

Characteristics of male and female injecting drug users of the AjUDE-Brasil II Project

Características de homens e mulheres usuários de drogas injetáveis do Projeto AjUDE-Brasil II

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Abstract

The object of this study is to compare female and male injection drug users (IDUs) in terms of sociodemographic profile and aspects of their initiation to the use of injection drugs. It was a cross-sectional and multicentric study realized in 2000-2001 in six Brazilian syringe-exchange programs. 146 women and 709 men were interviewed, with average ages of 29.5 and 28.3 years, respectively. Both began injection drug use at similar ages, 18.6 and 19.3, for women and men, respectively, although women report more frequently than men that they were initiated by a sexual partner to acquiring drugs and syringes, and to the act of injection. Compared to men, women report significantly more regular sexual partners (83% versus 72%); fewer casual partners (39% versus 58%), more use of injection drugs with their partners, as well as more "exchange" of sex for drugs. Among HIV-seropositive individuals, women show less education, had more chance of their sexual partners participating in their initiation to injection drugs, and report sexual partners that used injection drugs more frequently. Female IDUs exhibit aspects of behavior indicating greater vulnerability to HIV infection than do males.

Intravenous Substance Abuse; HIV; Acquired Immunodeficiency Syndrome; Harm Reduction

Introduction

The trajectory of the HIV/AIDS epidemic around the world has been characterized by an increase in female exposure, both sexual and through injection drug use ¹.

In Brazil, of the 362,364 cases of AIDS documented through June, 2004, 111,314 were women and 241,050 were men. HIV transmission through heterosexual sexual relations has increased significantly in recent years, as evidenced by the progressive shift in the rate of AIDS cases between men and women ².

Between 1983 and 1990, injection drug users (IDUs) represented 31.6% of all the AIDS notifications among women; today, they represent 5.7%. However, the percentage of AIDS cases among women for which the mode of transmission is recorded to be unknown, oscillates between 20% and 30%, depending on the year, suggesting lack of knowledge of the circumstances of transmission and of their sexual partners ³.

Risk behaviors for HIV infection have been differentiated between males and females, notably among IDUs. Various international studies demonstrate that HIV infection among female and male IDUs are associated with distinct factors, predominantly heterosexual activity and the presence of recent sexually transmitted diseases (STDs) ⁴, as well as syringe sharing and unprotected sexual contact with an-

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other IDUs⁵. Also in Brazil, a study⁶ of 250 injection cocaine users showed greater prevalence of HIV among women, attributed to unprotected heterosexual sex with IDUs. On the other hand, among 2,994 women attended by the Anonymous Testing Service, it was found that low education, low family income, injection drug use, and clinical history of STDs are risk factors for HIV infection⁷.

Important evidence on the circumstances of initiation to injection drug use among women and on the risk of HIV seroconversion have been accumulating. The necessity for assistance with the act of injecting oneself, whether it be from sexual partners or from other women, as well as dependence in acquiring the drugs, have been associated with HIV seroconversion^{8,9,10}.

In addition, gender differences may be associated with different risks of HIV infection. Grimberg¹¹ analyzed gender differences among women living with HIV in Argentina, suggesting that women were infected through unprotected sex and syringe sharing. In Brazil, a study in Rio de Janeiro and Santos, described that, whereas among male IDUs there may be greater peer pressure to share injection materials with group members, among women there may be a tendency toward private use of injection drugs, together with the sexual partner, probably due to prejudice against the practice¹².

Besides those aspects described above, some studies demonstrate that women who have regular sexual partners, sex workers, and those with IDUs partners or those who obtain drugs in exchange for sex, have a greater chance of being infected by HIV^{10,13}.

In order to contribute to a field in which comparisons between female and male IDUs in Brazil are scarce, this study proposes to characterize how women and men are introduced to injection drug use, to verify needle and syringe sharing and the use of condoms, in addition to the relationship between sex and drugs, for both men and women. The hypothesis being investigated in this study is that women are, more frequently than men, inserted in risk situations for infection by HIV, both in the context of initiation to and sharing of drugs as well as in the context of sexual activity.

Methods

The data analyzed derive from a cross-sectional and multicentric study, the AjUDE-Brasil II Project, undertaken in 2000/2001, in syringe-exchange programs (SEP) in Porto Alegre and Gravataí (State of Rio Grande do Sul), São José

do Rio Preto (State of São Paulo), Florianópolis and Itajaí (State of Santa Catarina) and Salvador (State of Bahia).

Eligible participants, recruited by the harm reduction project's outreachers, were 18 years of age or older and reported injection drug use during the last five years, independent of frequency and quantity. Such information was evaluated operationally through questions in the collection instrument and answered by the interviewer, in order to improve the reliability of the eligibility criteria (for example, presence of stigmas, information regarding drug preparation). Individuals that did not fulfill the criteria were not included.

Face to face interviews were performed by previously trained and monitored technicians, using a structured interview instrument¹⁴. It covered sociodemographic data, drug use and sexual behaviors, and other dimensions of the individuals' lives. Other data collected were fingerprint blood samples, using filter paper, to test for HIV, hepatitis B and C, HTLV I and II, and syphilis¹⁵.

The power to test the hypothesis that women ($n = 146$) were more exposed to risk behaviors than men ($n = 709$) varied from 90.4% to 99%, taking into account the smallest and the greatest proportion of exposure among men, considered as controls, in a hypothetical case-control study (5.3% for the smallest and 66.9% for the greatest exposure, with odds ratios (OR) of 2.05 and 6.61, respectively).

The variables analyzed, defined *a priori* keeping in mind the aims of the study and their importance in similar studies, were initially stratified by sex. Subsequently, comparative analyses were conducted in the subgroup of HIV-seropositive women and men. Student's t-Test, Pearson's Chi-square Test, or the Fisher's Exact Test were used. Unadjusted Mantel-Haenszel OR was used to measure the force of association^{16,17}.

Logistic regression models were used to evaluate the independent effects of each variable that was potentially associated with the seroprevalence of HIV, controlled for confounding factors¹⁸. The event considered was female HIV-seropositivity, compared with male HIV-seropositivity. Variables that were associated with the event with p -values ≤ 0.20 in the univariate analysis were tested in the multivariate analysis, so that possible event predictors were not excluded in the analysis¹⁸. Adjustment was made for the SEP where the individual was recruited, due to their great heterogeneity, with those variables with $p \leq 0.05$ and biological plausibility remaining in the final model.

This protocol follows all of the ethical principles of *Resolução 196/96* and was approved by the Ethics Committee of the Universidade Federal de Minas Gerais under process number 168/99, dated March 1, 1999.

Results

Comparison between women and men

Of the 855 IDUs participating in this study, 17% were women and 83% men, with a similar average age (29.5 ± 8.58 years for women and $28.3 \pm$

8.16 years for men). A significant difference was observed in education: 57% of men and 45% of women reported having completed the 5th to 8th grade ($p = 0.055$).

The distribution of men and women by the SEP city did not exhibit homogeneity; nor did marital status, skin color, and occupation. The greater proportion of women were married or widowed, not white, and did not have an occupation during the six months prior to the interview (Table 1).

With regard to injection drug use, the average ages of initiation, whether they be with injection or non-injection drugs, were not signif-

Table 1

Sociodemographic profile of female and male injection drug users (IDUs). AjUDE-Brasil II Project, 2000/2001.

Characteristics*	Females (n = 146)		Males (n = 709)		p**
	n	%	n	%	
Age bracket (years)					0.478
< 20	17	12	82	11	
20-30	71	49	389	55	
31-40	38	26	170	24	
> 41	19	13	68	10	
Education					0.055
No education	5	4	24	3	
1st-4th Primary	56	40	196	29	
5th-8th Primary	63	45	383	57	
Secondary school or higher	16	11	68	11	
Syringe-exchange program city					< 0.01
Porto Alegre	49	34	206	29	
São José do Rio Preto	42	29	86	12	
Itajaí	12	8	85	12	
Florianópolis	9	6	48	7	
Salvador	27	18	176	25	
Gravataí	7	5	108	15	
Marital status					< 0.001
Single	61	42	406	57	
Married or co-residing	70	48	218	31	
Separated	7	5	69	10	
Widowed	8	5	14	2	
Skin color					0.011
White	54	37	346	49	
Non-white	91	63	362	51	
Occupation					0.030
No	50	36	179	26	
Yes	91	64	498	74	

* Data without information were excluded (n = 2);

** Comparison of proportion (Pearson's χ^2).

icantly different. Nor were the average amount of time using injection drugs (10.1 ± 7.8 years for women and 9.6 ± 7.8 years for men). Also not showing significant difference between the sexes were the proportion of beginners, defined here as those IDUs with up to three years of injection drug use, or the frequency of injection drug use in the last six months: 23% of women and 17% of men reported using two to four times per week in the last six months.

As for their introduction to injecting drugs (Table 2), women, as compared to men, had a greater chance of getting the drug for the first injection from a sexual partner (OR = 21.6; 95%CI: 8.2-52.5), from intimate friends (OR = 2.8; 95%CI: 1.4-5.5), and acquaintances (OR = 3.0; 95%CI: 1.5-6.2), as compared to obtaining drugs on their own or through other means. Regarding injection equipment used for the first time, such as needles and syringes, 55% of men and 43% of women obtained them in

pharmacies. A greater proportion of women (compared to men) reported to have their materials through sexual partners as obtaining them in pharmacies (OR = 10.8; 95%CI: 4.6-25.6). As regards obtaining injection materials from intimate friends, acquaintances, drug dealers, and other people, significant differences between men and women were not observed.

A larger proportion of women were helped in their first injection by a sexual partner, having 12 times greater chance of being helped by a sexual partner than injecting by oneself without help (OR = 12.6; 95%CI: 5.7-28.4). As for the other categories, including intimate friends and acquaintances, significant associations were not observed.

As for sharing, defined here as "to give, loan, or receive needles and syringes", significant differences according to sex were not documented. Regarding giving or loaning used syringes and/or needles, 52% of women and men had

Table 2

Profile of initiation to drug use among female and male injection drug users (IDUs). AJUDE-Brasil II Project, 2000/2001.

Characteristics*	Females		Males		OR	95%CI**
	n	%	n	%		
Obtaining drugs						
By oneself or other means***	14	10	173	24	1.0	
Sexual partner	25	17	15	2	21.6	8.3-52.5
Intimate friend	45	31	201	28	2.8	1.4-5.5
Acquaintance	30	21	124	17	3.0	1.5-6.2
Drug dealer	31	21	195	27	2.0	1.0-4.0
Obtaining materials						
Pharmacy	62	43	388	55	1.0	
Sexual partner	19	13	11	2	10.8	4.6-23.6
Relative	4	3	18	3	1.4	0.4-4.6
Intimate friend	27	19	114	16	1.5	0.9-2.5
Acquaintance	18	12	68	10	1.7	0.9-3.1
Drug dealer	1	1	11	2	0.6	0.0-4.4
Others#	14	10	98	14	0.9	0.5-1.7
Drug injection##						
Without assistance	23	16	201	28	1.0	
Sexual partner	26	18	18	3	12.6	5.7-28.4
Relative	8	6	36	5	1.9	0.7-5.0
Intimate friend	56	39	304	43	1.6	0.9-2.8
Acquaintance	29	20	137	19	1.8	1.0-3.5
Drug dealer	2	1	7	1	2.5	0.3-14.4

* Data without information were excluded;

** Mantel-Haenszel Test/Fisher's Exact Test;

*** Acquired by the individual himself, relatives, or others (found, robbed, traded, unknown);

Health clinic, syringe-exchange project, agent, ground, robbed, unknown, drug dealer, unspecified;

Six observations were excluded.

done it at some time in their lives, 44% of women and men in the last six months, 48% of women and 58% of men in the last month, and 34% of women and 36% of men in the last drug use session. Regarding receiving such equipment, 49% of women and 44% of men reported having received used syringes and/or needles at some time in their lives, 43% of women and 37% of men in the last six months, 68% of women and 61% of men in the last month, and almost 33% of men and women, in the last drug use session.

The results of the comparisons of sexual behavior of women and men (Table 3) demonstrate that an opposite sex partnership had a greater chance of being usual for women than

for men (OR = 2.0; 95%CI: 1.2-3.4); and greater chance of being casual for men (58.0% versus 39.0% for women). Regular sexual partnership of the same sex were more frequently for women (OR = 8.2; 95%CI: 2.7-25.0) and did not differ statistically between men and women when casual.

Report of consistent use of condoms in the last six months, defined here as "condom use in all sexual relations", was encountered in regular opposite-sex couples for one fourth of women and 27% of men. The suggestion to use condoms by one of the partners, compared to the suggestion by both partners (reference category), had a greater chance of being on the part of the woman (OR = 8.1; 95%CI: 3.8-17.2);

Table 3

Profile of sexual partners, condom use, and drugs use of female and male injection drug users (IDUs) during the six months before being interviewed. AjUDE-Brasil II Project, 2000/2001.

Characteristics*.**	Females		Males		OR***	95%CI#
	n	%	n	%		
Partners and condom use						
Regular opposite sex	106	83	408	72	1.97	1.2-3.4
No condom use	79	75	295	73	1.13	0.7-2.0
Use suggested by the IDUs himself	30	60	80	36	8.09	3.8-17.2
Use suggested by IDUs' partner	3	6	60	27	0.49	0.1-1.8
Use suggested by both partners	17	34	165	51	1.00	0.4-1.7
Casual opposite sex	48	39	331	58	0.46	0.3-0.7
No condom use	17	37	165	51	0.57	0.3-1.1
Use suggested by the IDUs himself	24	67	150	59	1.20	0.5-3.1
Use suggested by IDUs' partner	4	11	45	18	0.67	0.2-2.7
Use suggested by both partners	8	22	60	23	1.00	0.4-2.3
Regular same sex	9	36	12	6	8.16	2.7-25.0
Casual same sex	7	30	34	19	1.92	0.7-5.5
Partners also use drugs						
Regular opposite sex	59	57	46	12	10.14	6.0-17.2
Casual opposite sex	22	50	57	18	4.49	2.2-9.1
Regular same sex	5	56	5	45	1.50	0.2;13.0
Casual same sex	4	57	11	35	2.42	0.4-17.4
Sex under influence of drugs						
Regular opposite sex	61	59	201	52	1.30	0.9-2.1
Casual opposite sex	31	67	190	62	1.28	0.7-2.6
Sex in exchange for drugs						
Casual opposite sex	20	43	39	12	5.52	2.7-11.4
Casual same sex	4	67	19	56	1.05	0.2-7.2

* Data without information were excluded (losses varied from 14 to 48 individuals). In all categories the comparison was done with no as reference, with the exception of these variables: "condom use" and "sex under the influence of drugs" in which comparison was done with always use and never use, respectively;

** Very small "n" are not presented;

*** Comparisons restricted to yes and no;

Mantel-Haenszel Test/Fisher's Exact Test;

condom use was suggested by the partner for 6% of women and 27% of men, indicating that women suggest using condoms more frequently than do men. Among casual partners, consistent use of condoms was mentioned by 63% of women and 49% of men; the suggestion to use condoms was made by 67% of women and 59% of men, and by the partner for 11% of women and 18% of men, when compared with the suggestion to use condoms being made by both partners.

A greater proportion of women than men reported using drugs with their partners of the opposite sex, having about ten times greater chance of doing them with regular partners (OR = 10.1; 95%CI: 6.0-17.2), and four and a half times greater with casual partners (OR = 4.5; 95%CI: 2.2-9.1) considering no use of drugs as reference. As for drug use with same-sex partners, whether regular or casual, there was no significant difference. There was also no significant difference in the practice of sex with the opposite sex under the influence of drugs, either regular (59% and 52%), or casual partnership (67% and 62%, respectively, men and women).

Exchange of sex for drugs with casual partners of the opposite sex was reported five times more by women (OR = 5.5; 95%CI: 2.7-11.4). In casual couples of the same sex there was no significant difference.

Comparison between HIV-seropositive women and men

In this study, 39% of female and 36% of male IDUs were HIV seropositive. Table 4 presents the results of comparisons between them, in terms of sociodemographic and behavioral characteristics. Considering the median group age (31 years), a greater proportion of HIV-seropositive women (53%) show ages above the average as compared to men (46%), though this difference is not significant. With regard to the education of those infected, women had less schooling (up to four years less) than men (OR = 2.0; 95%CI: 1.0-3.8).

Half of IDUs with positive serology were from Porto Alegre, with 44% of women and 54% of men ($p < 0.05$). In all the SEP, except São José do Rio Preto and Gravataí, the proportion of HIV-seropositive women was similar to that of men. Nevertheless, in São José do Rio Preto this proportion was significantly greater (OR = 3.2; 95%CI: 1.4-7.4) and in Gravataí it was smaller (OR = 0.5; 95%CI: 0.2-1.8), but not significant. Among IDUs recruited in Salvador, where a lower global rate of HIV infection was observed,

women and men show similar rates (5% and 4%, respectively).

As regards marital status, infected women are more likely than infected men to be married (OR = 2.6; 95%CI: 1.4-4.8) or to be non-white (OR = 2.1; 95%CI: 1.1-3.9). Reported occupation does not differ between them.

Among HIV-infected IDUs, aspects of their introduction to injection drug use suggest that women mention with greater frequency that a sexual partner acted as facilitator in obtaining drugs (OR = 21.0; 95%CI: 4.6-105.4), in obtaining injection materials (OR = 16.5; 95%CI: 2.8-24.8), and in injecting the drugs for the first time (OR = 31.4; 95%CI: 7.3-148.3), as compared to obtaining one's own, obtaining in a pharmacy, and injecting by oneself, respectively.

Although not significant, HIV-seropositive females had a greater chance than HIV-seropositive males of having sexual relations in the last six months with regular partners of the opposite sex (OR = 2.2; 95%CI: 0.9-5.4) and with casual partners of the same sex (OR = 3.3; 95%CI: 0.9-12.3).

Regarding drug use and sexual relations, infected women had a greater chance of having regular partners who also used drugs as compared to infected men (OR = 10.4; 95%CI: 4.2-25.9), however no significant difference was observed between the proportion of men and women that reported having sex under the influence of drugs. Nevertheless, among casual partners, HIV-seropositive females had a greater chance of having sexual relations in order to obtain drugs (OR = 4.3; 95%CI: 1.3-14.8) than their male partners.

More than half of men and women that mention not using condoms consistently with regular partners of the opposite sex were infected with HIV. Among casual partners, a greater proportion of men (51%) than women (18%) who reported not using condoms consistently were infected ($p = 0.012$).

Table 5 presents the results of the final multivariate model. It shows that education of less than four years (OR = 3.5; 95%CI: 1.2-10.0), having been introduced by a sexual partner to injection drug use (OR = 23.7; 95%CI: 2.9-191.8), and having a regular partner that uses injection drugs (OR = 8.0; 95%CI: 2.9-22.6) were significantly associated with HIV-seropositive women when compared to men of the same serology status. All the OR obtained in the multivariate analysis after adjustment reflect different magnitudes than those obtained in the univariate analysis, indicating that the effect changed with the adjustment, although the nature and direction of the associations were maintained.

Table 4

Sociodemographic characteristics, initiation, injection drug use, and sexual practices among HIV-seropositive female and male injection drug users (IDUs). AjUDE-Brasil II Project, 2000/2001.

Characteristics*	Females		Males		OR	95%CI**
	n	%	n	%		
Total	57	39	254	36	–	–
Age (> 31 years)	57	39	238	34	1.3	0.9-1.9
Education (up to 4 years)	27	50	78	33	2.0	1.1-3.8
Syringe-exchange program city						
Porto Alegre	25	44	137	54	1.0	
São José do Rio Preto	16	28	27	11	3.2	1.4-7.4
Itajaí	5	9	25	10	1.1	0.3-3.4
Florianópolis	4	7	15	6	1.5	0.3-5.3
Salvador	3	5	10	4	1.6	0.3-7.2
Gravataí	4	7	40	16	0.5	0.2-1.8
Marital status (Married)***	28	49	69	27	2.6	1.4-4.8
Skin color (non-white)	32	56	97	38	2.1	1.1-3.9
Without occupation in last 6 months	19	37	81	33	1.2	0.6-2.3
Obtaining drug at initiation						
Individual himself or other means	8	14	61	24	1.0	
Partner	11	19	4	2	21.0	4.6-105.4
Intimate friend	17	30	66	26	2.0	0.7-5.4
Acquaintance	11	19	45	17	1.9	0.6-5.6
Drug dealer	10	18	78	31	1.0	0.3-2.9
Obtaining equipment at initiation						
Pharmacy	30	53	165	65	1.0	
Partner	6	10	2	1	16.5	2.8-24.8
Relative	1	2	7	3	0.8	–
Intimate friend	8	14	31	12	1.4	0.5-3.6
Acquaintance	7	12	19	8	2.0	0.7-5.7
Others	5	9	30	11	1.0	0.3-3.1
Injecting drug at initiation						
Myself	9	16	87	34	1.0	
Partner	13	23	4	2	31.4	7.3-148.3
Relative	6	10	17	7	3.4	1.0-12.4
Intimate friend	17	30	85	34	1.9	0.8-5.0
Acquaintance	12	21	57	23	2.0	0.7-5.7
Regular partners opposite sex#	40	83	132	69	2.2	0.9-5.4
Regular partners opposite sex use drugs#	24	60	16	13	10.4	4.2-25.9
Sex under influence of drugs##						
Regular partner opposite sex	23	59	65	52	1.3	0.6-2.9
Casual partner opposite sex	12	71	56	62	1.5	0.4-5.4
Sex for drugs#						
Casual opposite sex	8	47	16	17	4.3	1.3-14.8
Casual same sex	4	68	10	62	1.2	0.1-13.5

* Using no as reference;

** Mantel-Haenszel Test/Fisher's Exact Test;

*** Included married and co-residing;

Data without information were excluded;

For the variable "sex under the influence of drugs" never was used as reference.

Table 5

Comparison of unadjusted odds ratio with that adjusted by regression analysis for female compared to male HIV seroprevalent injection drug users (IDUs). AJUDE-Brasil II Project, 2000/2001.

Characteristics	Females		HIV+		Univariate analysis* OR _{unadjusted} (95%CI)	Multivariate analysis** OR _{adjusted} (95%CI)
	n	%	n	%		
Total	57	39	254	36	–	–
Education (up to 4 years)	27	50	78	33	2.0 (1.1-3.8)	3.5 (1.2-10.0)
Injecting the drug at initiation						
Myself	9	16	87	34	1.0	1.0
Partner	13	23	4	2	31.4 (7.3-148.3)	23.7 (2.9-191.8)
Relative	6	10	17	7	3.4 (1.0-12.4)	2.2 (0.3-14.9)
Intimate friend	17	30	85	34	1.9 (0.8-5.0)	3.7 (1.0-13.6)
Acquaintance	12	21	57	23	2.0 (0.7-5.7)	3.4 (0.8-14.3)
Regular partners of the opposite sex who use drugs**	24	60	16	13	10.4 (4.2-25.9)	8.0 (2.9-22.6)

* Mantel-Haenszel Test;

** Binary logistical regression model adjusting for syringe-exchange program city and controlling for education, assistance with first injection and partner of the opposite sex who also uses drugs.

Discussion

This study of IDUs receiving assistance from SEP suggests that female users go through a different process than males, especially with regard to their sexual partners, who have a special role in introducing them to injection drugs for the first time, furnishing them with drugs and injection equipments (syringes and needles), and assisting in the very act of intravenous injection.

Among those infected with HIV, women reported more frequently than men partnerships with regular partners who also used drugs. Besides this, women were more likely to report sexual relations under the influence of drugs. On the other hand, a greater proportion of these women traded sex for drugs with casual partners when compared with infected men. All of these factors, as well as less education, non-white skin color, and being married, which are observed more frequently among women than men, indicate greater exposure to HIV infection.

These results are similar to the findings of international studies that women are more frequently initiated by men than are men by women, as in a study by Evans et al. ⁵, which compared female and male IDUs in San Francisco, United States. In contrast, however, a study by Doherty et al. ⁹ found 65% of women initiated by other women and 77% of men initiated by other men. However, the authors of this last study justified the divergence of their findings from those of previous studies based

on the possibility of differential selection in their access to IDU initiates, a sample bias, or the eventuality of real change in this social group. In verifying the proportion of initiates in the present study, it was found that about 80% of IDUs, independent of sex, had more than three years of injection drug use, or rather, a reduced number of initiates were accessed relative to the study mentioned above. In counterpoint, and to some extent agreeing with our findings, Doherty et al. ⁹ verified that the women who were initiated by men had a profile of greater risk and greater HIV seroprevalence, suggesting little preventive control in needle sharing by women.

In general, our study demonstrated similarity between men and women with regard to age at initiation to general and injection drug use and syringe sharing. On the other hand, significant differences in how drugs and syringes were obtained, both recently at the interview as well as at the time of first injection, could suggest a more dependent and passive role for female IDUs ¹⁹.

Another distinguishing issue relative to female and male IDUs and the HIV/AIDS epidemic, characterizing them as groups with a double risk of infection by sharing used syringes and needles, is sexual contact without condoms. From a biological point of view, women are more susceptible to HIV infection, as much from the vaginal mucous tissue exposed to semen, which is more HIV concentrated than the vaginal fluid, as from the presence of STDs ²⁰.

From the point of view of behavior, sociocultural context can influence whether protection is used in sexual relations^{21,22}. Some studies point out the difficulty in negotiating with a partner, confidence in fidelity, and romanticism of unconditional surrender, as factors that amplify risk conditions for women, increasing their vulnerability^{19,20,23,24}.

Given all of the characteristics mentioned above, the greater degree of sexual risk encountered among women than men can be attributed to the fact that, in this study, women reported with more frequency than men partners who are also IDUs, sex under the influence of drugs, and trade of sex for drugs, corroborating the hypothesis that female Brazilian IDUs are more exposed than men to HIV infection.

Therefore, the increase in these two behavioral risks, sex and drugs, among the women of this study suggests that they have less control and autonomy than men as concerns HIV infection. These findings agree with those of Friedman et al.²⁵ and Doherty et al.^{9,26}, which reaffirm the double risk of infection, principally for women that inject with their partners.

Various studies agree that women are highly influenced by their sexual partners, principally when they interact with members of their injection network^{27,28,29,30}. The IDUs accessed in the present study shared with friends, acquaintances, partners, or, in other words, their use network. As much for women as for men, the higher proportion of injection equipment sharing in one's lifetime presupposes the possibility that sharing continues to happen after one's introduction to injection drug use. Evans et al.⁵ found that in addition to starting to use injection drugs with their sexual partners, women also shared equipment with them.

Again, the results discussed above do not agree with those obtained by Doherty et al.⁹, who found 44% of women and 33% of men buying their own needles for the first use episode. Also, Crofts et al.³¹, studying the circumstances of injection, found that 50% of initiates acquired their own needles. In our study, 43% of women and 55% of men acquired their equipment from a pharmacy.

The presence of women with less education and with greater proportion of non-white skin color suggests a less favorable position for this group that increases their vulnerability to HIV infection. An analysis of the interrelationships of HIV vulnerability and social inequalities, prejudice, and marginalization, presented by Bastos & Szwarcwald³², shows the importance of inequality and of racial and gender prejudice. Worldwide, the exposure of women increases

with social vulnerability^{1,33}. In Brazil, the epidemic advances disproportionately among the black and mulatto population² and the category of women most affected is that of lower income and less education³⁴.

The finding that women suggest using condoms to their partners more frequently than do men may be considered an advancement. However, we should recognize that, based on specific studies, in the majority of cases women's power in negotiating with their sexual partners is presumed to be limited^{35,36,37}.

Before presenting our conclusions, below, some limitations of this study should be recognized. In the first place, the data used here were not originally collected for our research question, only allowing for partial understanding. We acknowledge the absence of more complete information about aspects related to initiation, including age, motives for experimentation and continuation of drug use, as well as perception of one's own situation, personal antecedents for initial use. All of which would contribute to delineating a more comprehensive profile of female and male IDUs.

The possibility of comparing the findings we present here with national and international studies is limited because there are few studies that address initiation among IDUs in a similar fashion. Some address young IDUs in order to more precisely characterize initiation, while others access more mature IDUs cohorts. Also, the dissimilarity of results may be attributed as much to distinct recruitment strategies as to when and where research was undertaken. The generalization of these findings is reduced considering that the sample could not be representative of the Brazilian IDUs population. Furthermore, there is a limitation in the time between exposure and event imposed by the cross-sectional delineation of the study.

Although the sample included a lower proportion of women than men, which at time generated ample confidence intervals, in our understanding, the greatest merit of the present study is having accessed an expressive number of female IDUs, a population that remains undescribed in Brazilian studies.

The results presented here have important implications for public health. Standing out is the fact that women are subject to greater risk of infection by HIV than are men due to greater prevalence of factors associated with HIV deriving from their initiation to the use of injection drugs, as has been affirmed by other authors^{8,26}. In addition, the prevalence among women of receiving assistance in the act of injection may function as a predictor of HIV se-

roconversion. Since it is men that appear to be most involved in initiating women, independent of other circumstances, it seems that the sexual IDUs partnership of any marital status should be included in studies on this topic, and thus demand new investigative methods that include qualitative and quantitative methodological approaches, among others^{38,39,40}.

Furthermore, preventive measures should consider the specificities of gender, looking principally to reach women who are initiated by men. Interventions focusing on the sexual partnership appear to be an urgent necessity for understanding fundamental questions of harm reduction relative to prevention, since the use of drugs is common within couples.

Another important question has to do with the specificities of each location. The Health Ministry estimates that SEP were capable of reducing the AIDS cases among IDUs by 49% in a span of almost 10 years (between 1993 and 2002)². However, the south of Brazil, principally, Porto Alegre, still shows increasing AIDS notifications among IDUs (around 25% of cases)². Various interacting factors contribute to differences in seropositivity among the diverse re-

gions of the country, such as migration for non-injection drugs and the influence of cocaine trafficking in border regions, mainly in the south. Continued research among SEP is fundamental for maintaining the results already obtained and reverting to the high prevalences of certain regions^{41,42,43}.

All aspects of our analysis point to the importance of identifying a concept in public health that addresses individual and collective aspects related to the degree and mode of exposure to infection and illness by HIV and, inseparably, to greater or lesser access to the resources that are necessary for protecting oneself. The concept of vulnerability³⁶ appears an appropriate solution, since it helps in discussions of inequality relative to HIV/AIDS by proposing a redefinition of notions of individual or group risk in terms of social vulnerability⁴⁴.

Therefore, we suggest that should be adopted for studying the IDUs population⁴⁵ methodological procedures that extend epidemiology beyond risk, recognizing analysis of vulnerability as a fundamental tool for comprehending and managing the HIV/AIDS epidemic.

Resumo

Este estudo teve como objetivo comparar homens e mulheres usuários de drogas injetáveis (UDIs) quanto ao perfil sócio-demográfico e aspectos da iniciação ao uso de droga injetável. Constou de estudo transversal, multicêntrico, realizado entre 2000/2001, em seis Programas de Redução de Danos brasileiros. Foram entrevistados 146 mulheres e 709 homens, com médias de idades de 29,5 e 28,3 anos, respectivamente. Ambos os grupos iniciaram o uso de drogas injetáveis com idades semelhantes, 18,6 e 19,3 anos, respectivamente para mulheres e homens, porém elas foram mais frequentemente iniciadas por parceiros sexuais na obtenção da droga, seringas e no ato de injeção. Comparadas aos homens, mulheres relataram significativamente mais parcerias sexuais regulares (83% versus 72%); menos eventuais (39% versus 58%), maior uso de drogas injetáveis com seus parceiros, além da "troca" de sexo por drogas. Entre HIV-soropositivos, mulheres apresentaram menor escolaridade, tiveram mais chance de contar com a participação de parceiro sexual em sua iniciação com drogas injetáveis, além de relatarem mais frequentemente parceiros sexuais que usavam esse tipo de droga. As mulheres UDIs apresentaram aspectos comportamentais sugestivos de maior vulnerabilidade à infecção pelo HIV do que os homens.

Uso Indevido de Drogas Parenterais; HIV; Síndrome de Imunodeficiência Adquirida; Redução do Dano

Contributors

All authors participated in developing the study's concept, design, and data analysis, as well as in writing the article.

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Acknowledgements

The AJUDE-Brasil II Project was done by the Federal University of Minas Gerais (Universidade Federal de Minas Gerais), with the technical and financial assistance of the Cooperation Project (Projeto de Cooperação) between the National STD/AIDS Project (Projeto Nacional de DTS/AIDS) and the Organizations United Against Crime and Drugs Office (Escritório das Organizações Unidas contra o Crime e Drogas), no. AD/BRA/99/E02.

Drs. W. T. Caiaffa, F. I. Bastos, and F. A. Proietti are recipients of Brazilian Council for Scientific and Technological Development (CNPq) scholarships.

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Submitted on 04/Jul/2005

Final version resubmitted on 09/Nov/2005

Approved on 10/Nov/2005