Cogitare Enfermagem

REVIEW

HOW TO TEACH INCURABLE SEXUALLY TRANSMITTED INFECTIONS TO UNDERGRADUATE NURSING STUDENTS: A SCOPING REVIEW

HIGHLIGHTS

1.Teaching STIs ensures prevention/health promotion.
2. The focus of teaching occurs, mostly, on HIV/AIDS.
3. Didactic resources and varied strategies facilitate learning about STIs.
4. Educational interventions are effective in the development of knowledge.

Stéfany Petry[1]
Maria Itayra Padilha[1]
Maiara Suelen Mazera[1]
Amina Regina Silva[2]

ABSTRACT

Objective: to group and synthesize the studies that address the teaching of Incurable Sexually Transmitted Infections for undergraduate Nursing students in the world (1989-2020). **Method:** a scoping review according to the Joanna Briggs Institute. The search strategy was carried out in PubMed, CINAHL, Embase, Web of Science and LILACS. Two reviewers selected and extracted the data independently. **Results:** after searching and removing duplicates, 41 studies met the established criteria and were included. Content analysis resulted in three categories: Teaching Scenarios and Strategies; Teaching Focus; and Teaching Effectiveness. **Final considerations:** the educational actions were effective in increasing knowledge, reducing stigma and anxiety, and increasing sensitivity in promoting Nursing care. Teaching this theme is important in the profession's work on epidemiological indices and in the training of Nursing students for prevention and promotion in health.

DESCRIPTORS: Sexually Transmitted Diseases; Nursing Education; Higher Education; Nursing Students; Infections.

HOW TO REFERENCE THIS ARTICLE:
Petry S, Padilha MI, Mazera MS, Silva AR. How to teach incurable sexually transmitted infections to undergraduate nursing students: a scoping review. Cogitare Enferm. [Internet]. 2023 [cited "insert year, month, day"]; 28. Available from: https://dx.doi.org/10.1590/ce.v28i0.91076.

[1]Universidade Federal de Santa Catarina, Florianópolis, SC, Brasil
[2]Queen's University, Kingston, ON, Canada.

INTRODUCTION

Sexually Transmitted Infections (STIs) have different etiologies and symptoms[1]. Transmission is through sexual contact with an infected person without using a condom, during pregnancy/delivery/breastfeeding, or through contact with mucous membranes or bodily secretions of infected individuals[2].

The World Health Organization (WHO) points out that more than 1 million people acquire STIs daily in the world. STIs can have serious consequences and are among the 10 most frequent causes for seeking health services, in addition to having health, social and economic consequences[3]. When not properly treated, they exert a significant impact on health and can have serious consequences, such as cardiovascular and neurological diseases, infertility, miscarriages and stillbirths, among others[3-4]. They are commonly associated with issues such as stigma and domestic violence and negatively affect quality of life[4].

Of the more than 30 bacteria, viruses and parasites, eight of these pathogens are associated with the highest incidence values of STIs. Four of them are curable: syphilis, gonorrhea, chlamydia and trichomoniasis; and four are incurable: hepatitis B, herpes simplex virus (HSV), HIV/AIDS and human papilloma virus (HPV). The focus of this study is directed to the Incurable STIs due to the high epidemiological rates[5], and because, although there are treatments to reduce the aggravating symptoms, such STIs are incurable, which makes people use health resources throughout their lives.

Additionally, the importance of a qualified approach to these topics during health professionals' undergraduate studies is highlighted, in particular from the Nursing area[6]. The university space is fundamental for scientific and technological development[7], as well as for promoting a solid knowledge base for the students so that, among other aspects, they can include the social determinants of health in order to guarantee the quality of the educational process, guided by a curriculum plan consistent with the epidemiological reality. In this sense, the question is as follows: How has the teaching of Incurable Sexually Transmitted Infections been approached in Nursing Undergraduate Courses?

Therefore, the objective of the study is to group and synthesize the studies that address the teaching of Incurable Sexually Transmitted Infections for undergraduate Nursing students in the world (1989-2020).

METHOD

Study design

A scoping review conducted in accordance with the Joanna Briggs Institute (JBI). As recommended by the methodology, an *a priori* protocol was prepared and published to guide this review[8-9]. Through rigorous and systematic procedures, scoping reviews aim at mapping the literature about a thematic area with the intention of providing a descriptive view of the reviewed studies[8].

The research question was elaborated through the Population, Concept and Context (PCC) strategy for scoping reviews[8]. Therefore, P (Population) refers to undergraduate Nursing students; C (Concept) to the teaching of Incurable STIs; and C (Context) to the teaching scenario during undergraduate Nursing studies. Therefore, the guiding question was defined as follows: "How has the teaching of Incurable Sexually Transmitted Infections been approached in Nursing Undergraduate Courses?".

The inclusion criteria were the following: studies aimed at teaching Incurable STIs

(Hepatitis B, HSV, HIV or HPV) to undergraduate Nursing students; methodologies used in the teaching of the topic; studies available in full, free of charge, in Portuguese, English and Spanish; and qualitative and quantitative studies, mixed methods, guidelines, theses and dissertations. The exclusion criteria were as follows: studies aimed at educating Health or Nursing professionals; Nursing students' knowledge and perceptions regarding STIs; technical level and graduate students in Nursing; studies whose focus was generalist on the teaching of STIs; and studies on the curriculum, course and/or academic discipline, which only contained a description and not the implementation of any educational action.

The time frame chosen for this review is associated with the emergence of the global HIV/AIDS epidemic with the first cases recorded in 1981[10], and studies published until December 2020 were included. It should be noted that, although the initial search period was 1981, it was only from 1989 that studies adhering to this scoping review were found.

Data collection and organization

A three-step-search strategy was developed by a librarian with experience in the health sciences. To determine the correct terms, a search was carried out in DeCS, MeSH and Embase's Emtree tool where, in addition to the exact descriptors, alternative terms and synonyms are presented. The exact descriptors used were "Nursing Education", "Sexually Transmitted Diseases", "Nursing" and "Nursing Students". Subsequently, alternative terms were added and, in the "Sexually Transmitted Diseases" descriptor, the exact and alternative descriptors of each Incurable STI were also included with the AND and OR Boolean operators.

The search strategies were applied on February 23rd, 2021, in PubMed, Web of Science, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS) (Chart 1).

Chart 1 - Data search strategy. Florianópolis, SC, Brazil, 2021

Sources	Search strategy
PubMed, Web of Science, Embase and CINAHL	((“Education, Nursing”[Mesh] OR “Nursing Education” OR “Nursing Educations” OR “Nursing Faculty” OR “Nursing School” OR “Students, Nursing”[Mesh] OR “Nursing Students” OR “Nursing Student” OR “Nurse student” OR “Nurse students” OR “Pupil Nurses” OR “Pupil Nurse”) AND (“Sexually Transmitted Diseases”[Mesh] OR “Sexually Transmitted Diseases” OR “Sexually Transmitted Disease” OR “STIs” OR “STI” OR “Venereal Diseases” OR “Venereal Disease” OR “Sexually Transmitted Infections” OR “Sexually Transmitted Infection” OR “STDs” OR “Papillomaviridae”[Mesh] OR “Papillomaviridae” OR “Human Papilloma Virus” OR “Human Papilloma Viruses” OR “Human Papillomavirus Viruses” OR “Human Papillomavirus Virus” OR “HPV” OR “HIV”[Mesh] OR “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”[Mesh] 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” OR “Herpesvirus

	1, Human"[Mesh] OR "Human Herpesvirus 1" OR "Human Herpes Virus 1" OR "Herpes Simplex Virus Type 1" OR "Herpes Simplex Virus 1" OR "HHV-1" OR "HSV-1" OR "HSV1" OR "HSV 1" OR "Hepatitis B"[Mesh] OR "Hepatitis B" OR "Type B Hepatitis" OR "Hepatitis Type B"))
LILACS	(("Nursing Education" OR "Nursing Educations" OR "Nursing Faculty" OR "Nursing School" OR "Nursing Students" OR "Nursing Student" OR "Nurse student" OR "Nurse students" OR "Pupil Nurses" OR "Pupil Nurse" OR "Educação em Enfermagem" OR "Curso de Enfermagem" OR "Cursos de Enfermagem" OR "Ensino de Enfermagem" OR "Estudantes de Enfermagem" OR "Estudante de Enfermagem" OR "Alunos de Enfermagem" OR "Aluno de Enfermagem" OR "Educación en Enfermería" OR "Enseñanza de Enfermería" OR "Estudiantes de Enfermería" OR "Estudiante de Enfermería" OR "Alumnos de Enfermería" OR "Alumno de Enfermería") AND ("Sexually Transmitted Diseases" OR "Sexually Transmitted Diseases" OR "Sexually Transmitted Disease" OR "STIs" OR "STI" OR "Venereal Diseases" OR "Venereal Disease" OR "Sexually Transmitted Infections" OR "Sexually Transmitted Infection" OR "STDs" OR "Papillomaviridae" OR "Human Papilloma Virus" OR "Human Papilloma Viruses" OR "Human Papillomavirus Viruses" OR "Human Papillomavirus Virus" OR "HPV" OR "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" OR "Human Herpesvirus 1" OR "Human Herpes Virus 1" OR "Herpes Simplex Virus Type 1" OR "Herpes Simplex Virus 1" OR "HHV-1" OR "HSV-1" OR "HSV1" OR "HSV 1" OR "Hepatitis B" OR "Type B Hepatitis" OR "Hepatitis Type B" OR "Doenças Sexualmente Transmissíveis" OR "DST" OR "DSTs" OR "Doença Sexualmente Transmissível" OR "Doenças Sexualmente Transmissíveis" OR "Doenças Sexualmente Transmitidas" OR "Doenças Venéreas" OR "Doenças de Transmissão Sexual" OR "IST" OR "Infecções Sexualmente Transmissíveis" OR "Infecções Sexualmente Transmitidas" OR "Papillomavirus Humano" OR "Papillomavirus Humanos" OR "Papiloma Vírus Humano" OR "Papiloma Vírus Humanos" OR "Papilomavírus Humano" OR "Papilomavírus Humanos" OR "Vírus da Imunodeficiência Humana" OR "Vírus de Imunodeficiência Humana" OR "Vírus Associado a Linfadenopatia" OR "Vírus Linfotrópico para Células T Humanas Tipo III" OR "Vírus Tipo III T-Linfotrópico Humano" OR "HTLV-III-LAV" OR "Síndrome de Imunodeficiência Adquirida" OR "SIDA" OR "Síndrome da Deficiência Imunológica Adquirida" OR "Síndrome da Imunodeficiência Adquirida" OR "Síndrome de Deficiência Imunológica Adquirida" OR "Herpesvirus Humano 1" OR "HSV-1" OR "Herpes Simplex 1" OR "Herpes Simplex 2" OR "Herpesvirus Humano Tipo 1" OR "Vírus do Herpes Simplex 1" OR "Hepatite B" OR "Hepatite Viral B" OR "Enfermedades de Transmisión Sexual" OR "ETS" OR "ETSs" OR "Enfermedades Sexualmente Transmisibles" OR "Enfermedades Sexualmente Transmitidas" OR "Enfermedades Venéreas" OR "ITS" OR "Infecciones Sexualmente Transmitidas" OR "Infecciones de Transmisión Sexual" OR "Virus de Inmunodeficiencia Humana" OR "Virus de la Inmunodeficiencia Humana" OR "Virus Asociado a Linfadenopatia" OR "Virus Tipo III Linfotrópico de la Célula Humana T" OR "Virus Tipo III Linfotrópico-T Humano" OR "Virus del SIDA" OR "Síndrome de Inmunodeficiencia Adquirida" OR "Síndrome de Deficiencia Inmunológica Adquirida" OR "Síndrome de la Inmunodeficiencia Adquirida" OR "Virus 1 del Herpes Simple"))

The references found were imported into the *Endnote* X9® software, where duplicates were removed and subsequently imported into the *Covidence*® reference management

software. The titles and abstracts were first evaluated by two independent authors (S.P. and M.S.M.) and, in the 240 studies with divergent decisions, a third reviewer (A.R.S.) resolved the conflicts. The studies included in the first stage were read in full and included in and/or excluded from the review according to adherence to the study. There were 27 studies with divergence and the technique described above was followed.

Data analysis

For extraction of the results, an instrument was developed in order to identify the main characteristics of the studies found, such as the name of the author(s); year of publication; country of origin; objective/purpose; study population and sample size; methodology/method; type of intervention; results; and main discoveries. The data extracted were accessed using content analysis to find consensus across the records, as well as to summarize and synthesize results[11]. The analysis took into account diverse information regarding the scenario where the educational activity took place, instruments and resources used, namely: STIs addressed, detailing how the activity took place, limitations encountered and results obtained. Thus, it was possible to find similarities in the development of these practices and list three categories: Teaching Scenarios and Strategies; Teaching Focus; and Teaching Effectiveness.

Ethical aspects

For being a literature review, this study was not submitted to any Ethics Committee for Research involving Human Beings; however, Resolution No. 466/12 of the National Health Council was respected, with regard to analysis and sharing of the results.

RESULTS

A total of 3,687 results were found in the initial search, 2,796 after removing duplicates, with inclusion of 41 studies in this review. Specific details of the study selection stages are shown in the *Preferred Reporting Items for Systematic Reviews and Meta-analyses Extension for Scoping Reviews* (PRISMA-ScR) flowchart[12] (Figure 1).

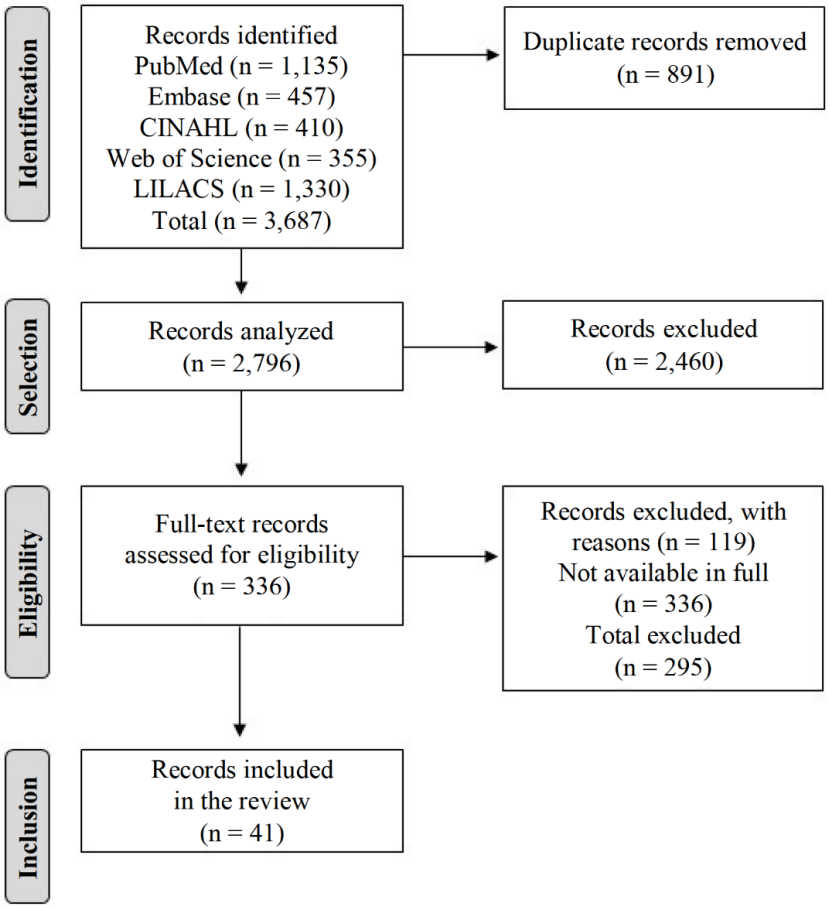

Figure 1 - Scoping Review results according to PRISMA-ScR.Florianópolis, SC, Brazil, 2021

Source: Authors (2021).

With regard to the 295 studies excluded, it is worth noting the difficulty accessing articles in full and their access availability due to the initial time frame dating back to the 1980s. Of these, 176 studies were not available despite going through a screening process by a librarian. The remaining 119 studies were excluded for not meeting the inclusion criteria. The full description of the articles included can be found in Chart 2.

Chart 2 - Characterization of the sources that make up the study sample. Florianópolis, SC, Brazil, 2021

Country	Type of source	Type of study	Date published	STIs
USA n=24 (58.54%) (13-23,25-26,28-33,35,37,48-49,51)	Articles n=35 (85.37%)(7,14-15,17-27,29,31-35,37-48,50-52)	Quantitative n=31 (75.61%) (13,16,18-24,29-32,34-39,41-50,52)	1989 - 1999 n=17 (41.46%)(13-29)	HIV/AIDS n=35 (85.37%)(7,13-35,37,39-41,44-45,47-49,51-52)
Brazil n=3 (7.32%)(7,43,50)	PhD theses n=5 (12.20%) (13,16,28,30,49)	Qualitative n=9 (21.95%)(7,14-15,17,25,27,33,40,51)	2000 - 2009 n=4 (9.76%)(30-33)	HPV n=3 (7.32%)(36,43,46)

India n=3 (7.32%)[41-42,44]	MSc dissertation n=1 (2.44%)[36]	Quantitative n=1 (2.44%)[28]	2010 - 2020 n=20 (48.78%) [7,34-52]	Hepatitis B n=1 (2.44%)[42]
Canada n=2 (4.88%)[27,40]				More than one STI n=2 (4.88%)[38,50]
USA/India n=2 (4.88%)[39,52]				Herpes Simplex n=0 (0%)
Philippines n=1 (2.44%)[24]				
China n=1 (2.44%)[34]				
Peru n=1 (2.44%)[36]				
Turkey n=1 (2.44%)[38]				
Chile n=1 (2.44%)[45]				
Saudi Arabia n=1 (2.44%)[46]				
South Africa n=1 (2.44%)[47]				

Source: The authors (2021).

As a way to evaluate the educational actions/interventions, 32 studies (78.05%) used the pre- and post-test with instruments available in the literature and prepared by the authors (Chart 3).

Chart 3 - Instruments used to evaluate the educational actions. Florianópolis, SC, Brazil, 2021

Instrument	No. of studies in which it was used
AIDS Attitude Scale (AAS)	4
AIDS Education Information Questionnaire	1
AIDS Health Care Belief Scale	1
AIDS Information Survey	1
AIDS Knowledge & Attitude Questionnaire (AKAQ)	1
AIDS Knowledge	1
AIDS Knowledge Questionnaire	1
AIDS Knowledge Scale (AKS)	2
AIDS Knowledge, Attitudes, and Concerns Instrument	1
Attitude Survey Instrument	1

Attitudes Toward Caring For HIV+ positive persons	1
Attitudes Toward Computing in Nursing	1
Caring for persons with AIDS	1
General Self-Efficacy Scale (GSES)	1
HIV/AIDS Stigma Instrument-Nursing Student (HASI-NS)	2
HIV Knowledge Test	1
HIV Knowledge Inventory	1
HIV Knowledge Questionnaire (HIV-KQ-18)	1
HIV/AIDS Questionnaire for Health Care Providers and Staff	1
Index of Homophobia	1
Kolb's Learning Style Inventory	1
Knowledge-Based National Council Licensure Examination (NCLEX)	1
NIMART Trainees	1
Nurse Willingness Questionnaire (NWQ)	1
Nursing Care Comfort Scale (NCCS)	2
Nursing Students' Willingness Questionnaire (NSWQ)	2
Nursing Students' Opinions and Beliefs about AIDS Survey	1
Obstetrical HIV/AIDS Knowledge Scale	1
Obstetrical Knowledge Scale (OKS)	1
The State-Trait Anxiety Inventory (STAI)	2
Willingness to Provide Care Scale	1

Source: The authors (2021).

The findings indicate various methodologies and educational actions/interventions carried out for undergraduate Nursing students at the global level. Through content analysis, it was possible to define three categories: Teaching Scenarios and Strategies; Teaching Focus; and Teaching Effectiveness.

Teaching Scenarios and Strategies

In the 41 studies it was possible to identify a description of the scenarios and strategies used in the development of educational actions/interventions for undergraduate Nursing students. Among these, the approaches were the following: internship environments (n=2)[15,51]; extension activities (n=2)[7,50]; strategies to promote students teaching other students (n=4)[32,35,38-39]; program of multidisciplinary activities for female students in the health area (n=1)[46], lectures for carrying out educational activities (n=09)[13,16-17,20,24,26,39,41-42]; comparative teaching methods (n=9)[16,20,23-24,28,30-31,43-44]; training scenarios aimed at teaching HIV/AIDS (n=7)[14,22,27,29,34,45,47] and HPV (n=1)[36]; event focused on HIV/AIDS as an optional activity (n=1)[25]; and educational actions in the form of workshops (n=5)[18,21,35,37,40].

The use of technologies (e.g., computers with scenarios) was also pointed out to assist in the educational actions[16,19,22,43,52] and role-playing[33] to train Nursing students[45,49]. Additionally, nine studies included people with HIV+ to participate in their educational activities, integrating students into this population[24-25,27,30-31,34,40,48,52]. Contact with HIV+ people created opportunities for the students to face their myths, fears and prejudices, as well as to improve their understanding and awareness about the discrimination suffered by people with HIV[34].

Additionally, some studies included other health professionals with the intention of increasing the knowledge range and introducing multidisciplinary work to people with HIV[48], participation of an expert nurse in the area[30,34], an expert teacher in the area[20] and a specialist in infectious diseases[38,40]. In 20 studies it was possible to identify the description of resources that have been used to assist in the implementation of educational actions aimed at Nursing students (Figure 2).

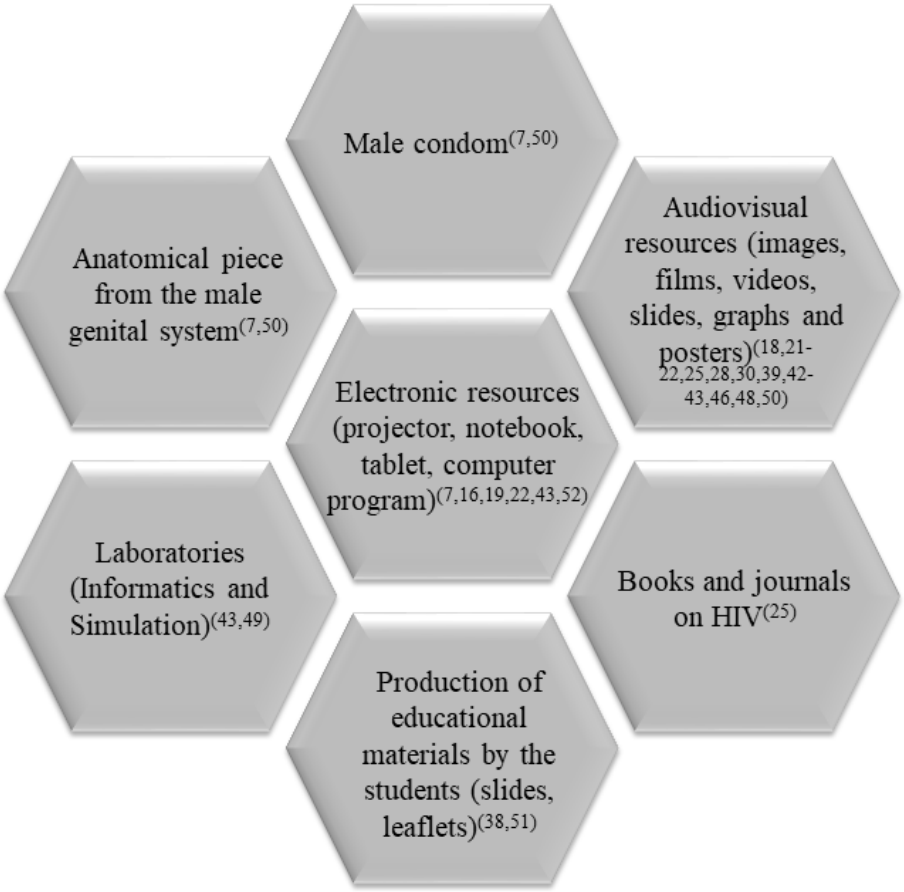

Figure 2 - Resources used in undergraduate education. Florianópolis, SC, Brazil, 2021

Source: Authors (2021)

Teaching Focus

In 33 studies it is possible to identify the focus of their educational actions/interventions. Various aspects stand out in the studies related to HIV/AIDS, namely: the history of AIDS (n=3)[16,35,45]; statistics and epidemiological data (n=9)[7,15,18,28-29,35,37,41,47]; questions associated with treatments (n=11)[7,15-16,18-19,29-30,45,47,49,51]; basic precautions (n=5)[7,15-16,34,37];

knowledge about prevention (n=6)[16,19,25,30,34,41]; transmission means (n=8)[16,19,30,34,41,45,49,51]; clinical manifestations and signs and symptoms (n=7)[7,16,19,41,44-45,47]; risk factors (n=3)[16,18,44]; pathophysiology (n=3)[28,45,49]; HIV-related diseases (n=2)[27,47]; and instructions regarding exams and tests (n=3)[37,45,51].

The studies addressed ethical issues related to the infection and to the health care for this population[14,24,29,35,37,45,47], the psychosocial impact exerted by the infection[27,29,51], Nursing care for people with HIV/AIDS[15,18,27-28,35,44,49], health needs[14,25], pre-delivery/intrapartum/postpartum and newborn care[35], current problems and challenges in caring for clients with HIV/AIDS[22], ART use in adults and children and palliative care for PLHIV[47]; and pre- and post-exposure prophylaxis, sexual health education, violence and transgender populations[51].

Stigma appeared as the learning focus associated with health care in three studies. The approach of increasing knowledge to decrease fears about the possibility of HIV transmission during casual contacts, information about HIV epidemiology, transmission misconceptions and ways to prevent the disease, including (PPE) use in the hospital, was found in one study[39]; and another study resorted to an intervention to reduce HIV stigma for Nursing students and ward staff via tablets[52], social stigmas and work relationships with individuals with HIV[29].

Two studies addressed more than one STI, in the form of an educational theatrical piece in the style of a comedy written in partnership with teachers, students from the Group to Combat Drugs and AIDS, and students from the theater group[38,50]. In turn, three studies focused on interventions for HPV, with activities aimed at teaching HPV, cervical cancer risk factors, prevention and signs and symptoms[36,43,46]. As for the approach to knowledge and awareness about various aspects of Hepatitis B and C, one study addressed the etiology, transmission means, diagnosis, prevention, treatment and information sources[42].

The teaching focus for Incurable STIs covers aspects related to epidemiology, transmission and treatment, among others. It manages to go further and addresses important issues such as stigma, students' anxiety and management of people with HIV. It is noted that the first studies covering the end of the 1980s and the 1990s focused on introducing the theme of AIDS in order to introduce the students to what the epidemic was about.

There are few studies that address the teaching of HPV or hepatitis B and no study has addressed HSV, evidencing that teaching has been mostly associated with HIV/AIDS in the last 40 years.

Teaching Effectiveness

The studies used different teaching methodologies to promote knowledge about the theme. In 40 studies it is possible to identify a description of the outcome enabled by the action/intervention in promoting the teaching of the theme for Nursing students.

Studies using internships showed positive results in improving the students' concerns, fears and discomfort[15,51]. The use of extension projects eased the students' understanding of autonomy in the health-disease process and collective health[7], as well as knowledge about STIs and the need to maintain training and expand discussions[50].

Didactic teaching and experiential learning with HIV+ people and role-playing brought about an increase in knowledge, empathy or attitudes towards HIV[24,33]. An educational intervention on stigma and HIV transmission showed an increase in the students' general mean knowledge level[39]. In a participatory learning activity followed by the lecture method, there was also an increase in the knowledge level[41].

Studies aimed at controlling the anxiety level in the students showed that using lectures on HIV/AIDS[26] and participation in anxiety awareness exercises in an experimental

format[21] are positive for reducing anxiety and contributing to learning.

The knowledge and attitudes towards AIDS through lectures indicate that there were significant differences in relation to the homophobia degree and knowledge about AIDS[13]. Also regarding HIV knowledge, a number of studies pointed to an increase in the number of correct answers[29,32,47] and greater knowledge gain in relation to HIV prevention, treatment and general knowledge[47]. As for the care of patients with HIV, a study points out that the educational intervention carried out by specialist professionals in the area and PLHIV was positive in terms of care provision[48].

There are also positive results regarding an optional course on HIV/AIDS where conversations with PLHIV contributed a remarkable experience for the students[14]. The students indicated greater knowledge and impact of the experience in their lives[27]; participation in a specific event on the theme of AIDS means that the students developed empathy with individuals and families[25]; and the course resulted in the students feeling comfortable providing basic Nursing care to people without knowing whether or not they were HIV+[22].

There are also positive evaluations about the peer-multiplier format[35,37], with important changes in the stigma level scores for the students who had no experience with people with HIV/AIDS. After the intervention, in a workshop format, a considerable increase in the perception of stigma is evidenced[37]. The study used body mapping, a tool to ease the students' understanding of the experiences of living with HIV and a strategy to educate PLHIV about their own health, and brought about students' reflections on the unawareness of their stigmas and relevant information regarding HIV[40].

There is also the use of comparative methods to assess which strategy exerted the greatest influence on the students' knowledge level[20,28,30-31,43-44]. Lectures on AIDS and the use of structured controversy indicate that the students who participated in the structured controversy were more positive about the intention to provide care to HIV+ patients[20]. However, when the lecture and discussion is compared to video and discussion, the former was more effective in knowledge acquisition[28].

Additionally, in HIV teaching, when lecture and discussion is compared to lecture and experiential learning method, the former is more effective[30]; lecture (basic educational content on HIV) and lecture plus experimental method that included role-playing presented a weak, although statistically significant, relationship between the perception and willingness to provide care to patients with HIV[31].

In the dialoged lecture, the Intervention Group had access to a hypermedia about STIs, and it is stated that the students had limited knowledge about them and that few mentioned experience in the course or previous internship in an STI assistance service[43]. Expository teaching and the concept mapping method increased the scores of both groups; however, the scores using the conceptual mapping technique for attitudes towards patients with HIV/AIDS were higher than those obtained with the lecture method[44].

As for the use of technologies in teaching, there were positive results regarding the attitudes related to the care of HIV+ people, in relation to Informatics in Nursing. Students who participated in the class using a computer program had higher scores in less time than those who participated in the lecture and discussion[16]; just as the use of an educational computer program in two formats pointed to concept mapping as a tool with positive results on the theme of AIDS[19]. Another study that used educational sessions via tablets shows an increase in knowledge, a decrease in misunderstandings and less concern with acquiring HIV in the workplace[52].

Regarding the use of clinical simulation, in a training program for Chilean students using actors on the theme of HIV treatment, improvements were shown in terms of knowledge, increased risk perception and decreased stigma and discrimination[45]. A research study with Nursing students who participated in simulation through role-playing and music resulted

in significant improvements in knowledge about AIDS; however, in the attitudes related to AIDS, there was an improvement only in the Intervention Group[23].

As for the educational actions aimed at HPV, in an educational intervention in the form of an educational program about HPV and cervical cancer, an increase in the knowledge level after the intervention was pointed out[36]. A research study conducted with Nursing students as peer-multipliers indicated a statistically significant increase in knowledge after the intervention[38]. A program of activities carried out with health courses brought about positive results regarding the educational intervention focused on HPV; and the students were able to identify effective preventive measures for cervical cancer after the campaign[46].

General knowledge about Hepatitis B and C improved after an intervention in a lecture, more specifically in the following aspects: etiology and transmission mean; age group commonly affected; and blood, sexual fluids and needle prick as transmission routes[42].

These results show that most of the studies are effective in their educational interventions, contributing significant improvements in terms of knowledge, attitudes, perception, anxiety and stigma, among other factors.

Despite the various promising results regarding the educational interventions, two studies show that their interventions did not obtain positive results. With regard to comfort in providing care to patients with HIV/AIDS, there was no difference between the pre- and post-test scores, concluding that the intervention in the workshop format did not affect the students' general comfort degree to provide care[18]. Another study showed that using high-fidelity simulation (HFS) as a teaching strategy for knowledge about HIV did not present statistical significance[49].

DISCUSSION

Teaching Incurable STIs requires the teachers' pedagogical competence to articulate different types of knowledge and motivate students to assume (co)responsibility for the learning process. To choose the best teaching methods, it is important to consider several aspects, such as educational objectives, teachers' experience and types of students, among others[53].

In the studies found, it is possible to identify different ways of promoting teaching for Nursing students, with the following among them: lectures, theoretical-practical fields, extension projects, events (training, programs, workshop), and use of technologies (simulation, tablet, computer programs), among others. Among the strategies adopted in the teaching-learning process, some teachers still prioritize methodological procedures centered on the traditional expository strategy, with the use of audiovisual resources such as a projector and videos[54].

Although there is a guideline for the implementation of active methodologies, it is still possible to observe lack of knowledge, resistance and difficulties in the use of such methodologies in the teaching practice in health[54]. Breaking away from traditional teaching requires skills and competencies, as well as a desire to innovate. Professors need to learn new methodologies that assist in the development of teaching capable of transforming Nursing practices. The use of active methodologies stimulates and develops the students' critical capacity and, as health technology advances, the expectations of new graduated nurses also increase[53,55].

Nursing students need stimuli to develop clinical reasoning and prioritization and respond to the patients' changing needs[55]. However, despite being considered traditional

teaching, lectures related to educational interventions in the face of incurable STIs also present positive results in terms of their effectiveness in building Nursing students' knowledge. In comparative studies, for example, lectures appear as a more effective methodology than the intervention methodology[28,30].

It is also important to highlight the use of technologies for the development of educational interventions. Ease of access to information coming from the Internet and its immense availability of digital resources ends up configuring a new profile of students, the digital natives, with the need for quick answers to questions and the expectation that technologies will be incorporated into the teaching environment[56].

Faced with this reality, the use of simulated, and virtual realities with increasingly complex manikins arises, with the objective of preparing future Nursing professionals, as well as providing safety before effectively initiating the practices with humans. Using these technological resources allows recognizing possible errors in the procedures, which can be corrected before being applying them to a patient. These strategies enhance the students' critical thinking[57]. These experiences become opportune to ease understanding and self-awareness of the limitations[51].

With regard to the reduction of new HIV/AIDS cases, access to health care and reduction of disparities and inequalities in health related to HIV, nurses and Nursing students can and should play an important role in achieving these objectives. A number of research studies point out that Nursing students' attitudes, fears and negative perceptions are associated with lack of knowledge, and education about AIDS, for example, can develop positive attitudes in care provision[58-60]. To this end, it becomes necessary for Nursing educators to equip their students with knowledge and understanding about the topic, as well as that assist in the development of clinical skills during undergraduate studies[48]. On the other hand, they also have a professional duty to develop strategies that reduce negative attitudes and disseminate preventive education to reduce the individual and social risk of society in general. Appropriate education can reduce fear of contagion, discrimination and stigma and promote positive attitudes towards the care to be provided to this population[60-61].

There are some limitations related to this scoping review that should be mentioned. The fact that it was a study with a wide time scope rendered access to the full content of studies published in the 1980s and 1990s more difficult, being discarded as potential results. The scoping review focus is to provide breadth rather than depth of evidence on some particular area or topic; therefore, scoping reviews are inherently limited. In addition to that, a scoping review depends on the quality and availability of the diverse information reported in the studies included, which can vary considerably across studies and affect reliability of the results. The study selection process and the synthesis of the results depend on the reviewers' subjective interpretation, which can introduce bias and limit validity of the results. Finally, scoping reviews do not include a critical assessment of the methodological quality of the studies included, which may affect reliability of the conclusions and practical implications.

It is hoped that these findings help visualize the world panorama of how the teaching of the theme has been introduced to undergraduate Nursing students and influence the conduction of future studies. That brings about reflections on the need for teaching HPV, Hepatitis B and HSV, which appeared in evidently smaller numbers when compared to teaching HIV/AIDS.

CONCLUSION

The findings meet the objective of this research and evidence that Incurable STIs are in fact being taught. Undergraduate Nursing students are being introduced to the topic

of HIV/AIDS, in the vast majority, and occasionally to HPV and Hepatitis B. As for HSV, no study was evidenced in this review. In this way, management and concern with HIV/AIDS continues to be a protagonist in teaching the theme of incurable STIs.

Varied resources and strategies were found in the educational activities, which shows the advancement of methodologies and inputs to qualify teaching. As for the topics that have been addressed in the educational activities targeted at incurable STIs, different approaches are identified, but with focuses much more centered on the care clinic than on the care relationships between Nursing professionals and people with incurable STIs. It is worth noting the studies that focus on the importance of the profession with regard to prevention and promotion in health and in the students' training as a whole.

As for the effectiveness of the interventions, all of them show important results in the development of Nursing students' knowledge, attitudes, reduction of stigma and care provision to people with HIV/AIDS. Some studies place Nursing students in the role of peer-multipliers, that is, more committed to this theme and, from their undergraduate studies, to improving their role in health promotion in the face of STIs.

ACKNOWLEDGMENTS

National Council for Scientific and Technological Development (CNPq) - Funding Code 001.

REFERENCES

1. Soe NMK, Bird Y, Schwandt M, Moraros J. Sti health disparities: a systematic review and metaanalysis of the effectiveness of preventive interventions in educational settings. Int J Environ Res Public Health. [Internet]. 2018 [cited on 2023 feb 24];15(12):2819. Available in: https://doi.org/10.3390/ijerph15122819.

2. Ministério da Saúde (BR). Departamento de Doenças de Condições Crônicas e Infecções Sexualmente Transmissíveis. Infecções Sexualmente Transmissíveis. [Internet]. Brasília: Ministério da Saúde; 2020 [cited on 2023 feb 24]. Available in: http://www.aids.gov.br/pt-br/publico-geral/o-que-sao-ist.

3. Pinto VM, Basso CR, Barros CR dos S, Gutierrez EB. Factors associated with sexually transmitted infections: a population based survey in the city of São Paulo, Brazil. Ciênc saúde colet. [Internet]. 2018 [cited on 2023 feb 24];23(7):2423-32. Available in: https://doi.org/10.1590/1413-81232018237.20602016.

4. World Health Organization (WHO). Sexually transmitted infections (STIs). [Internet]. Geneva: WHO; 2020 [cited on 2023 feb 24]. Available in: https://www.who.int/health-topics/sexually-transmitted-infections#tab=tab_1.

5. World Health Organization (WHO). Sexually transmitted infections (STIs). Key facts. Geneva: WHO; 2019 [cited on 2023 feb 24]. Available in: https://www.who.int/en/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis).

6. Silva AR, Padilha MI. Nursing academics and their self-care in relation to sexually transmitted diseases. Rev. enferm. atenção saúde. [Internet]. 2016 [cited on 2023 feb 24]; 5(1):36-50. Available in: https://doi.org/10.18554/reas.v5i1.1745.

7. Carmo BAG do, Quadros NRP, Santos MMQ, Macena JKF, Oliveira M de FV de, Polaro SHI, *et al.* Health education on sexually transmissible infections to Nursing college students. Rev. bras. promoç. saúde. [Internet]. 2020 [cited on 2023 feb 24];33:1-7. Available in: https://doi.org/10.5020/18061230.2020.10285.

8. Peters MDJ, Godfrey C, Mcinerney P, Munn Z, Tricco AC, Khalil H. Chapter 11: Scoping Reviews (2020 version). In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis, JBI. [Internet]. 2020 [cited on 2023 feb 24]. Available in: https://doi.org/10.46658/JBIMES-20-12.

9. Petry S, Padilha MI, Mazera MS, Silva AR. Ensino sobre Infecções Sexualmente Transmissíveis Incuráveis para Estudantes de Graduação em Enfermagem: Protocolo de revisão de escopo. Enferm. actual Costa Rica. [Internet]. 2023 [cited on 2023 feb 24]; 44:1-10. Available in: https://doi.org/10.15517/enferm.actual.cr.i44.47822.

10. Ministério da Saúde (BR). Departamento de Vigilância, Prevenção e Controle das IST, do HIV/Aids e das Hepatites Virais. História da aids. [Internet]. Brasília: Ministério da saúde; 2021 [cited on 2023 feb 24]. Available in: http://www.aids.gov.br/pt-br/centrais-de-conteudos/historia-aids-linha-do-tempo.

11. Bardin L. Análise de conteúdo. São Paulo: Edições 70; 2016. 141 p.

12. Tricco AC, Lillie E, Zarin W, O'brien KK, Colquhoun H, Levac D, *et* al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Intern Med. [Internet]. 2018 [cited on 2023 feb 24];169(7):467-73. Available in: https://doi.org/10.7326/M18-0850.

13. Henderson MM. Effects of an education program upon the AIDS knowledge and attitudes of associate degree nursing students in Arkansas. Disssetation for degree of Doctor of Education, University of Arkansas, 1989. 120 p.

14. Hale PJ. An elective course on AIDS. J Nurs Educ. [Internet]. 1989 [cited on 2023 feb 24];28(5):232-4. Available in: https://doi.org/10.3928/0148-4834-19890501-12.

15. Matocha LK, Hayes ER. Student clinical experience with persons who are HIV-positive or have ARC/AIDS: a model of success. J Nurs Educ.; 29(2):90-2.

16. Rumfelt JJ. The relationship of learning style and type of instruction about AIDS with achievement and attitude of college nursing students. Doctor of Education Degree, Southern Illin o is University, 1991. 180 p.

17. Lewis JB, Eakes GG. The AIDS care dilemma: an exercise in critical thinking. J Nurs Educ. [Internet]. 1992 [cited on 2023 feb 24]; 31(3):136-7. Available in: https://doi.org/10.3928/0148-4834-19920301-10.

18. Williams RD, Benedict S, Pearson BC. Degree of comfort in providing care to PWAs: effect of a workshop for baccalaureate nursing students. J Nurs Educ. [Internet]. 1992 [cited on 2023 feb 24];31(9):397-402. Available in: https://doi.org/10.3928/0148-4834-19921101-06.

19. Wood CL. A computer-based AIDS education program for nursing students. Computers in Nursing. 1992;10(1):25-35.

20. Pederson C. Structured controversy versus lecture on nursing students' beliefs about and attitude toward providing care for persons with AIDS. J Contin Educ Nurs [Internet]. 1993 [cited on 2023 feb 24];24(2):74-81. Available in: https://doi.org/10.3928/0022-0124-19930301-09.

21. Bower DA, Webb AA, Stevens D. Nursing student's knowledge and anxiety about AIDS: an experiential workshop. J Nurs Educ. [Internet]. 1994 [cited on 2023 feb 24];33(6):272-6. Available in: https://doi.org/10.3928/0148-4834-19940601-09.

22. Williams RD. Effect of an hiv aids elective on nursing-students knowledge and comfort levels in providing care to pwas. J Nurs Educ. [Internet]. 1995 [cited on 2023 feb 24];34(4):177-9. Available in: https://doi.org/10.3928/0148-4834-19950401-09.

23. Larson-Presswalla J, Rose MA, Cornett P. Empathic learning: an innovative teaching strategy to improve attitudes toward caring for persons with HIV/AIDS. J Assoc Nurses AIDS Care. [Internet]. 1995 [cited on 2023 feb 24];6(3):19-22. Available in: https://doi.org/10.1016/S1055-3290(95)80013-1.

24. Stiernborg M, Zaldivar SB, Santiago EG. Effect of didactic teaching and experiential learning on nursing students) AIDS-related knowledge and atitudes. AIDS Care. [Internet]. 1996 [cited on 2023 feb 24];8(5):601-

8. Available in: https://doi.org/10.1080/09540129650125551.

25. Patsdaughter CA, Hall JM, Stevens PE. A critical experiential teaching strategy: student and faculty participation in an AIDS Walk. J Nurs Educ. [Internet]. 1996 [cited on 2023 feb 24];35(5):223-6. Available in: https://doi.org/10.3928/0148-4834-19960501-08.

26. All AC, Sullivan L. The effects of an HIV/AIDS educational programme on the anxiety level of nursing students. J. Adv. Nurs. [Internet]. 1997 [cited on 2023 feb 24];26(4):798-803. Available in: https://doi.org/10.1046/j.1365-2648.1997.00377.x.

27. Wyness MA, Goldstone I. Teaching about HIV/AIDS: the lessons learned. Int Nurs Rev. [Internet]. 1998 [cited on 2023 feb 24];45(6):182-6. Available in: https://doi.org/10.1046/j.1466-7657.45.no.6issue342.7.x.

28. Earl CE. Health care beliefs of nursing students as predictors of intentions to care for AIDS patients. Degree of Doctor of Public Administration. Western Michigan University. [Internet]. 1998 [cited on 2023 feb 24]. 192p. Available in: https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=2561&context=dissertations.

29. Carney JS, Werth JL, Martin JS. The impact of an HIV/AIDS training course for baccalaureate nursing students. J Nurs Educ. [Internet]. 1999 [cited on 2023 feb 24];38(1):39. Available in: https://doi.org/10.3928/0148-4834-19990101-11.

30. Cornelius JBB. The effectiveness of an experiential learning method on baccalaureate nursing students' knowledge, attitudes, willingness and perceived preparedness to provide care to HIV seropositive individuals (Immune deficiency). Doctor of Nursing Science. Rush Univeristy. 2000. 165p.

31. Cornelius JB. Senior nursing students respond to an HIV experiential-teaching method with an African-American female. J Natl Black Nurses Assoc. [Internet]. 2004 [cited on 2023 feb 24];15(4):11-6. Available in: https://pubmed.ncbi.nlm.nih.gov/15853281/.

32. Brown EJ, Smith FB. A tri-level HIV-prevention intervention. Int J Nurs Educ Scholarsh [Internet]. 2005 [cited on 2023 feb 24];2(1):1-12. Available in: https://doi.org/10.2202/1548-923x.1209.

33. Penny K. HIV/AIDS role-play activity. J Nurs Educ. [Internet]. 2008 [cited on 2023 feb 24];47(9):435-6. Available in: https://doi.org/10.3928/01484834-20080901-08.

34. Yiu JW, Winnie WSW, Winnie SH, Ying YC. Effectiveness of a knowledge-contact program in improving nursing students' attitudes and emotional competence in serving people living with HIV/AIDS. Soc. Sci. Med. [Internet]. 2010 [cited on 2023 feb 24];71:38-44. Available in: https://doi.org/10.1016/j.socscimed.2010.02.045.

35. Diesel HJ, Nsagha DS, Sab CM, Taliaferro D, Rosengurg N. A workshop report on promoting HIV/AIDS understanding through a capacity building train-the-trainer educational intervention. Pan Afr. Med. J. [Internet]. 2011 [cited on 2023 feb 24];10:17. Available in: https://doi.org/10.4314/pamj.v10i0.72226.

36. Cruz EPP. Intervencion educativa para elevar el nivel de conocimientos sobre cancer de cuello uterino y el virus del papiloma humano en estudiantes de la UNASAM, Filial Barranca, 2010. Magíster en Obstetricia. Universidad Nacional Mayor de San Marcos. [Internet]. 2012 [cited on 2023 feb 24]. 68p. Available in: https://cybertesis.unmsm.edu.pe/bitstream/handle/20.500.12672/2433/Paredes_ce.pdf?sequence=1&isAllowed=y.

37. Diesel H, Ercole P, Taliaferro D. Knowledge and Perceptions of HIV/AIDS among Cameroonian Nursing Students. Int. J. Nurs. Educ. Scholarsh. [Internet]. 2013 [cited on 2023 feb 24];10(1):2009-18. Available in: https://doi.org/10.1515/ijnes-2012-0036.

38. Yenal K, Cicek O. The Effect on the Knowledge Levels of Nursing School Students of the Educational Activities Undertaken for Sexually Transmitted Infections. Sex. [Internet]. 2013 [cited on 2023 feb 24];31(2):201-11. Available in: https://doi.org/10.1007/s11195-013-9296-6.

39. Shah SM, Heylen E, Srinivasan K, Perumpil S, Ekstrand ML. Reducing HIV stigma among nursing

students: a brief intervention. West J Nurs Res. [Internet]. 2014 [cited on 2023 feb 24];36(10):1323-37. Available in: https://doi.org/10.1177/0193945914523685.

40. Maina G, Sutankayo L, Chorney R, Caine V. Living with and teaching about HIV: engaging nursing students through body mapping. Nurse Educ Today. [Internet]. 2014 [cited on 2023 feb 24];34(4):643-7. Available in: https://doi.org/10.1016/j.nedt.2013.05.004.

41. Kamath N, Udayakiran N. Effectiveness of Participatory Learning Activity (PLA) and lecture method on knowledge in HIV/AIDS among Nurs. ing Students. Int. J. Nurs. Educ [Internet]. 2014 [cited on 2023 feb 24];7(2):223-8. Available in: https://doi.org/10.9790/1959-03251821.

42. Mahore R, Mahore SK, Mahore N, Awasthi R. A study to assess knowledge and awareness about the hepatitis b and c among nursing college students of central índia. J. Evol. Med. Dent. Sci. [Internet]. 2015 [cited on 2023 feb 24]; 4(29):5033-9. Available in: https://doi.org/10.14260/jemds/2015/733.

43. Holanda VR, Pinheiro AKB. Comparison of learning strategies in face-to-face and online courses on sexually transmitted diseases. Texto & contexto enferm. [Internet]. 2015 [cited on 2023 feb 24];24(2):530-8. Available in: https://doi.org/10.1590/0104-07072015002402014.

44. Mythili D, Gandhi S, Thirumoorthy A, Vijayalakshmi P. Effect of Uoncept Mapping in Improving Nursing Students' Knowledge and Attitudes Related to Care of HIV/AIDS Patients. Nurs J India. [Internet]. 2015 [cited on 2023 feb 24];106(6):278-81. Available in: https://pubmed.ncbi.nlm.nih.gov/30351764/.

45. Ferrer L, Bernales M, Cianelli R, Cabieses B, Triviño X, Reed R, et al. Mano a mano for health professions students in Chile: a pilot HIV prevention program. J Assoc Nurses AIDS Care [Internet]. 2015 [cited on 2023 feb 24];26(5):680-8. Available in: https://doi.org/10.1016/j.jana.2015.05.004

46. Al-Shaikh GK, Syed SB, Fayed AA, Al-Shaikh RA, Al-mussaed EM, Khan FH, *et al*. Effectiveness of health education programme: level of knowledge about prevention of cervical cancer among Saudi female healthcare students. J Pak Med Assoc. [Internet]. 2017 [cited on 2023 feb 24];67(4):513-20. Available in: https://jpma.org.pk/article-details/8147?article_id=8147.

47. Mngqibisa R, Muzigaba M, Ncama BP, Pillay S, Nadesan-Reddy N. Upskilling nursing students and nurse practitioners to initiate and manage patients on ART: an outcome evaluation of the UKZN NIMART course. J Afr. J. Health Prof. Educ. [Internet]. 2017 [cited on 2023 feb 24];9(3):153-8. Available in: https://doi.org/10.7196/AJHPE.2017.v9i3.879.

48. Frain JA. Preparing every nurse to become an HIV nurse. Nurse Educ Today. [Internet]. 2017 [cited on 2023 feb 24]; 48:129-33. Available in: https://doi.org/10.1016/j.nedt.2016.10.005.

49. Hilderbrand JL. Impact of Simulation on Nursing Students' Self-Efficacy and Knowledge Related to HIV. Doctor of Education. College of Saint Mary. [Internet]. 2017 [cited on 2023 feb 24]. 125p. Available in: https://www.csm.edu/sites/default/files/Hilderbrand.pdf.

50. Silva BB, Lourdes ML, Wysocki AD, Miranda BDP, Silva SR, Ruiz MT. "Forming multipliers for prevention of sexually transmitted infections" and impact on the training of nursings tudents. Enferm. Brasil. [Internet]. 2018 [cited on 2023 feb 24];17(4):361-9. Available in: https://doi.org/10.33233/eb.v17i4.1243.

51. Blake D, Roberson S, Haskins T. Promoting stigma self-awareness in nursing students through brief unconventional clinical experiences. Teach. Learn. Nurs. [Internet]. 2020 [cited on 2023 feb 24];15(4):268-71. Available in: https://doi.org/10.1016/j.teln.2020.06.012.

52. Ekstrand ML, Raj T, Heylen E, Nyblade L, Devdass D, Pereira M, et al. Reducing HIV stigma among healthcare providers in India using a partly tablet-administered intervention: The DriSti trial. AIDS Care. [Internet]. 2020 [cited on 2023 feb 24];32:14-22. Available in: https://doi.org/10.1080/09540121.2020.1739221.

53. Fontana RT, Wachekowski GB, Barbosa SSN. The methodologies used in nursing teaching: the students speak. Educ. Rev. [Internet]. 2020 [cited on 2023 feb 24];36:e220371. Available in: https://doi.

org/10.1590/0102-4698220371.

54. Freitas DA, Santos SEM, Lima LVS, Miranda LN, Vasconcelos EL, Nagliate PC. Teachers' knowledge about teaching-learning process and its importance for professional education in health. Interface. [Internet]. 2016 [cited on 2023 feb 24];20(57):437-48. Available in: https://doi.org/10.1590/1807-57622014.1177.

55. Colares KTP, Oliveira W. Metodologias Ativas na formação profissional em saúde: uma revisão. Revista Sustinere. [Internet]. 2019 [cited on 2023 feb 24];6(2):300-20. Available in: https://doi.org/10.12957/sustinere.2018.36910.

56. Maruxo HB, Prado C, Almeida DM, Tobase L, Grossi MG, Vaz DR. Webquest and Comics in the Formation of Human Resources in Nursing. Rev Esc Enferm USP. [Internet]. 2015 [cited on 2023 feb 24];49(spe2):68-74. Available in: https://doi.org/10.1590/S0080-623420150000800010.

57. Silveira MS, Cogo ALP. Contribuições das tecnologias educacionais digitais no ensino de habilidades de enfermagem: revisão integrativa. Rev Gaúcha Enferm. [Internet]. 2017 [cited on 2023 feb 24];38(2):e66204. Available in: https://doi.org/10.1590/1983-1447.2017.02.66204.

58. Kiyene S. Knowledge, attitudes and practices of fourth year nursing students rthe care of people living With HIV/AIDS (PLWH). Health Sci J. [Internet]. 2021 [cited on 2023 feb 24];15(8):1-12. Available in: https://www.itmedicalteam.pl/articles/knowledge-attitudes-and-practices-of-fourth-year-nursing-students-regarding-the-care-of-people-living-with-hivaids-plwh.pdf.

59. Ceylan E, Koç A. Effect of peer education model on nursing students' knowledge and attitudes towards HIV/AIDS. Nurse Educ Today. [Internet]. 2021 [cited on 2023 feb 24];99:104808. Available in: https://doi.org/10.1016/j.nedt.2021.104808.

60. Panma Y. Factors affecting HIV/AIDS stigma in nursing students. KnE Life Sciences. [Internet]. 2022 [cited on 2023 feb 24]; 89-101. Available in: https://doi.org/doi.org/10.18502/kls.v7i2.10292.

61. Waluyo A, Mansyur M, Earnshaw VA, Steffen A, Herawati T, Maria R, *et al*. Exploring HIV stigma among future healthcare providers in Indonesia. AIDS care. [Internet]. 2022 [cited on 2023 feb 24];34(1):29-38. Available in: https://doi.org/10.1080/09540121.2021.1897777.

Received: 02/02/2022
Approved: 28/02/2023

Associate editor: Dra. Virginia Souza

Corresponding author:
Stéfany Petry
Universidade Federal de Santa Catarina
Rua Hélio de Jesus Montenegro, 390. Bairro Gravatá – Navegantes/SC
E-mail: petrystefany@gmail.com

Role of Authors:
Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Petry S, Padilha MI, Mazera MS, Silva AR**; Drafting the work or revising it critically for important intellectual content - **Petry S, Padilha MI, Silva AR**; Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Padilha MI**. All authors approved the final version of the text.

ISSN 2176-9133