Review Article

Concept analysis of vulnerability to HIV/aids in female sex workers

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ABSTRACT

The aim of this study was to analyze the concept of vulnerability to the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome among female sex workers. The eight stages of the model proposed by Walker and Avant were followed, which are: concept selection; purpose of the conceptual analysis; identification of all possible uses of the concept; determination of the defining attributes; identification of a model case; identification of an additional (contrary) case; identification of antecedents and consequences; and definition of empirical referents. The 36 selected studies show that the concept elaborated for vulnerability to these infirmities in female sex workers involved social, economic, prior health, individual, direct, accessibility and administration aspects besides aspects related to partners. The antecedents were education/illiteracy; financial necessity; Sexually Transmitted Infections. The consequences were social isolation, Infection with the Human Immunodeficiency Virus and other Sexually Transmitted Infections. The study makes a contribution to strengthen the body of scientific work on nursing, by supporting the development of technology aimed at this population for the prevention of these infirmities.

Descriptors: HIV; Women; Sex Workers; Concept Formation; Nursing Research.

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INTRODUCTION

Vulnerability to HIV/AIDS infection remains a challenge to public organs and society, as it is related to intrapersonal and interpersonal choices[1].

The Human Immunodeficiency Virus (HIV) permeates various contexts, it being noteworthy that in Brazil, in the last five years, there has been an annual average of 40 thousand new cases. There is a real epidemic of the disease in key populations in Brazil. Among the affected groups are female sex workers, among whom the prevalence of HIV is 5.3%[2].

Since the beginning of the AIDS epidemic in Brazil, 882,810 cases have been registered, with the North-East accounting for 15.4% of the cases, with an annual mean of 8.8 thousand. In Paraíba, the number of notified AIDS cases between 1980 and 2017 registers a total of 8,102, occupying fifth place in the North-East region[2]. Sex workers have an estimated prevalence of HIV/AIDS 15 times higher than the incidence for the general female population[3].

Prostitution involves, besides the emotional and sexual exchange, material, work and financial means. Vulnerability in the female context is strongly defined by the relationship that a woman maintains with her sexuality and with herself, which has been marked by subordination to male desire. This phenomenon promotes a situation of risk of exposure to HIV/AIDS: as female sex workers are outside the institutions, they are rarely reached and have restricted access to formal education and health services, and to social care organs[3].

It is noteworthy that female sex workers become more vulnerable to HIV infection, as sex is an inherent part of their professional activity, working directly with multiple partners with unknown sexual histories. It is necessary for these women to have knowledge and empowerment and apply them in an attempt to minimize HIV infection[4-5].

Within this epidemiological context in which AIDS is presented, female sex workers tend to be part of this reality for being a social group executing sexual activity as a form of subsistence, using licit and illicit drugs. Often, this sexual activity is performed without the use of a condom, so it may encompass individual, social and programmatic vulnerabilities, such as low levels of education, restricted access to health care services and social stigma[6-8].

Studies indicate that sex workers are more susceptible to acquiring HIV/AIDS, although it can be observed that there are gaps in the literature in relation to the concept of vulnerability applied to this population, justifying the present study[4-10].

In light of the above, it is emphasized that there is a necessity for conceptual analysis of vulnerability to HIV/AIDS in female sex workers, promoting clarification of concepts that are useful for the practice of health care, especially nursing, as the organization of this knowledge may contribute to supporting strategies of health promotion for this population, demonstrating the relevance of the present study. Moreover, conceptual analysis is intimately related to the evolution and expansion of Nursing knowledge.

It can be highlighted that concepts are meanings attributed to determined phenomena or words, which may vary in accordance with the chosen theory and the context used. Furthermore, it is necessary to consider that each concept possesses attributes consisting of characteristics that compose the concept. There are also the consequences of concepts, which determine applicability and what may happen when they are used. The concepts facilitate and standardize understanding[11].

In this perspective, the objective of this study consists of analyzing the concept of vulnerability to HIV/AIDS in female sex workers.

METHOD

This is a Concept Analysis of vulnerability to HIV/AIDS in female sex workers, following the model proposed by Walker and Avant[12], which is subdivided into eight stages.

First stage: concept selection

The chosen concept was Vulnerability to HIV/AIDS in female sex workers.

Second stage: purpose of the conceptual analysis

This stage refers to the purpose of the conceptual analysis, which, in this case, is identification of the concept of vulnerability to HIV/AIDS in female sex workers, enabling its refinement or update for the context of this demographic framework[12].

This analysis, focused on female sex workers, will contribute to the deployment of strategies directed at closing the gaps that are encountered, promoting minimization of HIV/AIDS infection through the implementation of programs, public policies and partnerships with the association of female sex workers, considering the attributes, characteristics and particularities involved in vulnerability to HIV/AIDS in these women, working on the findings, individually or as a group, so as to prevent or minimize the installation of vulnerability. Furthermore, it will allow the academia to know the concept of vulnerability in this context, instigating new studies that consider the aspects involved in vulnerability.

Third stage: identification of all possible uses of the concept

In this stage, bibliographic research was carried out in the form of a review of the literature[13], which can be found described in the eighth stage of this study. In addition, searches were conducted in the dictionary and other scientific sources covering the concept of vulnerability[12]. The identification of the possible uses of the concept enables finding how the concept is being used and applied, it being recommended to research beyond literature from the healthcare area, searching in books, dictionaries and encyclopedias[12].

Fourth stage: determination of the defining attribute

The frequency with which each attribute was mentioned in the studies was found, with subsequent definition of the most frequent for better understanding of the concept.

Defining attributes are words or expressions appearing repeatedly in the literature that demonstrate the essence of the concept, constituting characteristics that express the concept, avoiding biases in the understanding of its nature[12,14].

Fifth stage: identification of a model case

This occurs through the confection of a case based on reality, which transmits defining characteristics and attributes that represent the concept[12].

Defining characteristics are demonstrated through the presentation of a fictitious case, which is constructed based on the results found in studies from the integrative review, and on care experiences and prior knowledge.

Sixth stage: identification of an additional (contrary) case

The elaboration of a case that manages to be at the frontier between what is real and what does not apply to the concept is determined as additional case [12]. In the present study it was chosen to present a contrary, fictitious case, elaborated by the author. The contrary case is understood as that which determines inapplicability of the concept[12].

Seventh stage: identification of antecedents and consequences

Antecedents correspond to events or incidents that occur before the existence of the concept; therefore they cannot be an attribute of the concept. The consequences are the events that occur as a result of appearance of the concept[12]. As such, a word cannot be considered to simultaneously be an attribute, a consequence and an antecedent[12].

The antecedents and consequences were obtained through the studies from the integrative review. For this, the information was transcribed in the data retrieval instruments and subsequently grouped to find the frequency.

Eighth stage: definition of empirical referents

The possible methods and instruments of determination of the existence of the studied concept were presented.

This step, fundamental in this type of investigation, was guided by the question: Which data collection instruments were used in the study sample, enabling the measurement of the concept? The researcher should define how the concept is to be measured. The empirical referents are classes or categories of real phenomena which, by their presence or existence, demonstrate occurrence of the concept itself[12]. The selected articles, together with other publications from textbooks and the critical sense of the researchers involved, provided support to the formulation of empirical referents of antecedents and consequences of the studied concept.

The textbooks were obtained through searching the archives of the BIREME Library and the Library of the Nursing School of the Federal University of Rio Grande do Norte. The inclusion of books by renowned authors on the theme of the review is accepted practice for concept analysis studies[12], especially when the selected articles do not completely satisfy particularities of the phenomenon.

The search strategy used in the literature review proceeded in six phases[13].

First phase: identification of the theme and formulation of the research question

The aim was to answer the guiding question: What are the concept, attributes, antecedents, consequences and empirical referents for vulnerability to HIV/AIDS in relation to female sex workers?

Second phase: establishment of inclusion and exclusion criteria

The inclusion criteria for this review were: primary articles, available in their entirety, with humans, with no cost of access, with available abstract, that cover vulnerability to HIV in female sex workers, published in Portuguese, English or Spanish between 2012 and 2016.

Review articles, meta-analyses, repeated studies, with access cost, that did not cover the theme or did not encompass female sex workers as study subjects were excluded. As the present study is a concept analysis conducted through a literature review, it was decided to exclude review articles and meta-analyses as they are not primary sources of data for the present study.

Third phase: identification of pre-selected and selected studies

A bibliographic survey was conducted on the Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Virtual Health Library (BVS – *Biblioteca Virtual em Saúde*) databases.

The searches were carried out in January 2017. In relation to the search descriptors on MEDLINE and CINAHL, Medical Subject Headings (MeSH) vocabulary of the U.S. National Library of Medicine (NLM) was adopted, whereas for BVS, structured, trilingual Descriptors in Health Sciences (DeCS) vocabulary were adopted.

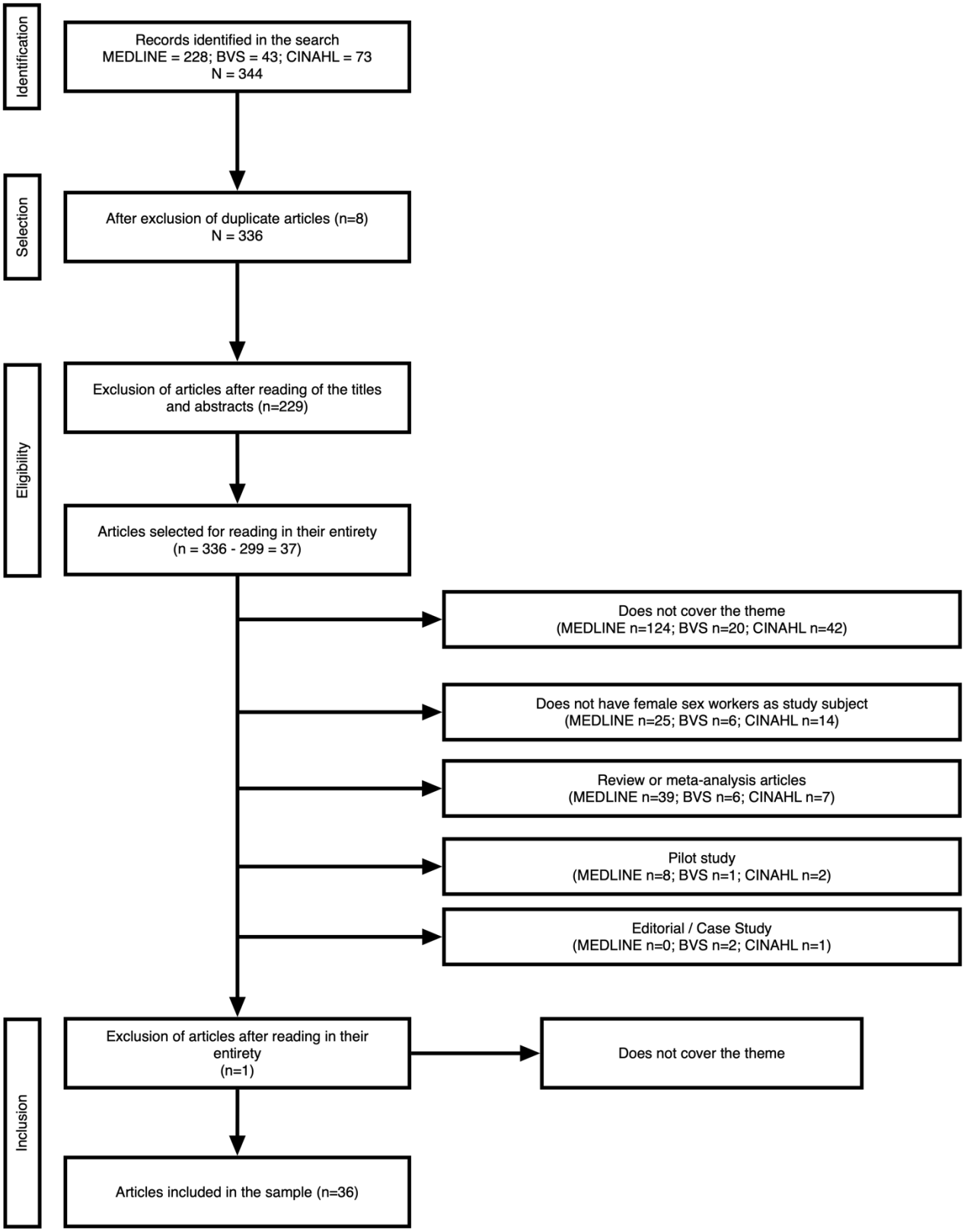
Thus, the controlled DeCS/MeSH used were: *Vulnerabilidade em Saúde*/Health Vulnerability and HIV/HIV and *Profissionais do Sexo*/Sex Workers*,* with the following combinations: Health Vulnerability *AND* HIV and Health Vulnerability *AND* Sex Workers*,* with Boolean operator AND. The two combinations were carried out equally on all databases with the aim of identifying the highest possible number of articles. It was decided not to use key words; only the controlled descriptors were used, as they confer greater specificity to the search, besides being organized in hierarchical structures, facilitating search and subsequent retrieval of the article. It should be emphasized that key words do not obey any form of structure; they are random and are retrieved from free language texts. For a key word to become a descriptor it has to pass through a rigid control of synonyms, meaning and importance on the hierarchy of a given subject[15)].

During sampling, with the aim of guaranteeing greater reliability, each selected database was accessed by two researchers at the same time, on different computers, on which an exhaustive search for publications was conducted. In the case of divergence between the researchers during screening, complete reading and discussion was held so as to reach a consensus on whether to select the referred article. After the bibliographic search procedure on the databases, screening of the articles was done.

Screening of the selected studies was conducted through reading of the title and, when this was not instructive, reading of the abstract. If, even then, neither the concept nor its components (definition, antecedents and consequences) were found, the text was read in its entirety.

After the search defined by the Health Vulnerability and HIV and Sex Workers (MeSH) descriptors, as well as by the eligibility criteria, Figure 1 demonstrates the Prism flowchart of the review stages.

Figure 1: Prism flowchart with the phases of the review carried out in the present study.



A validated questionnaire[16] was used as data collection instrument. The instrument was completed for each article analyzed, the articles being identified from 01 to 36.

Fourth phase: evaluation of the studies included in the sample

Concept analysis recommends that in the literature review the quality of the articles included in the sample should be verified, being thoroughly considered and analyzed in relation to methodological characteristics such as study type and design, data collection instrument, importance and representativeness of the information, research question, appropriateness of the methodology and the subjects included in data collection. Furthermore, the information was evaluated in regard to the study objective[12,17]. The individual characteristics of each study were grouped into a table and descriptively analyzed, as was the information necessary to meeting the objectives of the study.

After screening, identification of the initial sample of the articles occurred, which then passed to the phases of complete reading of all the studies, with analysis regarding content and permanence in this study. At this point some articles were excluded for not completely covering the objectives of the study. Then, a second reading was done (now more detailed and directed), in which categorization, evaluation, interpretation and synthesis were performed. In the phase analyzing the studies it was sought to identify the methodological characteristics of each study: authorship, journal and year, city/country, type of study, database, attributes, antecedents, consequences and empirical referents.

Fifth phase: Analysis and interpretation of the results

Discussion of the results was carried out in stages of attributes, antecedents and consequences. In the results interpretation phase, besides the final sample of articles from the integrative review, textbooks were also included, since they were recommended and, in this phase, the definition of the concept was constructed[12].

Sixth phase: Presentation of the review, knowledge synthesis

This was carried out through completion of the tables with the characteristics of the review studies.

RESULTS AND DISCUSSION

Characterization of the studies included in the sample is shown in Table 1.

Table 1: Characterization of the review articles according to authorship, location and type of study, data collection instruments and database.

Identification	Authors/Periodical/Year	Study Location	Type of Study	Data Collection Instruments	Database
1	Ranebennur V, et al. HIV/AIDS-Research and Palliative Care. 2014[18].	Mumbai and Thane/India.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
2	Bharat S., et al. PLoS ONE. 2013[19].	Andhra Pradesh, Maharashtra, Tamil Nadu and Karnataka/India.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
3	Reed E, et al. Sex Transm Infect. 2016[20].	Rajahmundry/ India.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
4	Urada LA, et al. PLoS ONE. 2012[21].	South Philippines/Republic of the Philippines.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
5	Fehrenbacher AE, et al. AIDS Behav. 2016[22].	Kolkata/ India.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
6	Shokoohi M, et al. PLoS ONE. 2016[23].	Iran	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
7	Markosyan K, et al. AIDS Research and Treatment. 2014[24].	Yerevan/Armenia.	Randomized controlled trial.	Questionnaire. Interview.	MEDLINE
8	Krusi A, et al. BMJ Open. 2014[25].	Vancouver/Canada	Cross-Sectional.	Semi-structured instrument.	MEDLINE
9	Prakash R, et al. PLoS ONE. 2016[26].	Thane/ India.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
10	Matthew FC, et al. Globalization and Health. 2014[27].	Mombasa/Kenya.	Cross-Sectional. Descriptive.	Questionnaire. Interview.	MEDLINE
11	Goldenberg SM, et al. PLoS ONE. 2016[28].	Tecún Umán/Guatemala.	Cross-Sectional. Descriptive.	Semi-structured Interview.	MEDLINE
12	Medhi GK, et al. BMC Public Health. 2012[29].	Dimapur/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
13	Suryawansh D, et al. J. Biosoc. Sci. 2016[30].	India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
14	Haasnoot AV, et al. BMC Infectious Diseases. 2015[31].	Limburg/Belgium.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
15	Brody C, et al. BMC Public Health. 2016[32].	Phnom Penh and Siem Reap/Cambodia	Cross-Sectional. Descriptive.	Questionnaire. Scale.	MEDLINE
16	O´Halloran ABZ, et al. BMC Women's Health. 2014[33].	Dimapur/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
17	Ganju D, et al. BMC International Health and Human Rights. 2016[34].	Andhra Pradesh/ India	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
18	Januraga PP, et al. BMC Public Health. 2014[35].	Bali, Indonesia.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
19	Hong1 Y, et al. PLoS ONE. 2013[36].	Guangxi Zhuang/China.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
20	Qiao S, et al. PLoS ONE. 2014[37].	Guangxi Zhuang/China.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
21	Patel SK, et al. PLoS ONE. 2016[38].	Andhra Pradesh/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE

Identification	Authors/Periodical/Year	Study Location	Type of Study	Data Collection Instruments	Database
22	Ramesh S, et al. BMC Public Health. 2012[39].	Andhra Pradesh/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
23	Auli NC, et al. BMJ Open. 2015[40].	Barcelona/Spain.	Phenomenological.	Semi-structured Questionnaire.	MEDLINE
24	Engstrom SMGD, et al. PLoS ONE. 2013[41].	Tijuana/ Mexico.	Cross-Sectional. Descriptive.	Semi-structured Questionnaire.	MEDLINE
25	Luchters S, et al. PLoS ONE. 2013[42].	Mombasa/Kenya.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
26	Buzdugan R, et al. AIDS Research and Treatment. 2012[43].	Karnataka/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
27	Gezie LD, et al. BMC Public Health. 2015[44].	Mettema/Ethiopia.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
28	Busza J, et al. AIDS Care. 2016[45].	Southern Africa.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
29	Bhattacharje P, et al. AIDS Care. 2013[46].	Karnataka/ India.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
30	Zhang XD, et al. Sex Transm Infect. 2013[47].	Kunming/China.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
31	Mtetwa S, et al. BMC Public Health. 2013[48].	Zimbabwe/Africa.	Cross-Sectional. Descriptive.	Questionnaire.	MEDLINE
32	Blanchard AK, et al. BMC Public Health. 2013[49].	India.	Cross-Sectional. Descriptive.	Questionnaire.	BVS
33	Collins SP, et al. AIDS Care. 2013[50].	Mexico.	Ethnographic.	-	BVS
34	Ingabirea MC, et al. Culture, Health & Sexuality. 2012[51].	Kigali/Rwanda.	Cross-Sectional. Descriptive.	Questionnaire.	CINAHL
35	Servina AE, et al. AIDS Care. 2015[52].	Mexico.	Cross-Sectional. Descriptive.	Questionnaire.	CINAHL
36	Beattiea TSH, et al. AIDS Care. 2013[53].	Andhra Pradesh/ India	Qualitative.	Semi-structured Interview.	CINAHL

In respect to the country in which each study was developed, 15 (41.6%) occurred in India, Mexico and China. A total of 29 (80.5%) used questionnaires for data collection. Regarding the databases used, 31 (86.1%) articles were taken from PUBMED. In relation to study type, 32 (88.9%) were cross-sectional.

Definitions/Uses for the term "vulnerability to HIV/AIDS" in the context of female sex workers

The concept of vulnerability to HIV/AIDS in the context of female sex workers was not found to be explicit in the articles read in their entirety. However, it was possible to extract the attributes, antecedents, consequences and empirical referents, which are indispensable for analysis, reformulation or adaptation of the concept established and accepted by the scientific community.

In this perspective, concepts of vulnerability pre-established by other authors can be found below so that their possible uses may be identified, justifying the use of other studies that are not covered in the present literature review, this being the criteria established in the third stage of the Walker and Avant model[12].

The concept of vulnerability considers the individual aspect determining the infection, justifying the actions destined towards the individual as HIV epidemic control strategy[54].

Vulnerability[10,55] consists of three interdependent planes: individual, social and programmatic. The term refers to the chance of exposition to illness and, as a result of a set of aspects, which while immediately alluding to the individual, also restore them to a relationship with the collective. Access to information, means of communication, availability of cognitive resources, power to participate in and evaluate political and institutional decisions, as well as programs for the control of infirmities are also considered.

There are still authors[54] that consider processes of exclusion, discrimination or weakening of social groups and the capacity for reaction in the concept of vulnerability.

The Portuguese language dictionary[56] conceives vulnerability as a characteristic of who or what is vulnerable, that is, fragile, delicate or weak. It can refer as much to people's behavior as to objects, situations and ideas.

Attributes

The defining attributes found in the Integrative Review are presented in Table 2.

The most prevalent attribute regarding vulnerability to HIV in female sex workers was violence, with 58.3%. Violence against these women is a problem, as their work space is unsafe[14-16]. Many suffer violence from clients, who oblige them to have unprotected intercourse[57].

A study indicates that one in three women suffer violence from an intimate or non-intimate partner[58]. They suffer psychological, physical, moral and sexual violence in their daily work routine and the aggressor is known[58-59]. The use of alcohol and illegal drugs is profoundly linked to the day-to-day life of prostitutes[14,17]. Absurdly, the vast majority of prostitutes use drugs as "tools of the trade", but, generally without losing control of what they consume[33,56].

The use of alcohol found in 36.1% of the studies constitutes a relevant attribute in the facilitation of violence and the non-use of a condom in sexual intercourse[22-23]. The author indicates that, under the influence of drugs, these women end up leaving aside the condom at the time of oral sex, but that it would be used in penetration,

although they emphasize that they had exposed themselves by not using a condom during oral sex. Thus, they become more vulnerable to STIs [57].

Table 2: Distribution of the attributes defining vulnerability to HIV in female sex workers in studies from the Integrative Review, according to absolute and relative frequency.

Defining Attributes	Study Number	N	%
Violence	[1,2,3,5,8,9,10,11,13,15,16,19,22,24,25,26,29,32,33,35,36]	21	58.3
Sex without a condom	[1,3,7,8,9,10,11,13,20,25,26,27,30,35]	14	38.8
Use of illicit drugs	[2,4,5,6,8,10,11,12,15,19,23,24,30,35]	14	38.8
Use of alcohol	[2,4,6,8,10,13,15,19,23,24,27,30,35]	13	36.1
Age (<25)	[1,2,5,6,9,12,14,21,25,27,30]	11	30.5
Quantity of sexual partners	[5,9,10,12,15,16,20,27,32]	9	25
Weakness in negotiation of condom use	[2,3,4,13,18]	5	13.8
Receiving higher payment for performing sex without a condom	[3,5,8,15]	4	11.1
Sexual abuse on the part of the client	[2,3,7]	3	8.3
Forced Sex/	[4,13,25]	3	8.3
Type of sex performed (oral, vaginal, anal)	[13,16]	2	5.5
Sharing of needles and syringes	[23,35]	2	5.5
Undesired sex	[7]	1	2.7

Other studies show that drug use and prostitution are strongly connected, such that the use of drugs enables giving up the body as merchandise, exempting the woman from deep reflection[58-59]. The drugs impose a medical power, so as to support the demands inherent to prostitution[34,60].

A study carried out with 90 female sex workers highlighted that 72.2% of the sample submitted to vaginal sex, and 42.2% to anal sex, without a condom because of a satisfactory quantity paid by the client[61]. Often greater "vulnerability" to HIV/AIDS occurs due to financial necessity. Prostitutes receive propositions which, for them, are irrefutable[3,5]. Clients offer more money so that the "affairs" are conducted without the use of a condom, and the girls often accept the practice of unprotected oral sex [59].

Negotiation of condom use is a challenge for female sex workers, as, despite agreeing to use a condom, at the time of sex there can be an insistence in removing it, putting the woman's health at risk[17,62].

Moreover, the risk of STI/HIV/AIDS contamination is associated with self-evaluation of vulnerability and identification of "risk" behaviors that influence contamination[4,55]. Prostitutes, due to the conditions in which they are placed and in which they work, are found in a situation of extreme social vulnerability, which exposes the individual to risk of infection from these diseases[7,11].

Model case

"JAP, 21, female, has been a sex worker at *Casa Noturna Mendes* for four years. She performs oral, vaginal and anal sex without a condom with at least five partners a week. She often sees clients who abuse her sexually and are violent, which contributes to carrying out her work through coercion/forced, making the negotiation of condom use difficult. It should also be emphasized that, due to financial necessity, she accepts the payment of higher values in exchange for not using a condom. Sometimes JAP feels sad and lonely, finding an outlet for her

disillusion in drugs and alcohol. Not realizing the risk of HIV/AIDS, she shares needles and syringes with her colleagues."

Contrary case

"ACM, 28, female, has been a sex worker at *Casa Noturna Araújo* for six years. Whenever she is with a client she uses a condom, regardless of oral, vaginal or anal sex. All her clients are understanding, pleasant and are aware of the necessity to use a condom to avoid disease. Under no circumstances does she accept higher payment in exchange for not using a condom; as such, she always has her own supply of condoms. She never uses alcohol or illicit drugs and always pays attention to whether the client also does not use."

Antecedents

The search in the Integrative Review revealed 20 antecedents, illustrated in Table 3.

Table 3: Distribution of the antecedents in vulnerability to HIV in female sex workers in the studies from the Integrative Review, according to absolute and relative frequencies.

Antecedents	Study Number	N	%
Education/Illiteracy	[1,2,4,10,12,13,15,17,18,19,21,27,29,30,36]	15	41.6
Financial necessity	[1,3,7,8,11,13,21,26,29,30,33,34]	12	33.3
Sexually Transmitted Infections	[2,3,4,9,12,14,16,22,23,30]	10	27.7
Place in which sex work is conducted (brothel, Internet, vehicle, street, hotel, massage parlor)	[12,15,19,20,21,26,27,29,32]	9	25
Weakened knowledge	[1,11,14,17,18,23,29,32]	8	22.2
Perception of weakened risk	[5,6,13,15,23,30]	6	16.6
Weakened access to healthcare service	[1,11,13,29,14,30]	6	16.6
Length of time as a sex worker	[1,2,16,13,36]	5	13.8
Marital Status	[2,10,12,29,30]	5	13.8
Criminalization	[8,11,14,31]	4	11.1
Stigma	[1,6,11]	3	8.3
Competition between brothels and female sex workers to not lose clients	[2,18]	2	5.5
Participation in prevention programs	[2,32]	2	5.5
Dependent children	[2,4]	2	5.5
Religion	[10,25]	2	5.5
Prophylaxis pre-exposure	[5]	1	2.7
Psychosocial context	[1]	1	2.7
Debt	[2]	1	2.7
Possessing own condoms	[2]	1	2.7
Policing/monitoring	[8]	1	2.7

Education/illiteracy shown by 41.6% of the studies constitutes a significant antecedent in vulnerability to HIV in the context of female sex workers, as studies show that low levels of education directly influence susceptibility to HIV and risky sexual behavior[20,26].

Often, these women do not present effective conditions to assert their desire for protection, due to the action of external factors, which is stronger than their capacity to act against STIs and AIDS[20,55]. Authors point out

that the financial necessity faced by sex workers contributes to vulnerability to HIV, since they submit to unsafe working conditions and the demands of clients, such as violence and non-use of a condom[32-34].

The Sexually Transmitted Infections highlighted in 27.7% of the Integrative review, as well as symptoms such as vaginal discharge, urinary burning and genital sores are important indicators of vulnerability to HIV[29,63].

The location where the work of these women takes place also influences vulnerability to HIV, as they often give up being autonomous and end up subordinates to massage parlors or brothels that demand payment of a fee and offer inhumane working conditions[2,31].

Another little covered aspect in the literature deserving attention is policing, as often the police do not protect them, instead judging, condemning and arresting them[8,25].

Consequences

The consequences found in the Integrative review can be found in Table 4:

Table 4: Distribution of the consequences of vulnerability to HIV in female sex workers in studies from the Integrative Review, according to absolute and relative frequencies.

Consequences	Study Number	N	%
Social isolation	[1,11,14,15,19,23,28,29,32]	9	25
HIV infection and other Sexually Transmitted Infections	[8,9,10,11,12,13]	6	16.6
Mental Disorder	[15,32,33]	3	8.3
Depression	[2,4,9]	3	8.3
Discrimination	[5,13,17]	3	8.3
Fear	[7,20,25]	3	8.3
Opportunistic illnesses	[15,31]	2	5.5
Prejudiced quality of life	[15,22]	2	5.5
Suicide	[15,19]	2	5.5
Hospitalization	[31]	1	2.7
Sexual abstinence	[18]	1	2.7
Stress	[15]	1	2.7
Transference of sex work to another location	[33]	1	2.7
Salary penalty	[5]	1	2.7
Incarceration/Prison	[8]	1	2.7
Marginalization	[8]	1	2.7
Low self-confidence	[1]	1	2.7
Low self-esteem	[1]	1	2.7

The practice of sex work, especially when there is vulnerability to HIV, leads to the emergence of social isolation, mental disorders and loneliness[11,18]. The depression found by 8.3% was also detected in a study with 227 female sex workers, whereby 25.1% had low level depression; 18.9%, moderate; and 2.2%, major depression[63]. It is necessary to understand that depression in female sex workers involves recognition on the part of society, which, based on moral values, does not accept prostitution as a profession[64-65].

Female sex workers have greater vulnerability to HIV and other Sexually Transmitted Infections due to the professional practice itself[8-10]. Once they are vulnerable, they become susceptible to opportunistic illnesses such as tuberculosis, pneumonia and bronchitis[14,30]. Charging low prices and the possibility of sex without protection, due to the demands of clients, are among the main variables associated with the prevalence of HIV[3,5].

It is important that the scientific community and healthcare professionals have a broader vision of women in a situation of prostitution, with knowledge of the reality they experience and of the rights they have been denied, so that they can be given the same assistance as all citizens. As such, it is essential to provide training to healthcare professionals, especially nurses, from the beginning of their academic qualification, so as to sensitize them and for them to be able to provide care meeting the health demands of these women.

Finally, considering the antecedents and consequences identified in the present review, it can be observed that the healthcare of this population should involve actions related to violence, use and abuse of drugs, STI/AIDS prevention, psychological attention and attention to other health grievances, support networks and access to public services.

CONCLUSION

Vulnerability to HIV/AIDS in female sex workers presented principal attributes of violence, sex without a condom, use of illicit drugs, use of alcohol and age (<25).

The study enabled proposition of the concept of vulnerability to HIV/AIDS in female sex workers as a state of risk of acquiring HIV/AIDS which involves social aspects (education, place in which sex work is conducted, competition and dispute for work), economic aspects (financial necessity, payment of higher values for sex without a condom), prior health aspects (previous Sexually Transmitted Infections), individual aspects (knowledge, risk perception, marital status, participation in prevention programs, religion, psychosocial context, drug use, sharing of syringes), rights, accessibility and administration (access to a healthcare service, having own condoms), aspects related to partners (violence, coercion, number of sexual partners, type of sex performed).

A total of 20 antecedents to the analyzed concept were identified in the literature, with emphasis on education/illiteracy, financial necessity, Sexually Transmitted Infections, place in which sex work is conducted, weakened knowledge, weakened risk perception and weakened access to healthcare services. A total of 18 consequences were identified, these being social isolation, HIV and other Sexually Transmitted Infections, mental disorder, depression, discrimination and fear with greater prevalence.

Studies related to concept analysis are an important basis for growth of the body of nursing knowledge, as they signal a logical and systematic organization of conceptions. This process contributes to the advancement of theoretical nursing knowledge. Moreover, as concept analysis of vulnerability to HIV/AIDS in female sex workers assists in the precise definition of a concept to be used in nursing practice, theory, education and research, it may support the development of actions for the reduction of vulnerability of women in a situation of prostitution.

Among the limitations of the present study, what stands out is the fact of not using key words, and only using controlled descriptors, besides only including studies with no cost of retrieval.

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