intrinsically connected to the Social Determinants of Health (SDH) and how they impact individuals' susceptibility. In light of this, there are also concerns about the terminology used, particularly the term vulnerable populations. Faculty members problematize the stigmatizing aspects that may arise and label certain population groups. This vulnerable situation is not static; populations change, and health demands evolve as well.

There are also priority populations with a transversal character, whose vulnerabilities are related to local social dynamics and their specificities, such as adolescents and young people, Black populations, Indigenous populations, and homeless individuals[10]. Therefore, nursing undergraduate programs, when engaging in teaching activities focused on STIs, must consider the dynamics of these populations in light of epidemiological indices and their surrounding specificities. A question emerges from the participants' discourse that prompts reflection: How prepared are faculty members to discuss these topics attentively, without prejudice, and open to the realities experienced by the students themselves? There can be no silence in this dialogue.

Regarding the populations mentioned, associations between knowledge and teaching can be identified in the literature, giving visibility to the vulnerabilities of these individuals and groups. For example, there is a certain superficiality in the content on transgender people in a nursing undergraduate program in southern Brazil. Although the topic is addressed in a specific course within the curriculum, there is still a lack of depth that would provide students with the skills and competencies needed to promote comprehensive care[11]. Students point to small focuses concentrated in a few classes and specific courses as the curricular space that addresses LGBTQIA+ health[12]. An ongoing study protocol in South Africa seeks to address gaps in health education by including content on LGBTQIA+ health and other key populations in undergraduate health science curricula. The study also aims to improve professionals' training so they are prepared to meet the specific needs of LGBTQIA+ individuals, sex workers, injecting drug users, and men who have sex with men[13].

Studies conducted in China and Turkey have also highlighted barriers related to communication with this group, insufficient knowledge and information among both faculty and students, stigmatizing attitudes, and high levels of homophobia among nursing educators[14-15]. These aspects can be reflected in the levels of knowledge, preparedness to deal with gender identities, and discriminatory actions by health students, significantly impacting this group's access to healthcare services.

Faculty members point out various populations of interest concerning vulnerability and STIs. A review study on the determinants of poverty, stigma, race, and vulnerability among homeless drug users places Brazil as the leading producer on the topic (43%), followed by the United States (22.8%) and Colombia (10%). HIV/AIDS is among the most studied health conditions (64.7%), followed by Hepatitis (17.6%)[16]. Regarding the role of nursing in Brazil, significant performance by nurses is highlighted in caring for homeless individuals, with strategies related to reducing vulnerability to STIs and alcohol and drug use[17]. A study conducted in the United States highlighted the impact of experiential learning through community clinical internships, where nursing students

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engaged with homeless individuals. This practical experience not only improved students' clinical skills but also fostered a deeper understanding of the social determinants of health affecting this group[18].

The Indigenous population also presents health vulnerabilities due to various factors, especially regarding access to healthcare services. In Brazilian nursing care for this population, activities such as welcoming, nursing consultations, medication administration, wound care, and educational actions are highlighted[19]. Participation in an Indigenous Health course led to improvements in Canadian nursing students' attitudes, such as their perception of Indigenous peoples and knowledge of factors impacting Indigenous health[20].

Faculty members raise concerns about nursing students' vulnerability, particularly regarding STIs. Studies show that university students have insufficient knowledge about some infections and do not consistently use condoms in their relationships[21]. Although 94.6% of university students in a study conducted in Germany agreed that condoms protect against STIs, 25.2% admitted to rarely or never using condoms in their sexual lives, highlighting a gap between knowledge and preventive practice[22]. Other studies show high knowledge levels for HIV/AIDS but low knowledge about transmission modes[23]; knowledge as an important factor for self-care[24]; moderate knowledge regarding Pre-Exposure Prophylaxis (PrEP)[25]; low knowledge about the HPV vaccine[26]; increasing knowledge about STIs throughout undergraduate education[24]; and adequate knowledge about STIs, though with situations of vulnerability[27].

Other studies point out that educational activities focused on teaching STIs have a strong impact on increasing health students' knowledge and that assessing knowledge levels before and after an intervention is a way to diagnose the main gaps among young people to better guide higher education[28-29]. Young health students are considered a vulnerabilized population for risky sexual practices due to common characteristics of their age group. Thus, they need an adequate level of knowledge about sexuality and contraceptive methods to experience them safely. As future healthcare professionals, they must acquire skills and knowledge aimed at providing adequate and quality information[29].

Faculty members note a certain distance regarding discussions about nursing students and situations that place them in vulnerability. There are also no reflections by students on the issues addressed in class and the care provided to people who are often in situations of vulnerability similar to that of the students themselves. The commitment to welcoming students who suffer from family or sexual violence, who have disabilities, who are Black, who entered the course through affirmative action policies, or who belong to the LGBTQIA+ group is a concern among faculty members. However, this concern does not translate into affirmative action policies at universities that address these issues with open, prepared, and proactive dialogue to reduce suffering.

It is also important to reflect on the National Curriculum Guidelines for Undergraduate Nursing Programs (DCN-ENF), which do not specify topics or populations/groups that should be included in nursing curricula. They state that future professionals must be able to identify the individual and collective health needs of the population, their determinants and conditioning factors, and act on health-disease processes with greater regional and national impact[30]. In the syllabi of courses that address STIs in the investigated institutions and in the teaching plans provided by faculty, it is observed that the focus is on life cycles (adult, women's, children's, adolescent, and elderly health) and does not programmatically identify the populations mentioned by faculty within the curriculum. Thus, these discussions reveal the coexistence between the programmatic and the occasional, or between the formal curriculum and the hidden curriculum. This discrepancy between the formal and hidden curricula may hinder the transversal approach to emerging and relevant issues for professional practice. The lack of specific topics in the formal curriculum compromises students' ability to develop a more inclusive and sensitive perspective on social vulnerabilities, which can affect the quality of care practices and the competence of professionals in promoting health equity.

This study is expected to contribute to discussions surrounding vulnerability and vulnerabilized populations, prompting reflections and debates on the individual, social, and programmatic dimensions of individuals. Furthermore, it brings to light the need for both nursing faculty and students to critically examine the inclusive approaches and interventions they are effectively implementing regarding health inequities, particularly in sexual health and sexuality. The study allows for reflection on new ways to address the subject during undergraduate education.

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Study limitations

The study presents limitations regarding the stratified sample, with only one university representing each Brazilian region, which may not fully reflect nursing education across Brazil. There were also limitations in accessing institutional documents, particularly teaching plans for nursing undergraduate courses, which are often not available online.

FINAL CONSIDERATIONS

Addressing vulnerability and vulnerabilized populations in nursing undergraduate programs is crucial for training professionals who are more aware, sensitive, and prepared to handle the diversity and specificity of people, thereby working to reduce disparities and improve health equitably.

The faculty's accounts of the complexity of the concept of vulnerability demonstrate an understanding grounded in the dimensions of SDH and how these conditions impact people's susceptibility to STIs. They reveal a critical analysis of "being vulnerable" versus "being in a vulnerable situation," highlighting a theoretical and philosophical approach that challenges the notion of the immutability of vulnerability.

Although the concept of vulnerability is present in curricula, there are still limitations in how systematically and deeply the topic is addressed, which may compromise the training of professionals prepared to act with equity and social sensitivity. To address the identified barriers and gaps, it is essential to analyze Nursing curricula so that topics related to vulnerability and STIs are addressed more consistently and integratively. It is also necessary to expand discussions on social determinants and sexual and reproductive health, incorporating them transversally into teaching and reinforcing Nursing's role in combating health inequities. Moreover, reflecting on nursing students' own vulnerability points to the need for institutional support and strategies that consider these students' socioeconomic and emotional conditions during their training process.

By equipping future nurses to deal with the complex realities of vulnerabilized populations, universities promote not only professional competencies but also the formation of citizens committed to inclusive and just healthcare. Additionally, this topic requires broad societal reflection, including robust public policies in health and education and the dissemination of information that reduces stigma associated with groups such as LGBTQIAPN+, Indigenous peoples, Black individuals, and homeless populations, as pointed out by faculty.

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Author's contributions

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