Rev. Latino-Am. Enfermagem
2014 Jan.-Feb.;22(1):68-75
DOI: 10.1590/0104-1169.2837.2377
www.eerp.usp.br/rlae

Original Article

Vulnerability of women living with HIV/aids[1]

Marli Teresinha Cassamassimo Duarte[2]
Cristina Maria Garcia de Lima Parada[3]
Lenice do Rosário de Souza[4]

Objective: outline the profile of women living with the human immunodeficiency virus/aids in interior cities in São Paulo State, in the attempt to identify characteristics related to individual, social and programmatic vulnerability and to analyze the conditions in which they discovered their serological status. Method: between October 2008 and December 2010, a cross-sectional study was undertaken with 184 women attended at a specialized service. The data were collected through an interview and gynecological test, including the collection of samples for the etiological diagnosis of sexually transmissible conditions. Results: the women were predominantly white, between 30 and 49 years of age, lived with a partner, had a low education level, multiple sexual partners across the lifetime and unsafe sexual practices. The prevalence of sexually transmitted diseases corresponded to 87.0%. Conclusion: the study suggests the need to offer gynecological care in specialized services and the accomplishment of multiprofessional actions to reinforce the female autonomy in protective decision making.

Descriptors: HIV Infections; Acquired Immunodeficiency Syndrome; Health Vulnerability; Women.

[1] Paper extracted from doctoral dissertation "Saúde Sexual e Reprodutiva de Mulheres Vivendo com HIV/aids Atendidas em Hospital Dia", presented to Departamento de Enfermagem, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista Júlio de Mesquita Filho, Botucatu, SP, Brazil. Supported by Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), process # 2008/55416-9.

[2] PhD, Assistant Professor, Departamento de Enfermagem, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista Júlio de Mesquita Filho, Botucatu, SP, Brazil.

[3] PhD, Adjunct Professor, Departamento de Enfermagem, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista Júlio de Mesquita Filho, Botucatu, SP, Brazil.

[4] PhD, Adjunct Professor, Departamento de Doenças Tropicais e Diagnóstico por Imagem, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista Júlio de Mesquita Filho, Botucatu, SP, Brazil.

Corresponding Author:
Marli Teresinha Cassamassimo Duarte
Universidade Estadual Paulista Júlio de Mesquita Filho
Faculdade de Medicina de Botucatu. Departamento de Enfermagem
Av. Prof. Montenegro, s/n
Distrito de Rubião Júnior
CEP: 18618-970, Botucatu, SP, Brasil
E-mail: mtduarte@fmb.unesp.br

Introduction

The aids epidemic is a global public health problem. Data from the Joint United Nations Programme on HIV/aids (UNAIDS) indicate that 34 million people had been infected by the human immunodeficiency virus (HIV) up to December 2011, with women corresponding to more than half of the cases[1]. In Brazil, 656,701 aids cases[2] were notified between 1980 and June 2012, 34% (217,367 cases) in the State of São Paulo, 1,401 of which referred to the 30 cities in the Epidemiological Surveillance Group of the microregion Botucatu[3]. Among women, 230,161 cases were identified across the country in the same period[2], 67,522 of which in the State of São Paulo[3].

The feminization and internalization of the epidemic are proven by the systematic reduction in the gender ratio, from 15.3 men for every woman in 1986 to 1.7 men for every woman in 2010[2], and by the progressive increase in the number of Brazilian cities with at least one case of aids[4].

Women and girls' greater vulnerability to the HIV infection derives from biological aspects and social, economic, legal and cultural factors, highlighting gender roles, unbalanced power relations and the acceptance of violence against women by society[5]. Nevertheless, the economic and cultural factors play an important role not only in situations of poverty: a study in two African countries detected greater vulnerability to HIV/aids among women who had been married, had a job and were richer as, despite better conditions, the gender inequality continued[6].

The vulnerability concept is complex, with a range of definitions coming from different disciplines[7]. Its goal is to understand how individuals and groups are exposed to a given health problem, departing from totalities that consists of pragmatically constructed syntheses based on three analytic dimensions: individual, social and programmatic or institutional[8]. From the individual viewpoint, it involves aspects related to biological and personal characteristics, risk perception, self-protection attitudes and negotiation skills, among others, which imply exposure and susceptibility to that problem. Social vulnerability refers to the economic structure, public health and educational policies, culture, ideology and gender relations, and programmatic vulnerability to public coping policies, with their targets, proposed actions, organization and distribution of resources for prevention and control[9].

Departing from the importance of adopting the vulnerability concept in health care to people living with HIV/aids, in order to gain a broader perspective on their needs and plan more effective responses[10], this study is proposed to answer the question: who are the women attended at a specialized service in the interior of the State of São Paulo and what is their vulnerability to reinfection and STD?

To produce evidence and knowledge about the specific needs of these women, the objective is to outline the profile of women living with HIV/aids in cities in the interior of the State of São Paulo, in the attempt to identify characteristics related to individual, social and programmatic vulnerability and to analyze the conditions in which they discovered their serological status for HIV.

Method

A cross-sectional study was undertaken at a Specialized Infectology Outpatient Service (SAEI) affiliated with a public university. The institution is a referral service for care delivery to HIV/aids patients in the interior of the State of São Paulo, especially for 30 cities in the microregion of Botucatu.

During the study period, 210 women were monitored at the service, ten (4.8%) of whom did not comply with the inclusion criteria (not being pregnant, having completed 18 years of age and having initiated sexual activities) and 16 (7.6%) refused to participate. Thus, the sample consisted of 184 women (87.6% of the total).

The data were collected through an interview, conducted by the primary author in a private setting. The instrument used contained open and closed questions and was first submitted to evaluation by two experts in infectology/STD. Next, it was tested with a patient from the SAEI who only participated in this research phase, when minor changes were made for the sake of an easier understanding.

To permit the individual and social vulnerability analysis, the instrument included three groups of variables: sociodemographic, behavioral and clinical. In the first group, the following were considered: age, skin color, marital situation, years of education concluded, paid job, occupation, access to social security and city of origin. In the second, the number of sexual partners, sexual practice in exchange for money or drugs in life, occasional partnership at the time of the interview, consumption of legal or illegal drugs and number of sexual partners during the twelve months before inclusion in the study and, in the third group,

length of diagnosis of seropositive status for HIV, use of antiretroviral therapy and referred history of STD and precursor or neoplastic uterine lesions.

Considering that the Department of STD/Aids and Viral Hepatites recommends the diagnosis and treatment of STD and the prevention of colon cancer, the researchers decided to discuss programmatic vulnerability based on the women's access to these actions. Therefore, all study participants took part in a gynecological test, applied by the same researcher, including the collection of vaginal content and cervical secretion samples. *Trichomonas vaginalis* and *Neisseria gonorrhoeae* were diagnosed through cultures in *Diamond* and *Thayer Martin* liquid medium, respectively. To investigate *Chlamydia trachomatis* and the human papillomavirus (HPV), polymerase chain reaction was used. Cervical alterations were identified through conventional colpocytology.

To monitor the control of the disease, also recommended, T CD4+ lymphocyte counts and determination of the plasma viral load of HIV were applied, performed as part of routine care, respectively, using flow cytometry and branched-DNA.

The women were also asked about how they got contaminated by HIV and how they discovered their serological status.

To present the data, descriptive statistics were used with simple and absolute frequency distribution and calculation of central trend measures, when indicated.

This project was evaluated and approved by the Research Ethics Committee at Botucatu Medical School, Universidade Estadual Paulista (protocol 501/2007) and complied with all ethical premises for research involving human beings.

Results

Considering the 184 women under analysis, women in the age range between 30 and 49 years (69.5%), white (71.7%), married or living with a fixed partner (49.5%) and with low education levels were predominant, as 56.5% of them had less than eight years of education. A part of the study population (37.5%) did not have a paid job, nor access to social security benefits (42.9%). The women lived in 45 cities in the interior of São Paulo State, 96.0% in cities with a population of up to 150 thousand inhabitants (Table 1).

Among the 93 (50.5%) women who were professionally active, 76 (81.7%) were working when they were included in the study, while 17 (18.3%) were on leave due to aids-related illnesses. The predominant occupations were related to services (55.3%), particularly domestic services (23.7%) and maintenance (17.1%), the rural sector (11.8%) and commerce (11.8%).

Table 1 - Distribution of 184 women infected by HIV/aids according to sociodemographic variables. Botucatu, SP, Brazil, 2008-2010

Variables	N	%
Age range (years)		
18-24	3	1.5
25-29	22	12.0
30-39	65	35.3
40-49	63	34.2
50-59	25	13.6
60-67	6	3.3
Skin color		
White	132	71.7
Mulatto	27	14.7
Black	25	13.6
Marital status		
Married/fixed partner	91	49.5
Separated/divorced/widowed	57	31.0
Single	36	19.5
Education (years)		
None	8	4.3
1 to 3	21	11.4
4 to 7	75	40.8
8 to 11	62	33.7
≥12 years	18	9.8
Paid job		
Yes	93	50.5
No	69	37.5
Retired	22	12.0
Access to social security		
Yes	105	57.1
No	79	42.9
Inhabitants in city of origin		
Up to 20,000	44	23.9
20,001 to 50,000	33	17.9
50,001 a 100,000	13	7.1
100,001 to 150,000	87	47.3
>150,000	7	3.8

Most of the women investigated (65.8%) indicated they had a fixed sexual partner when they were included in the study, and that they had five or more sexual partners across the lifetime (59.2%). The median number of sexual partners in life was five (1-100), except for the 19 women (10.3%) who referred that had practiced sex in exchange for money or drugs. During

the 12 months before their inclusion in the study, the majority (62.5%) declared a single sexual partnership and only seven (3.8%) declared five or more partners, five of whom practiced sex for money or drugs. As to the partners' HIV serologic status, 57 (31.0%) women referred that they were seropositive and 19 (10.3%) that they did not have a fixed partner at the time of the interview (Table 2).

Among the 136 women who reported an active sexual life during the six months before their inclusion in the study, 44.1% referred condom use during all relations. Among the women whose partners were serodiscordant or did not know their serologic status, and also among women with occasional partners, 43.7% and 37.5%, respectively, did not use a condom in all relations.

Table 2 - Distribution of 184 women infected by HIV/aids according to sexuality aspects. Botucatu, SP, Brazil, 2008-2010

Variables	N	%
No of sexual partners in life		
1	13	7.1
2-4	62	33.7
5-10	52	28.3
>10	57	30.9
No of sexual partners in the last 12 months		
0	44	23.9
1	115	62.5
2-4	18	9.8
≥5	7	3.8
Serological agreement with partner		
Yes	57	31.0
No	53	28.8
Ignored	11	6.0
Occasional partnership	19	10.3
No sexual activity	44	23.9
Sexual practice in exchange for money/drugs*		
No	165	89.7
Yes	19	10.3

*At some moment in life

As to the consumption of illegal drugs during the 12 months before their inclusion in the study, 20 women (10.9%) consumed at least one drug. Daily alcohol consumption or more than once per week was reported by 12.5%, and 42.9% of all women were smokers, while 11.4% were former smokers.

The analysis of the clinical-laboratory profile related to the HIV infection demonstrated that the median length of the seropositive diagnosis was eight years (one week – 23 years), and 30.4% of the women had been diagnosed more than ten years earlier. The median T CD4+ lymphocyte count was 488 cells/mm^3 (4-1678), with 67.9% higher than 350/mm^3, 55.4% with an undetectable HIV plasma viral loading and 79.9% receiving antiretroviral therapy.

As regards other clinical aspects, 52.7% of the women reported earlier STD, 23 (12.5%) precursor or neoplastic cervix uteri lesions and only 89 (48.4%) had taken the pap smear less than one year before. Most of the women (61.4%) referred vaginal discharge, 31.5% and 28.8% indicated bad odor and genital pruritis, respectively.

The general prevalence of STD identified in this study was 87.0%. Individually, HPV infection was the most prevalent (83.6%), followed by chlamydia (24.6%) and trichomonas (14.7%). No case of gonorrhea was identified. Fifty-nine (32.1%) women suffered from mixed infections. Precursor cervix uteri lesions and atypical cells were observed in 39 women (21.2%).

As regards the category of exposure to HIV, the large majority (94.0%) indicated sexual infection. Among them, 155 (84.2%) had been contaminated by their partners or former fixed partners. The main reported forms of infection by their partners were sexual relations with multiple partners (38.6%) and injectable drugs use (IDU): 18.5% (Table 3). Nine women (4.9%) who indicated bisexual behavior of their partners indicated that they discovered this fact after the result of the HIV serology or aids diagnosis of their partners or themselves.

Table 3 - Distribution of 184 women infected by HIV/aids according to category of exposure. Botucatu, SP, Brazil, 2008-2010

Variable	N	%
Sexual exposure		
Partner with multiple partners	71	38.6
Partner using injectable drugs	34	18.5
Partner with unknown risk	29	15.8
Relation with multiple partners	18	9.8
Partner using injectable drugs and multiple partners	11	5.9
Bisexual partner	7	3.8
Partner using injectable drugs and bisexual	2	1.1
Hemophiliac partner	1	0.5
Blood-borne exposure		
Injectable drugs user	2	1.1
Transfusion	2	1.1

The investigation about the circumstances in which the HIV/aids infection was diagnosed showed that most women were tested as a result of their own (27.2%) or their partner's illness (26.6%). Thirty-nine (21.2%) were tested during routine prenatal/delivery/abortion care, 15 (8.1%) requested by health professionals, whether because the test was part of routine protocols or because of the professional's risk perception. Only 15 (8.1%) women were tested because of self-perceived risk, 11 (6.0%) because a child got ill and five (2.7%) through blood donation.

According to the women, the situations that made them get tested were: knowing that their former partner was infected by the virus and/or had died of aids, or that he had used and/or was consuming injectable drugs, illness of a person whom they shared injectable drugs with, multiple partners and association of their own or their partner's symptoms with aids.

Discussion

The results are related to the set of women under medical follow-up for HIV infection at the service under analysis and not to all women infected by HIV in the region for which this service is a referral institution, representing a limitation. In view of its status as a referral service, however, it concentrates most of the women in the region under regular follow-up. The fact that the study population comes from interior cities distinguishes it from other national studies[11-14], which pictured contexts of women living with HIV/aids in large urban centers, revealing specific aspects of this reality.

The analysis of the set of data revealed characteristics, behaviors and contexts that made the women vulnerable to reinfection by HIV, STD and other gynecological conditions, including its three interrelated dimensions: individual, programmatic and social[8].

The large majority (70%) of the women under study were between 30 and 49 years of age, similar to data for Brazil[2] and São Paulo[3], which also indicate a higher prevalence of aids cases notified in women of this age range. As regards the skin color, a difference was perceived when comparing data from this study with notifications for Brazil[2] and the State of São Paulo[3], considering that, between 2004 and 2012, the proportion of white women was lower, near 50%. The analysis of skin color demands caution though, as the difference can derive from how the data was collected, whether self-referred, like in this research, or through classification by a health professional, generally used in official data.

The mean length of education (seven years) was lower to that of the general population between 15 and 64 years in the State of São Paulo[15], indicating a worse socioeconomic level and ratifying the pauperization hypothesis of the epidemic[16]. On the other hand, the situation found does not differ from that observed among the set of women notified because of aids in Brazil[2]. Approximately 10% of the women possessed twelve or more years of education, twice as high as in São Paulo[3] (5.0%) and Brazil[2] (4.4%), also demonstrating the relative importance of women with a college degree among HIV victims in this interior region of the State. Hence, the pauperization discourse of the epidemic should be relativized, so as to avoid giving women with higher education levels the impression that they are distanced from the disease and the feeling that they are protected by their more favorable socioeconomic condition[12], resulting in greater vulnerability to the infection. In that sense, in a recent African study, it is suggested that public health policies for HIV/aids preventions should reach all social groups[6].

The women under analysis had five or more partners across the lifetime, higher than in earlier studies[12,17] undertaken at referral centers for HIV/aids, located in large metropolitan areas. Similarly, as regards the number of sexual partners during the years before the inclusion in the study, the women under analysis indicated more than one partner much more frequently than in a population-based study[18] of all Brazilian regions. Thus, a higher level of multiple sexual partners was found among the women under investigation, an important aspect of vulnerability to HIV and DST.

The women who practiced sex in exchange for money or drugs are acknowledged as vulnerable to HIV and STD infection, at the political and programmatic level[5] of coping with the feminization of the aids epidemic. In this study, a greater proportion of women with this type of practice was observed when compared to a Brazilian study[12].

The consumption of illegal drugs during the 12 months before their inclusion in the study was mentioned, respectively, by twice as many women when compared to an earlier research[12] of women living with HIV/aids and to a national population-based survey of women with unknown HIV serological status, undertaken in 2005[19]. In addition, daily alcohol consumption by the women in this study was superior to that reported in an earlier research[19], whose consumption was indicated among

men and women. The use of alcohol and illegal drugs has been associated with increased vulnerability to HIV[20], which can be partially explained by its association with risky sexual practices like unprotected sex[7,20].

As regards condom use, in this study, it was observed that more than 40% of the women had unsafe sex, independently of whether they had a fixed or occasional partner, and of the partner's serological status. International[6-7,21] and Brazilian[20,22] studies revealed that gender-based power inequalities, as well as the standards of stable relationships, determine women's low power of negotiation with regard to safe sex. The expectation of motherhood is another factor that contributes to unsafe sexual practices[6].

A high prevalence of referred history of STD was identified. These have been consistently reported in the literature, increasing the biovulnerability to HIV infection[7,20-21].

Based on the sociodemographic, behavioral and clinical profile, the individual dimension of vulnerability is revealed through the low education level, multiple sexual partners, history of STD and irregular condom use, aspects observed among most of the women. Although less frequent, regular illegal drugs use and alcohol consumption represented another vulnerability factor.

Concerning social vulnerability, it was observed that an important part of the women under analysis were excluded from the job market and from access to social security. Among the women who worked, the predominant occupations were in the service and rural sectors, whose tasks do not demand qualification and tend to precarious work relations, coherently with the predominant low education levels. In a study in the South of Brazil[13], in which women with HIV/aids were compared with the general population, an association was found between the HIV infection, low education level and lower income.

The high percentage of women with gynecological complaints, STD, cytological uterine alterations and who did not have a pap smear at recommended intervals[23] indicates great vulnerability in the programmatic dimension. These data demonstrate that health services can contribute to the increased vulnerability of HIV-positive women, as they do not get diagnosed for gynecological problems. These findings emphasize the need for regular screening of these women with a view to reducing morbidity levels due to these conditions, as well as the transmission of some of them and of HIV itself to non-infected sexual partners.

The lack of gynecological care at services specialized in care delivery to women with HIV/aids, access difficulties, the irregular supply of these services and disarticulation with other health services and the lack of health education for cervix uteri cancer prevention are elements related to the programmatic vulnerability of this neoplasm, as observed in a recent study(11), and which could also justify the findings in the present research. On the other hand, the long follow-up of most of these women after they were diagnosed with the HIV infection, the high percentage of antiretroviral therapy and of women with appropriate clinical control of the infection, as evidenced by the laboratory counts of T CD4+ cells and HIV plasma viral loading indicate positive results of the medical care received. This indicates further attention to more specific issues of specialized infectology care, to the detriment of comprehensive care related to other aspect of the HIV infection and its evolution.

The predominant HIV infection route among the women in this study was sexual, in accordance with state[3] and national[2] data for women aged 13 years or older in the last three decades. Most of the women who referred this exposure category identified that their partners had been contaminated through sexual relations with multiple partners and through the use of injectable drugs. Thus, once again, differences were observed between the present research data and information for São Paulo State[3] and Brazil[2]. Part of the interviewees indicated that they did not know about their partners' bisexual behavior until they were diagnosed with HIV, which may have enhanced their vulnerability. Non-perception of the partner's bisexual behavior was also observed in an earlier study of women living in a rural area of Minas Gerais[24].

The conditions in which the women discovered their seropositive status for HIV were similar to those observed in some earlier studies[12,17]. In a study undertaken in 2002[17], it was demonstrated that 23.0% of the women got tested for HIV upon their own initiative, imagining that they could be infected. In the present research, on the other hand, only 7.8% tried to discover their serological status because they perceived they were at risk. These results, associated with those related to the exposure category, inconsistent condom use by a significant part of the women, reference to a preliminary history of STD and its high prevalence can demonstrate the low risk perception of women living in interior cities with regard to HIV/STD infection, factors that enhance their vulnerability[12,24]. This fact is very meaningful in clinical and epidemiological terms as,

besides predisposing to a late diagnosis and a worse quality of life, it contributes to maintain the transmission chain of HIV and STD.

Furthermore, the low risk perception for HIV/aids is highlighted in this study, also among health professionals, indicating that continuing health education actions related to HIV/aids and STD infection are needed for the teams in the cities where these women live. This need is further supported by the early diagnosis and treatment of lower genital tract conditions, whether associated with aids or not.

Conclusion

This study evidenced a high prevalence of STD among women living with HIV/aids, underlining that unsafe sexual practices are still maintained. In addition, a low risk perception and the maintenance of personal characteristics and sociocultural, economic and clinical contexts were observed, indicating the vulnerability of the study group in its three dimensions.

Knowledge about the women's characteristics, especially those that make them more vulnerable, should support the proposal of protection and empowerment strategies for this group, with a view to comprehensive care and increased autonomy. In that sense, gynecological care should be offered at specialized services, with a view to the early diagnosis and treatment of STD and other gynecological conditions, as well as the accomplishment of multiprofessional actions that reinforce the female autonomy in protective decision making, contributing to reduce the gender inequality these women are subject to.

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Received: Aug. 10th 2012
Accepted: Sept. 23rd 2013