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Differences and similarities in women living and not living with HIV: contributions by the GENIH study to sexual and reproductive healthcare

Diferenças e similaridades entre mulheres que vivem e não vivem com HIV: aportes do estudo GENIH para a atenção à saúde sexual e reprodutiva

Diferencias y similitudes entre mujeres que viven y no viven con VIH: aportes del estudio GENIH para la atención a la salud sexual y reproductiva

Adriana de Araujo Pinho [1]
Cristiane da Silva Cabral [2]
Regina Maria Barbosa [3]

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Abstract

This quantitative study in the city of São Paulo, Brazil, compared contexts of social vulnerability and sexual and reproductive behavior in a sample of 975 women living with HIV/AIDS (WLHIV) and 1,003 women not living with HIV, the latter recruited among users of the primary healthcare system. WLHIV experienced situations of greater vulnerability that potentially increased their risk of HIV infection and unplanned pregnancy and abortion. Compared to women users of the primary healthcare system, WLHIV reported higher rates of drug use, sex for money, exposure to intimate partner violence, difficulties in access to services for prevention and early diagnosis, unplanned pregnancies, induced abortion, and teenage pregnancy. A considerable number of the women users of the primary healthcare system shared these same experiences, but at lower rates. The identification of contexts of vulnerability and the integration of HIV testing services with sexual and reproductive health services should constitute lines of care for these women, both in specialized and primary care services.

HIV; Sexual and Reproductive Health; Women

Correspondence
A. A. Pinho
Laboratório de Educação em Ambiente e Saúde, Instituto Oswaldo Cruz, Fundação Oswaldo Cruz.
Av. Brasil 4365, Pavilhão Lauro Travassos, Rio de Janeiro, RJ 21040-360, Brazil.
adrianaapinho@gmail.com

[1] Instituto Oswaldo Cruz, Fundação Oswaldo Cruz, Rio de Janeiro, Brasil.
[2] Faculdade de Saúde Pública, Universidade de São Paulo, São Paulo, Brasil.
[3] Núcleo de Estudos de População Elza Berquó, Universidade Estadual de Campinas, Campinas, Brasil.

Introduction

In the last five years, technological innovations in the field of HIV prevention, diagnosis, and treatment have fueled the debate on needs and demands in sexual and reproductive health of persons living and not living with HIV/AIDS.

At the individual level, new technologies in prevention such as pre- and post-exposure prophylaxis, treatment as prevention, and self-testing have improved HIV risk management and led to a reduction in HIV transmission [1]. In the area of care and treatment, access and adherence to antiretroviral therapy (ART) have increased the survival of persons living with HIV/AIDS (PLWA) [2] and reduced the risk of mother-to-child transmission for HIV-positive women [3,4], thus increasing the likelihood that they will consider becoming mothers after learning of their serological status. More recently, the HTPN052 clinical trial in 2012 showed that early use of ART reduces sexual transmission of HIV by more than 96% in serodiscordant couples [5].

The proven benefits of ART have allowed the reorganization of sexual, reproductive, and affective trajectories, but some complex issues remain, such as the relationship between conception/contraception and the HIV prevention in serodiscordant couples. For example, the contraceptive choices made by women (and in some cases by couples) should consider not only the risk of an unwanted pregnancy, but also the risks of vertical and sexual transmission, although lower in the context of ART and viral load suppression. In addition, persistent stigma and prejudice prevent PLWA from accessing services and inputs, or at least discussing issues related to their intimate lives with health professionals or persons close to them who might otherwise provide social support [6].

Women's sexual, reproductive, and contraceptive questions and demands are frequently overlooked in healthcare settings, and are not analyzed in the life contexts that shape their trajectories in these areas. Although the recent epidemiological scenario shows an increase in cases among young gay males and other men who have sex with men and an increase in the male/female ratio in AIDS cases, 35% of cases still occur in women, the majority in their peak reproductive years (25 to 39). Heterosexual transmission accounts for 97.4% of such cases [7].

In 2013, a study was designed called *GENIH: Gender and Infection in the Context of the HIV/AIDS Epidemic in the City of São Paulo*, nested in a broader set of research initiatives aimed at filling the knowledge gap in Brazil on the sexual and reproductive health issues of women living with HIV/AIDS (WLHIV) in different contexts: São Paulo, with the current study, Rio de Janeiro [8], and Porto Alegre [9]. The GENIH study aimed to compare contexts of social vulnerability and sexual and reproductive behavior of WLHIV versus a sample of women not living with HIV, users of the primary healthcare system, hereinafter referred to as women of the primary healthcare system.

Updated knowledge on practices and decisions in the field of sexuality, reproduction, and life contexts, identifying situations of vulnerability in a representative sample of the female population with HIV in the largest Brazilian state capital, will shed light on the situation in which these women live and will allow designing more effective strategies for integrating actions and services in sexual and reproductive health and treatment and care for HIV. In addition, little has been studied about practices and decisions in the field of sexuality and reproduction in the overall female population in its interface with HIV prevention. A comparative analysis of the profiles related to sexuality, reproduction, prevention, and contraception and exposure to social risks among WLHIV and women of the primary healthcare system will also elucidate how HIV-related issues in the female population have been addressed in primary care, the current focus of policies for decentralization of HIV care in Brazil [10].

Methodology

GENIH study was a cross-sectional quantitative study in the city of São Paulo, Brazil, from February 2013 to May 2014 in a representative sample of WLHIV and a comparative sample of women of the primary healthcare system, recruited from primary care, ranging in age from 18 to 49 years.

The sample size was estimated at 1,000 for each group of women, taking into account a complex sample design effect (deff) of 1.6. An additional number of interviews were held (25%) as a safety mar-

gin to cover possible sample losses, due to refusal and loss of user follow-up in the units. Composition of the sample of WLHIV included the 18 public healthcare units for referral of WLHIV, accounting for 95% of AIDS patient care in the city. These units constituted the strata, and the sample of 1,000 women was distributed proportionally among the units according to the mean number of appointments for WLHIV at each of the 18 services.

Women of the primary healthcare system were selected in a two-stage stratified cluster sampling process. Strata consisted of the Regional Health Divisions of the city of São Paulo, and sample distribution was proportional to the size of these regions, according to the monthly mean numbers of medical and nursing appointments in the primary care units. Units were ordered for selection according to the existence versus absence of the Family Health Strategy, so as to obtain a sample implicitly stratified according to this variable. Thirty-eight services were selected from a total of 442.

Women were selected using a list with a predefined (systematic) sampling interval. Field supervisors approached the women and invited them to participate in the study. The study's objectives and procedures were explained, and eligible individuals that agreed to participate were referred to a private room for the informed consent process.

After the individuals signed the informed consent, a social and behavioral online questionnaire was applied by an interviewer, using a netbook. The questionnaires were generated with the QDS (*Questionnaire Development System* – NOVA Research Company. http://www.novaresearch.com/QDS/) software and pretested. All the study procedures were tested in a pilot study.

The study was approved by four institutional review boards, from the following: Referral and Training Center in STD/AIDS of the São Paulo Health Secretariat (case review 022/2011); Emílio Ribas Infectious Diseases Institute (11712112.6.0000.5375); São Paulo Municipal Health Secretariat (0043/12), and São Paulo Federal University (11712112.6.0000.5375).

Data analysis began with a social and demographic description of both samples. The results include descriptive statistics such as medians and interquartile ranges for continuous variables and proportions for categorical variables. Data on the group of WLHIV also include the context of diagnosis (age, time since diagnosis, self-perceived transmission route, and reason for HIV testing). The study investigated differences between the groups according to the following dichotomous variables: age at sexual initiation; number of sex partners; first pregnancy before 20 years; number of partners that resulted in pregnancy; proportion of unplanned pregnancies; induced abortion; use of contraceptive method(s); consistent condom use during vaginal sex in the previous year; lifetime situations of vulnerability or social risk: physical and/or sexual violence, illegal drug use, and sex for money.

To answer the question on differences between women living and not living with HIV according to life situations and sexual and reproductive health characteristics, insofar as possible we attempted to distinguish between events that occurred before diagnosis (or when the latter occurred during prenatal care and childbirth) from those that occurred after diagnosis, including those referring to the time of the interview.

A total of 975 interviews were held with WLHIV. The analysis excluded women who had not initiated sexual activity and those infected by vertical transmission, since it was impossible to investigate life situations prior to HIV infection and compare them to the group of women of the primary healthcare system. The results thus represent 918 WLHIV and 1,003 women of the primary healthcare system. The proportion of losses (eligible women that were selected but not interviewed) was similar in the two samples, 27% in WLHIV and 26.5% in women of the primary healthcare system. The main reasons for refusals were lack of time and refusal to discuss the subject.

The analyses used the Stata 14.0 software (StataCorp LP, College Station, USA). Using the "margin" post-estimation command, we compared the effect of belonging to each group on the likelihood of different events. Based on the estimation of predicted likelihoods of each target event (previously described dichotomous variables), adjusted in logistic regression models, we calculated the statistical significance ($p < 0.05$) and size of differences (in percentage points) of the predicted probabilities, called marginal effects, between the two groups, controlling for the model's other covariates (age, schooling, and skin color). When used in the comparative analysis, the event's occurrence before or at the time of diagnosis for WLHIV was also adjusted in the model for the women's age at diagnosis. All the analyses were adjusted for the complex sampling, and weights were used to compensate for differences in the probabilities women's selection in the two samples.

Results

Differences in the social and demographic profile of women living and not living with HIV

The social and demographic profile of the two samples (Table 1) shows a predominance of younger individuals among women of the primary healthcare system and women 35 to 49 years of age among WLHIV. Women of the primary healthcare system were more likely to have finished secondary school, but there were more women with incomplete or complete university among WLHIV. There were no differences in the proportions of women with and without work at the time of the interview. The proportion of women that self-identified as black was higher among WLHIV.

More than 80% of the women in both samples had previously been married or were currently married or in stable unions. At the time of the interview, the likelihood of being married or in a stable union was significantly higher in women of the primary healthcare system than in WLHIV (84.8% *versus* 69.8%). Proportionally more WLHIV had two or more children, possibly because they were older on average.

The context of HIV testing and diagnosis

The main route of HIV infection was sexual (Table 2), representing the main HIV exposure category in Brazilian women. Median time since diagnosis was 10 years; only 8.9% of the women had a recent diagnosis (≤ one year). The vast majority (86.9%) were using ART at the time of the interview, with a median of 8 years of use.

HIV diagnosis had been made during prenatal care in approximately one-third of the WLHIV. Comparing these data with the testing context among women of the primary healthcare system, 83% of the latter had already been tested at the time of the interview. Considering only the women who had never been pregnant, 50.3% had never had an HIV test. Prenatal care or childbirth accounted for 64.6% of the testing among women of the primary healthcare system, and 23.6% had been tested at their own initiative or during a testing campaign (data not shown).

Differences in sexual history, reproduction, prevention, and contraception

Sexual initiation for WLHIV was earlier (by 15 years) and with older partners, compared to women of the primary healthcare system (Table 3). The likelihood of initiating sexual activity with a partner more than five years older was also greater in WLHIV than in women of the primary healthcare system (38.4% versus 29.7%, respectively; $p < 0.0001$).

Both groups of women reported their first pregnancy at young ages (between 18 and 24 years), but the likelihood of WLHIV reporting the first pregnancy under the age of 20 was statistically greater than in women of the primary healthcare system (Table 3), as was the proportion that reported having become pregnant with more than one male partner (Table 3).

Among the sexually active women, consistent condom use in the year prior to the interview was statistically greater among WLHIV. At the time of diagnosis, condom use was reported as far lower (10.5%). Thirty percent of WLHIV did not use condoms consistently, and among women of the primary healthcare system, lack of condom use was considerably higher (84%). Use of contraception at the time of the interview was relatively high (83%) and also higher among WLHIV (Table 3), with condoms accounting for 62% of the contraceptive methods used by them.

The proportion of unplanned pregnancies in WLHIV appears not to have changed after diagnosis and was statistically higher than among women of the primary healthcare system (Table 3). More than a third had become pregnant after learning of their HIV diagnosis, and 66% of these reported that all or more than half of the pregnancies were unplanned, a proportion not very different from that before diagnosis. Since WLHIV had a childbearing history marked by lack of planning, it was expected that the likelihood of induced abortion would also be higher, as was observed both before and after diagnosis (Table 3).

Table 1

Social and demographic profile and life context of women living of HIV (WLHIV) and women users of the primary healthcare system. GENIH Study, city of São Paulo, Brazil, 2013-2014.

	WLHIV		Women of the primary healthcare system		p-value
	n *	% **	n *	% **	
Age bracket (years)					
Median (years) (IQR)	40 (34-45)		31 (24-39)		
18-24	42	4.5	257	26.3	< 0.0001
25-34	71	8.0	175	17.7	
35-44	320	35.2	315	31.5	
45-49	485	52.3	256	24.5	
Schooling					
Incomplete primary	247	27.0	204	20.2	0.0001
Complete Primary/Incomplete Secondary	234	25.3	247	24.8	
Complete Secondary	294	31.9	491	48.9	
University (complete or incomplete)	143	15.7	60	6.0	
Skin color					
White	373	40.1	391	39.1	< 0.0001
Black	158	18.0	107	10.7	
Brown	368	40.4	473	47.1	
Other (Asian/Indigenous)	16	1.6	31	3.0	
Currently working					
Yes	515	56.4	601	58.8	0.397
No	396	43.5	399	41.1	
Currently or previously married or in stable union	840	92.1	846	84.2	< 0.0001
Number of living children					
None	162	17.5	319	32.0	< 0.0001
1	261	28.8	267	27.0	
2 or more	495	53.7	417	41.0	
Total	918	100.0	1,003	100.0	

IQR: Interquartile range.

* Number differs between variables due to some missing data;

** Proportion weighted according to sampling strategy.

Differences in contexts of social vulnerability to HIV

The probabilities of history of illegal drug use, having a drug-using partner, and sex for money were also statistically higher in WLHIV than among women of the primary healthcare system (Table 4).

Many women in both samples reported a lifetime history of physical and/or sexual violence and intimate partner violence, but at higher rates in WLHIV (Table 4). WLHIV were also more likely to report a history of forced first sexual relations (6.8%), compared to women of the primary healthcare system (2.8%).

Discussion

The GENIH study analyzed the profiles of women living and not living with HIV, comparing them for situations/conditions in their life histories that increased their vulnerability and risk of HIV infection and selected reproductive events. Social and demographic differences between the two samples

Table 2

Characteristics related to HIV testing and diagnosis among women living of HIV (WLHIV). GENIH Study, city of São Paulo, Brazil, 2013-2014.

	n *	% **
Transmission route		
Sexual	814	90.5
Injecting drug use	-	-
Vertical	-	-
Blood transfusion	25	2.9
Other	25	2.7
Does not know	35	3.8
Age at diagnosis (years)		
18-24	255	28.0
25-34	469	52.0
35-49	181	19.6
Does not know or remenber	4	0.4
Median age (IQR)	28	(24-33)
Time since diagnosis (years)		
≤ 1	83	8.9
2-5	181	20.6
6-10	214	24.7
More than 10	408	45.7
Median time	10	(0-28)
Reason for HIV testing ***		
During prenatal care of childbirth	282	31.1
Physician ordered (outside prenatal/ childbirth)	78	8.5
Own initiative	95	10.8
Partner or children became ill	240	26.4
Person herself became ill	205	22.6
Other	1	0.1
Total	918	100.0

IQR: Interquartile range.

* Number differs between variables due to some missing data;

** Proportion weighted according to sampling strategy;

*** Excludes vertical transmission (n = 44).

mirror the trends in the epidemic in the female population in the city of São Paulo. For example, age distribution differences reflect not only the profile in the demand for primary care during pregnancy and childbirth, thus a younger group, but also the age profile in the distribution of AIDS cases in the female population, concentrated in the 30-49-year age bracket [11].

As for differences in education, from 2004 to 2014 there was a downward trend in reported AIDS cases among women with incomplete primary schooling or less and an increase in women with incomplete or complete university schooling [11,12], which may be reflected in our data. The following aspects are also relevant: first, Brazil's policy of universal access to ART and the high cost of medication may be attracting women with more schooling to the health services; and second, the shorter survival of WLHIV with less schooling [13] may increase the proportion of prevalent cases among women with more schooling.

Table 3

Sexual and reproductive behavior of women living of HIV (WLHIV) and women users of the primary healthcare system. GENIH Study, city of São Paulo, Brazil, 2013-2014.

	WLHIV			Women of the primary healthcare system			p-value
	n *	% **	% adjusted ***	n *	% **	% adjusted ***	
Age at sexual initiation (years)							< 0.0001
≤15	319	34.9	38.5	296	30.7	27.5	
> 15	589	65.1	61.5	701	69.3	72.5	
First pregnancy before 20 years of age	444	57.7	58.5	421	49.8	48.9	0.001
Lifetime partners							< 0.0001
1-2	141	15.7	16.7	463	46.1	46.0	
More than 2	763	84.3	84.1	533	53.9	54.2	
Currently married/with partner							< 0.0001
Yes	620	67.6	69.8	862	86.2	84.8	
No	298	32.4	30.2	139	13.8	15.2	
Number of lifetime partners resulting in pregnancy							
1	404	49.8	53.0	615	72.0	69.2	< 0.0001
2 or more	412	50.2	46.9	231	27.9	30.7	
Number of partners resulting in pregnancy before HIV diagnosis (n = 765)							
1	456	59.8	62.9	-	-	-	0.018
2 or more	308	40.2	37.1	-	-	-	
Number of partners resulting in pregnancy after HIV diagnosis (n = 308)							
1	265	91.0	91.9	-	-	-	< 0.0001 #
2 or more	25	8.9	8.0	-	-	-	
Contraception use ##							
Current (n = 585; n = 533)	546	85.0	83.4	486	73.0	73.8	< 0.0001
At time of diagnosis (n = 940)	286	48.7	47.8	-	-	-	< 0.0001 #
Always uses condoms during vaginal sex ###							
Currently (n = 731; n = 934)	470	69.1	69.3	154	16.1	15.9	< 0.0001
At time of diagnosis (n = 862)	84	10.2	10.5	-	-	-	0.007 #
Proportion of unplanned pregnancies (all or more than half)							
Lifetime	526	64.3	63.8	455	54.0	54.7	< 0.0001
Before HIV/diagnosis during pregnancy (n = 765)	496	64.5	64.0	-	-	-	< 0.0001 #
Since HIV diagnosis (n = 308)	194	66.9	66.3	-	-	-	< 0.0001 #
History of abortion §							
Lifetime	116	14.1	11.9	29	3.2	3.0	0.0001
Before HIV diagnosis (n = 679)	102	14.9	15.8	-	-	-	< 0.0001 #
Since HIV diagnosis (n = 308)	24	5.3	6.1	-	-	-	0.032 #

* Number differs between variables due to some missing data;

** Proportion weighted according to sampling strategy;

*** Marginal proportion adjusted for sampling strategy and age, schooling, and skin color;

Test of significance for differences between events that accurred before or after HIV diagnosis for WLHIV and those that accurred in the lifetime or at time of interview for women of the primary healthcare system;

% for current use only considered women sexually active in the previous year and not pregnant, and at the time of diagnosis the analysis excluded WLHIV that were diagnosed during prenatal care (n = 270);

% for current use only considered women that were sexually active in the previous year and that practice vaginal sex;

§ Only for women with history of pregnancy and for those who became pregnant before or after diagnosis among WLHIV.

Table 4

Situations of social vulnerability in women living of HIV (WLHIV) and women users of the primary healthcare system. GENIH Study, City of São Paulo, Brazil, 2013-2014.

	WLHIV			Women of the primary healthcare system			p-value
	n *	% **	% adjusted ***	n *	% **	% adjusted ***	
Lifetime drug use	222	26.8	29.3	124	13.5	12.1	< 0.0001
Current or former drug-using partner	479	59.5	61.0	268	29.0	27.7	< 0.0001
Lifetime history of sex for money	64	7.5	7.9	12	1.3	1.3	< 0.0001
Lifetime history of physical violence	394	47.1	45.5	330	35.5	36.8	0.003
Lifetime history of intimate partner violence	256	30.7	28.7	180	19.5	21.1	0.005
Forced first sexual relations	72	7.7	6.8	26	2.5	2.8	< 0.0001
Lifetime sexual violence	187	21.4	19.8	89	9.3	10.2	< 0.0001
Lifetime intimate partner sexual violence	99	11.4	10.2	57	6.3	7.1	0.056

* Number differs between variables due to some missing data;

** Proportion weighted according to sampling strategy;

*** Marginal proportion adjusted for sampling strategy and age, schooling, and skin color.

The higher proportion of black WLHIV also reflects how the AIDS epidemic has been distributed according to skin color; the HIV detection rate among black and brown women in São Paulo was higher than in white women in 2013 [11].

Women are mostly infected through heterosexual relations, and prenatal care is the predominant context for HIV testing and diagnosis in the childbearing-age female population in Brazil and the city of São Paulo [7,11]. Although the supply of HIV testing has been expanded, it is still concentrated in pregnancy [14]. Such expansion appears to contribute to reducing the risk of late diagnosis [15], but a considerable proportion of the women in this study (22.6%) and in other studies [16,17] are only tested when AIDS symptoms are already present.

The concentration of HIV diagnosis in the gestational period raises some issues. First, the coverage of HIV testing is low in women that have never been pregnant. Second, despite the considerable reduction in the vertical transmission rate in women with access to ART in Brazil [3,4], this form of transmission is still possible, depending on the time when the test is performed during pregnancy (and childbirth). Third, diagnosis during pregnancy raises dilemmas, insecurity, and risks of other adverse events such as violence by the partner during the pregnancy, stigma related to disclosure of HIV diagnosis, fears associated with vertical and sexual transmission, and the added emotional, physical, and socioeconomic burden of an HIV diagnosis in the context of an unplanned pregnancy [18].

The two groups also differed significantly in relation to sexual and reproductive life. Sexual initiation was earlier in WLHIV, corroborating a study by Santos et al. [16], and there was also a larger age difference with partners at sexual initiation in WLHIV. Larger age difference between the woman and male partner at sexual initiation has been identified as one of the factors in the association between HIV infection and other STIs and early sexual initiation [19]. In addition to increasing women's exposure to men with longer sexual experience and thus greater risk of STIs, the age difference hinders sexual negotiation and the use of forms of prevention and contraception as a function of gender inequalities [20,21]. This factor may explain the recent increase in the detection rate of AIDS cases in the female population 15 to 19 years of age [7].

WLHIV also appear to have been more exposed to risk of teenage pregnancy when compared to women of the primary healthcare system. Teenage pregnancy is more frequent in women with low schooling and low per capita family income and black women, according to the Brazilian and international literature [19,22]. According to our study, even after adjusting for age, schooling, and skin color, differences in adolescent fertility persisted between the groups, suggesting that other factors such as

different levels of knowledge and access to effective forms of sexual and reproductive risk management in adolescence are more present in the histories of WLHIV.

Having biological children by more than one father over the course of one's childbearing history ("multi-partnered fertility"), observed in our study at a higher rate in WLHIV, has been a growing trend in Western societies since the latter half of the 20th century [23,24]. However, there are no data on this phenomenon's prevalence and distribution in the Brazilian female population in general or in WLHIV. Having children with more than one partner and women's reproductive history has been associated with early age at sexual and reproductive initiation [24], and with poverty [25]. In the case of WLHIV, the partner's death from AIDS adds a further dimension to this scenario.

Lower condom use in women of the primary healthcare system suggests that it is not a priority for the women as a strategy for contraception and STI prevention [26]. Meanwhile, for WLHIV, condom use has been reported as the principal method for dual protection, i.e., to simultaneously prevent pregnancy and sexual transmission of HIV [9,27,28]. Even so, the proportion of unplanned pregnancies in the sample of WLHIV appears not to have changed following diagnosis, indicating that health professionals' emphasis on condom use as dual protection may not prove effective for preventing pregnancy [26]. Many of the women (and their partners) maintain a profile of unplanned fertility, regardless of their HIV diagnosis. The result is consistent with studies showing that positive HIV status is not necessarily associated with a decrease in unplanned pregnancy [27,29,30,31].

WLHIV reported more lifetime induced abortions when compared to women of the primary healthcare system, corroborating other studies [32,33]. The proportion of induced abortion any time in life among WLHIV (12%) was close to that observed in two Brazilian studies, around 13% [34,35]. In this sense, although the proportions of unplanned pregnancies did not differ statistically before and after HIV diagnosis, the report of abortion after diagnosis was much lower. Pilecco et al. [35] also found a higher prevalence of induced abortion in pregnancies before versus after diagnosis. Several international studies have shown a significant decrease in the abortion rate in HIV-positive women since the introduction of ART [36,37,38].

These results provide food for thought on the factors influencing the decision whether to interrupt pregnancy after diagnosis. In the context of abortion following knowledge of one's serological status, although HIV may constitute an important motive, it is not the only one, and it is conditioned by other factors in women's lives. Some relate to seropositive status, such as the fear of vertical transmission, fear of not being able to raise the child due to one's health condition, and the impediment to breastfeeding in a society that values it as affirmation of one's identity as a woman and mother. In addition, the relationship with the male partner and his support, as well as that of the immediate family, are other fundamental elements in making the decision [39,40].

Women's sexual and reproductive trajectories, as described previously, are circumscribed, traversed, and directly and indirectly determined by other situations that distinguish the vulnerability and social risk of WLHIV from those of women of the primary healthcare system. Other studies have reported similar differences between these two groups in drug use and sex for money [9,16]. Both are risk factors for HIV infection and transmission and reproductive events like unplanned pregnancies and abortion [32,34]. The association between injecting and non-injecting drug use and abortion has been explained by female drug users' greater involvement in unprotected sex, increasing the risk of unwanted pregnancy, which in turn increases the odds of induced abortion [41].

Women that reported practicing sex for money showed a higher risk of STIs and unplanned pregnancies, both in the context of their stable relationships and with clients. Increased prevalence of abortion has also been observed in this group when compared to the overall female population [42,43]. Such data suggest even greater difficulties in access to effective contraceptive methods, given the dual context of stigmatization associated with prostitution and HIV.

The two groups also differed significantly in the rate of reported gender violence. Various studies have shown greater risk of STIs/HIV among women that suffer physical and/or sexual violence, particularly when perpetrated by the intimate partner [44,45,46,47]. The mechanisms proposed to explain such an association are bidirectional [47,48]. Intimate partner violence can lead to HIV infection through transmission during the violent sex act itself, greater involvement in risk practices for HIV in women that suffer violence (e.g., lack of condom use), and recourse to drug use to cope with violent situations. Meanwhile, the disclosure of HIV infection could trigger situations of violence or favor remaining

in or entering abusive relationships, out of fear of not finding a new partner that would accept one's serological status. In addition, intimate partner physical and/or sexual violence has been associated statistically with events in women's reproductive histories, such as unwanted/unintended pregnancies and abortion [49].

Study limitations

The phenomena analyzed here are interconnected in women's life trajectories. There is a chain with multiple coexisting events in these trajectories, the analysis of which would require a longitudinal approach (the scope of future articles). The current analysis may have been limited by the lack of distinction of all the episodes in relation to the time of their occurrence, whether before or after the HIV diagnosis, and by the fact that we interviewed women in both groups that to a certain extent are linked to the public healthcare system. We lack information on sexual and reproductive health and prevention and care for HIV/AIDS in women that do not access public services. Some of them may have access to private healthcare services or health plans, but one can feasibly assume that another subgroup of these women represents precisely an even more vulnerable group, who do not even access the public primary care system. Among the latter, for those living with HIV, the indicators of infection and sexual and reproductive health may be even worse.

Final remarks

The findings show that some events, behaviors, and practices in the field of sexual and reproductive health persist after (or independently of) HIV diagnosis, such as unplanned fertility, prevalence of abortion, and violence, and thus that other factors overlap or combine to determine them. Despite the greater magnitude of various adverse behaviors and situations among women living with HIV, a considerable number of women of the primary healthcare system shared the same experiences, also making them vulnerable to HIV infection. The identification of these contexts of vulnerability among women of the primary healthcare system and the timely supply of HIV testing highlight the importance of on-going awareness-raising and training for health professionals in primary care in strategies for prevention and early diagnosis.

In addition to prenatal care, it is essential to systematically offer non-bureaucratic, rapid HIV testing, taking advantage of other moments for such testing, such as during cervical cancer screening, reproductive planning, and care following menopause, as well as in services and programs for women exposed to violence (psychological, physical, and sexual). In addition, the supply of HIV testing should be a prime setting for the discussion of safe sex practices, pre- and post-exposure prophylaxis, prevention of STIs, and combined prevention methods, among others.

Due to the relations between various events in the health of women at risk of HIV infection and vice-versa, designing comprehensive, integrated strategies in the care for women and men, whether in primary or specialized services, is crucial in a time marked by evidence of the AIDS epidemic's resurgence in Brazil [50]. There are no published data on the integration of sexual and reproductive health services and testing and treatment services for persons living with HIV/AIDS in Brazil, although such integration is featured in the National Policy on Women's Comprehensive Healthcare (2004) and the Plan for Dealing with the Feminization of the AIDS Epidemic and other STIs (2007). This strategy has become even more crucial with the decentralization of HIV testing, and more recently with the organization of lines of care for persons living with HIV through primary care, in which other health needs and demands are present.

The data presented above emphasize that it is not possible to design lines of care for women living with HIV/AIDS without considering their sexual and reproductive trajectories and vice-versa [26]. The data also point to the unfeasibility of developing lines of care for women in the overall population without integrating them with prevention services in sexual and reproductive health, including prevention and care for STIs/HIV/AIDS.

Contributors

A. A. Pinho and R. M. Barbosa participated in the study conception and design, coordination of the fieldwork, data analysis and interpretation, and writing the article. C. S. Cabral participated in the coordination of the fieldwork, analysis, and critical revision of the manuscript.

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Resumo

Estudo quantitativo foi conduzido no Município de São Paulo, Brasil, comparando contextos de vulnerabilidade social e o comportamento sexual e reprodutivo de uma amostra de 975 mulheres vivendo com HIV/aids (MVHA) e de 1.003 mulheres usuárias da rede de atenção básica à saúde. As MVHA são marcadas por situações de maior vulnerabilidade que, potencialmente, aumentaram o seu risco para a infecção pelo HIV e para eventos no campo reprodutivo. Comparando com mulheres usuárias da rede de atenção básica à saúde, as MVHA relataram em maiores proporções: uso de drogas, sexo em troca de dinheiro, exposição a parceiros íntimos violentos, dificuldades no acesso a serviços de prevenção e diagnóstico precoce, ocorrência de gestações não planejadas, aborto provocado e gravidez na adolescência. Parcela considerável das mulheres usuárias da rede de atenção básica à saúde compartilha as mesmas experiências, porém em menor magnitude. A identificação de contextos de vulnerabilidade e a integração de serviços de testagem anti-HIV e de saúde sexual e reprodutiva devem compor as linhas de cuidado às mulheres, tanto nos serviços especializados quanto nos de atenção básica.

HIV; Saúde Sexual e Reprodutiva; Mulheres

Resumen

El estudio cuantitativo se realizó en el Municipio de São Paulo, Brasil, comparando contextos de vulnerabilidad social y el comportamiento sexual y reproductivo de una muestra de 975 mujeres, viviendo con VIH/SIDA (MVHA) y de 1.003 mujeres usuarias de la red de atención básica a la salud. Las MVHA se marcan por situaciones de mayor vulnerabilidad que, potencialmente, aumentaron su riesgo para la infección por el VIH y para eventos en el campo reproductivo. Comparando con mujeres usuarias de la red de atención básica a la salud, las MVHA informaron en mayor proporción de: consumo de drogas, sexo a cambio de dinero, exposición a parejas sentimentales violentas, dificultades en el acceso a servicios de prevención y diagnóstico precoz, ocurrencia de gestaciones no planeadas, aborto provocado y embarazo en la adolescencia. Una proporción considerable de las mujeres usuarias de la red de atención básica a la salud comparte las mismas experiencias, aunque en menor magnitud. La identificación de contextos de vulnerabilidad y la integración de servicios de test anti-VIH y de salud sexual y reproductiva deben formar parte de las líneas de cuidado a las mujeres, tanto en los servicios especializados, como en los de atención básica.

VIH; Salud Sexual y Reproductiva; Mujeres

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