Profile of male Brazilian injecting drug users who have sex with men

Perfil de usuários de drogas injetáveis brasileiros do sexo masculino que têm relação sexual com homens

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Abstract

This study aims to characterize the profile of male injecting drug users who have sex with other men (MSM IDUs) recruited through a cross-sectional multi-city survey (AjUDE-Brasil II Project) in six Brazilian cities, in 2000-2001. MSM IDUs were compared to other male IDUs using bivariate and multivariate procedures (logistic regression and answer tree analysis with the CHAID algorithm). Among the 709 male IDUs, 187 (26.4%) reported ever having had sex with other men, while only 37 reported sex with other men in the previous six months. MSM IDUs were more likely to be unemployed (OR = 2.3), to have injected tranquilizers (OR = 3.6), and to be HIV-seropositive (OR = 2.1), compared to other male IDUs. Male same-sex relations in this subgroup appear to be associated with strategies to finance drug consuming habits, including sex for drugs with occasional female partners or obtaining injection paraphernalia from occasional sex partners. Further studies should focus on this especially vulnerable subgroup of IDUs, due to the bidirectional and complex interrelationships between their drug injecting habits and sexual risk behaviors.

Sexual Behavior; Acquired Immunodeficiency Syndrome; Needle Sharing; Male Homosexuality

Introduction

Sharing of drug injecting equipment plays an important role in the transmission of pathogens such as the hepatitis B (HBV) and C viruses (HCV) and the human immunodeficiency virus (HIV) [1]. However, among injecting drug users (IDUs), sexual transmission plays a crucial role in the spread of HIV, despite difficulties in distinguishing this role due to the relevance of parenteral transmission in this group and the fact that many studies involve a small number of observations. Recent studies with a broader scope have been able to document the role of sexual transmission in the IDUs population [2,3].

Along with these findings, several countries have witnessed a resurgence in the incidence of HIV infection and other sexually transmitted diseases (STDs) among men who have sex with men (MSM) [4,5,6,7], especially among young gay men [5,8].

These findings converge with the resurgence of the HIV/AIDS epidemic among MSM after nearly three decades of preventive measures. Highly active antiretroviral therapy (HAART) has led to changes in the HIV transmission dynamic, with an increase in the frequency of unsafe sexual behaviors, in addition to a complex interrelationship between risky sexual practices and drug consumption [9,10]. Changes in both individual perspectives on HIV/AIDS and sexual partnerships might explain the increased

HIV transmission in the post-HAART era, based on a new perception (erroneous, but present in some individuals and groups) that HIV/AIDS is no longer a fatal infection or syndrome, but a chronic condition, manageable in the short and medium term [9,10,11,12,13].

In addition, recent data suggest that new infections in MSM are associated with illicit drug use [14], either as a determinant factor or (in a more subtle perspective) as modulators of unsafe sexual practices [5,14,15,16,17].

An interface is observed between risk factors and practices that have been studied singly and independently. In order to finance their consumption, drug users submit to unsafe sexual practices, including sexual relations (frequently unprotected) in exchange for money, drugs, or other goods [18]. In addition, recent years have witnessed an increase in illicit drug use, in addition to changes in the drug use environment among the MSM population [19,20]. The consequences of this new scenario are still not entirely clear, but are probably adverse in relation to the adoption and maintenance of safer sexual and injecting practices [20], especially in countries with limited preventive and therapeutic interventions in populations with stigmatized and marginalized behaviors. Thus, drug-using MSM [6,17] and MSM IDUs with shorter time in injecting drug use and a pattern of experimenting with different substances and injecting routes constitute a particularly high-risk population for different STDs, including HIV [6,17,21].

Despite the relevance of the interrelationship between injecting drug use and same-sex sexual relations in different contexts, research on the issue is scare or even (in Brazil) nonexistent. It thus becomes necessary to characterize the profile of male Brazilian IDUs who have or have had sex with other men (MSM IDUs), in order to orient preventive efforts and support the monitoring of such interventions with consistent empirical data.

Methods

The data in this study were obtained from an IDUs population through the AjUDE-Brasil II Project (2000-2001). This was a cross-sectional, multi-center study that obtained information on various characteristics of this population to evaluate the effectiveness of harm reduction strategies and establish the baseline for IDU recruited by health agents ("outreach workers") in six syringe-exchange programs (SEP). Selection of the SEP in Porto Alegre and Gravataí (Rio Grande do Sul), São José do Rio Preto (São Paulo), Itajaí and Florianópolis (Santa Catarina), and Salvador (Bahia) was based on their structure and time in operation, the epidemiological profile of the HIV/AIDS epidemic in Brazil, and the pattern and forms of drug consumption in the various settings.

Study population

A total of 857 IDUs participated in the overall study, recruited by the outreach workers in each selected SEP. Eligibility criteria included age ≥ 18 years and a confirmed history of injecting drug use in the five years prior to the interview. No refusals were recorded.

For the purposes of this component study, among the IDUs participating in the AjUDE-Brasil II Project, only male IDUs were included, totaling 709 IDUs.

Sample size calculation

The current study analyzes a convenience sample, not representative of the population of injecting drug users in the sites were the IDUs were recruited. Although it was not one of the current study's specific objectives, the previously developed project (AjUDE-Brasil I Project) [22] showed significant differences in the infection rates (HIV prevalence) between MSM IDUs and other IDUs. Considering a 80% statistical power, a 5% alpha error, and 66.7% and 43.9% respective prevalence rates for MSM IDUs and other IDUs (data from the AjUDE-Brasil I Project [22]), a minimum sample of 121 individuals was calculated to be analyzed in each of the comparative subgroups.

Data collection

The AjUDE-Brasil II Project included face-a-face interviews conducted by previously trained health agents using a structured questionnaire and covering socio-demographic aspects, drug use, sharing of drug injecting equipment, and sexual behaviors [22]. In addition to the interview, the study included collection of blood samples on filter paper using ELISA (enzyme-linked immunosorbent assay) for HIV and other blood-borne and/or sexually transmitted infections, according to a methodology described elsewhere [22]. All stages of the project included procedures aimed at guaranteeing data quality and study reliability [22].

Data analysis

Initially, the IDUs who reported lifetime sexual relations with other men (MSM IDUs) were compared to the other IDUs for: (1) socio-demographic and contextual characteristics, including background HIV prevalence (overall HIV seroprevalence in each of the participating SEP), categorized by the World Health Organization [23] as: low (< 10%), medium (10-49%), and high (> 50%); (2) utilization of health services; (3) drug use, including sharing of needles and/or syringes and modes of acquiring drug injecting materials; (4) sexual behavior, separately analyzing the nature of partnerships (regular or occasional), sexual practices in exchange for drugs, and condom use, where "consistent use" was defined as reported condom use in all sexual relations in the six months prior to the interview; and (5) health status, including probable occurrence of STDs, based on reported genital lesions or discharge, in addition to positive serology for various pathogens (HIV, HBV, HCV, and HTLV I/II).

An analysis was then performed using as the outcome "sexual relations with persons of the same sex in the six months prior to the interview", that is, recent homosexual relations.

A descriptive analysis was performed including frequency distribution, central tendency, and dispersion. A bivariate analysis was used to select explanatory variables ($p \leq 0.25$) to construct the final multivariate model. Comparison of proportions used the chi-square test, measuring the strength of association with the odds ratios and their respective 95% confidence intervals.

The logistic regression model, constructed with an exclusively discriminatory objective included verifying the relevance of each participating variable using the Wald statistic. Final adjustment of the model used the Hosmer & Lemeshow test. The final model consisted of variables with statistical significance ($p \leq 0.05$) and biological plausibility [24].

A multivariate analysis was also performed using the CHAID decision tree (chi-squared automatic interaction detector), aimed at comparing the characteristics of recent MSM IDUs with other MSM IDUs (the latter being defined as those who reported some lifetime sexual relations with other men, but who reported not having had sexual relations with other men during the six months prior to the interview). This method consists of successively splitting the data set to make it increasingly homogeneous in relation to the outcome (AnswerTree 3.0, SPSS Inc., Chicago, USA). It is an exploratory procedure which distinguishes the effect of a set of variables and their correlations with a outcome, exploring possible interactions between the variables and producing a tree that partitions the data sparingly. In addition to AnswerTree 3.0, the study used Microsoft Excel, version 2000 (Microsoft Corp., USA) and SPSS, version 11.5 (SPSS Inc., Chicago, USA).

Ethical issues

All the IDUs participating in the AjUDE-Brasil II Project signed a free informed consent form in accordance with Ruling 196/96 by the Brazilian Ministry of Health. The research project was approved by the Institutional Review Board of the Universidade Federal de Minas Gerais (case review ETIC168/99).

Results

A total of 709 male IDUs were interviewed. The majority consisted of young adults, with a mean age of 28 ± 8.2 years, and 51.1% were non-white. There was a large proportion of functionally illiterate individuals (32.8%), defined as less than four years of schooling. As for drug use, the majority of the IDUs were experienced (defined for the purposes of this study as users with "more than three years of injecting use") and had already used SEP services at some time.

Some 3% were HBV infected, 24% were HTLV positive, 36% HIV positive, and more than half (58.4%) were HCV infected.

As for HIV risk behaviors, the majority reported not having shared needles and/or syringes in the previous six months, i.e., not giving (78.8%) or receiving (78.3%) previously used injecting equipment (Table 1).

Profile of same-sex partners

Of the 187 IDUs (26.4% of the total sample) classified as MSM IDUs (reported lifetime MSM relations), 20.2% stated having had sexual relations with other men during the six months prior to the interview.

Nearly all of the MSM IDUs who reported recent relations with other men had occasional female partners (91.9%). Such occasional sexual relations with the opposite sex were characterized as risky, since only one-third (36.4%) of the interviewees had used condoms in all these sexual relations, 56% reported having sex to obtain drugs, and 41.9% reported that they were invariably under the effect of drugs during such relations (Table 1).

Table 1

Profile of male injecting drug users (IDUs) participating in the AjUDE-Brasil II Project, 2000-2001.

Variables	Participants n	%
Age (in years) (n = 709)*		
> 22	495	69.8
≤ 22	214	30.2
Skin color (n = 709)*		
White	346	48.9
Non-white	362	51.1
Functional illiteracy (n = 709)*		
Yes	220	32.8
No	451	67.2
Time of injecting drug use (in years) (n = 709)*#		
> 3	542	77.1
≤ 3	161	22.9
Use of SEP (n = 709)*		
Yes	490	69.5
No	215	30.5
HBV (n = 709)*		
Seropositive	17	2.5
Seronegative	675	97.5
HTLV (n = 709)*		
Seropositive	160	24.4
Seronegative	495	75.6
HIV (n = 709)*		
Seropositive	254	36.0
Seronegative	452	64.0
HCV (n = 658)***		
Seropositive	405	58.4
Seronegative	237	34.2
Sharing of needles/syringes (n = 709)*		
Gave needles/syringes in previous six months		
Yes	138	21.2
No	514	78.8
Received needles/syringes in previous six months		
Yes	98	13.8
No	555	78.3
MSM sexual relations		
Lifetime (n = 709)*		
Yes	187	26.4
No	507	71.5
In previous six months (n = 187)*		
Yes	37	20.2
No	146	79.8
Occasional female sex partner in previous six months (n = 37)*		
Yes	34	91.9
No	3	8.1
Condom use (n = 34)*		
Yes, in all relations	12	36.4
No or sometimes	21	63.6
Sex for drugs (n = 34)*		
Yes	19	55.9
No	15	44.1
Sexual relations under the effect of drugs (n = 34)*		
Yes, in all relations	13	41.9
No or sometimes	18	58.1

Syringe-exchange program; MSM = men who reported having sex with men.
* Total expected responses, with possible loss of information, left out in calculating the percentages shown;
** Indeterminate serology (n = 51) was not shown in the Table.

Bivariate analysis

Comparing the MSM IDUs with other IDU for socio-demographic aspects (Table 2), the odds of recruiting a MSM IDUs were significantly higher in a SEP with high and medium background HIV prevalence (OR = 3.5 and OR = 2.1, respectively), as compared to sites with low background prevalence.

Some socio-demographic characteristics were significantly associated with MSM relations among the participating IDUs, including: age > 28 years (OR = 1.4), white skin color (OR = 1.7), and having a religion (OR = 1.5). Also associated with MSM relations were unemployment in the six months prior to the interview (OR = 2.2) and homelessness (OR = 2.0). Likewise, a higher proportion of MSM IDUs had already been arrested (OR = 2.5) or been convicted or had served time (OR = 1.9) or had been involved in fights due to drugs (OR = 2.1).

Analyzing aspects related to use of health services, such as lifetime addiction treatment, other health treatment in the previous year, and HIV testing, the MSM IDUs accessed these various services more frequently than other IDUs (OR = 1.7; OR = 1.5, and OR = 1.9, respectively). Other aspects related to HIV testing were also significantly associated with MSM relations, suggesting greater attention to health on their part, including: having considered or submitted to HIV testing (OR = 2.1), knowing testing sites (OR = 2.0), and actually returning to receive HIV test results (OR = 2.9) (Table 2).

Health services utilization was greater by MSM IDUs, which may also have been related to worse health status among these individuals. MSM IDUs did in fact show higher odds of having a sexually transmitted disease, considering that a higher proportion of these IDUs reported the presence of genital lesions or discharge in the previous six months (OR = 2.1). HIV, HTLV, and HCV infections were also significantly more prevalent in the MSM IDUs, whose odds ratios of being infected by these viruses (compared to other IDUs) were 2.5, 1.8, and 1.7, respectively (Table 2).

Further developing these analyses (Table 3), there were some twice as many MSM IDUs who had used injecting drugs for more than three years as compared to other IDUs (OR = 2.1). A higher proportion of MSM IDUs reported injecting drugs in the previous month (OR = 1.7) and reported injecting drugs more intensively at each "injecting session" (more frequent report of repeated injections per session, with a cutoff point of "four or more injections per session") (OR = 1.8). Reported injecting drug

Table 2

Bivariate analysis of the socio-demographic and health services utilization characteristics associated with MSM in IDUs participating in the AjUDE-Brasil II Project, 2000-2001.

Variables	MSM* (n = 187)	MSW** (n = 507)	OR (95%CI)	p value
Socio-demographic characteristics				
Local HIV prevalence				
Low	13.9	29.6	1.0	
Medium	45.5	45.6	2.1 (1.3-3.5)	0.002
High	40.6	24.9	3.5 (2.1-5.8)	< 0.01
Age (> 28 years)	48.1	40.4	1.4 (1.0-1.9)	0.069
White skin color	58.3	44.7	1.7 (1.2-2.4)	0.001
Religion	81.1	73.9	1.5 (1.0-2.3)	0.050
Marital status (widower)	3.2	1.6	2.1 (0.7-6.1)	0.173
Unemployed***	83.9	70.4	2.2 (1.4-3.4)	< 0.01
Homeless***	29.7	17.4	2.0 (1.4-2.9)	< 0.01
Legal/criminal aspects				
Arrest#	92.0	82.1	2.5 (1.4-4.6)	0.002
Convicted or served time#	46.3	31.8	1.9 (1.3-2.6)	0.001
Suffered aggression due to drugs#	58.9	40.1	2.1 (1.5-3.0)	< 0.01
Use of health services				
Drug-related treatment#	44.6	32.5	1.7 (1.2-2.4)	0.003
Health treatment##	75.0	63.7	1.5 (1.1-2.2)	0.014
HIV testing				
Had test#	57.5	41.6	1.9 (1.4-2.7)	< 0.01
Considered having test#	84.5	72.0	2.1 (1.4-3.3)	0.001
Knows testing site	75.4	60.9	2.0 (1.4-2.9)	< 0.01
Returned for results	92.2	80.1	2.9 (1.3-6.7)	0.006
Health status				
Has had lesions on penis***	18.9	10.0	2.1 (1.3-3.3)	0.002
HIV (seropositive)###	51.9	30.3	2.5 (1.8-3.5)	< 0.01
HTLV (seropositive)###	32.9	21.3	1.8 (1.2-2.7)	0.003
HCV (seropositive)###	71.8	60.7	1.7 (1.1-2.4)	0.010
HBV (seropositive)###	3.8	2.0	1.9 (0.7-5.2)	0.117
As for HIV, believes he is:				
Negative	36.6	56.0		
Doesn't know	16.7	23.6	1.1 (0.7-1.7)	0.746
Positive	46.8	20.4	3.5 (2.4-5.2)	< 0.01

* Male IDU who reported ever having had sex with men;
** Male IDU who reported having sexual relations only with women;
*** Data refer to six months prior to interview;
# Lifetime data;
Data refer to previous year;
Diagnosis according to field testing.

use while serving prison sentences was also significantly more frequent among MSM IDUs (OR = 2.2).

Stratifying the analysis by type of drug used in the six months prior to the interview and also considering the administration route, reported use of tranquilizers was significantly more frequent among MSM IDUs, both oral (OR = 1.5) and injected (OR = 2.6). MSM IDUs showed lower consumption of alcohol (OR = 0.6; 95%CI: 0.4-1.1), marijuana (OR = 0.7; 95%CI: 0.4-1.1), and sniffed (OR = 0.7; 95%CI: 0.5-1.0) or injected cocaine (OR = 0.6; 95%CI: 0.4-0.8) as compared to other IDUs.

Table 3

Bivariate analysis of aspects related to drug use, sexual relations, and health status associated with MSM among IDUs participating in the AjUDE-Brasil II Project, 2000-2001.

Variables	MSM* (n = 187)	MSW** (n = 507)	OR (95%CI)	p value
Drug use				
Injecting drug use				
Time of use (> 3 years)	85.9	74.3	2.1 (1.3-3.4)	0.001
Use in previous month	82.1	73.2	1.7 (1.0-2.7)	0.033
Frequency of injection (≥ 4 /session)***	23.2	14.8	1.8 (1.2-2.7)	0.009
Use during incarceration	28.8	15.3	2.2 (1.2-4.4)	0.016
Drug use in previous six months				
Tranquilizers (oral)	26.2	19.0	1.5 (1.0-2.2)	0.040
Tranquilizers (injected)	6.5	2.6	2.6 (1.2-5.9)	0.018
Alcoholic beverages	87.7	92.4	0.6 (0.4-1.1)	0.052
Marijuana	84.0	88.3	0.7 (0.4-1.1)	0.128
Cocaine (sniffed)	25.0	26.4	0.7(0.5-1.0)	0.029
Cocaine (injected)	69.2	79.9	0.6 (0.4-0.8)	0.003
Sharing needles/syringes				
Lifetime	71.9	53.2	2.3 (1.6-3.2)	< 0.01
Gave used needles and syringes#	27.2	18.1	1.7 (1.1-2.6)	0.012
Received used needles and syringes#	21.9	11.3	2.2 (1.4-3.6)	0.001
Use of material from another person##	33.8	26.9	1.4 (0.9-2.1)	0.127
Mode of obtaining needles/syringes#				
From injecting partner	24.3	18.4	1.4 (0.9-2.2)	0.092
From occasional sex partner	5.7	2.1	2.8 (1.2-7.1)	0.018
From outreach worker	49.2	56.5	0.8 (0.5-1.1)	0.090
At pharmacies	45.6	51.3	0.8 (0.6-1.1)	0.185
Sexual relations				
Regular female sex partners				
Relations in previous six months	47.5	64.1	0.5 (0.4-0.7)	< 0.01
Frequency (< 3 times/week)	29.1	20.4	1.6 (0.9-2.7)	0.89
Condom use	34.9	25.2	1.6 (1.0-2.6)	0.075
Occasional female sex partners				
Sex for drugs#	11.0	3.9	3.1 (1.6-5.9)	< 0.01
Frequency (< 3 times/week)	66.3	56.3	1.5 (0.9-2.6)	0.116
Condom use	41.3	51.6	0.7 (0.4-1.1)	0.107

* Male IDU who reported ever having had sex with men;
** Male IDU who reported having sexual relations only with women;
*** Data refer to previous month;
# Data refer to six months prior to interview;
Data refer to last drug injecting session.

A higher proportion of MSM IDUs had ever shared injecting drug equipment (OR = 2.3) and had given or lent needles and/or syringes in the previous six months (OR = 1.7) or received previously used equipment (OR = 2.2). A higher proportion of MSM IDUs obtained this material from an injecting partner (OR = 1.4) or occasional sex partner (OR = 2.8), while obtaining sterile syringes and needles through outreach workers or pharmacies was more frequent among IDUs who did not report same-sex relations (OR = 0.8).

As for sexual practices with female partners in the previous six months, specific associations were observed based on the nature of the partnership (regular versus occasional). Fewer MSM IDUs (as compared to other IDUs) reported sexual practices with regular female partners (OR = 0.5). Consistent condom use with these female partners was 1.5 more frequent as reported by MSM IDUs (compared to IDUs). In occasional female partners, a lower proportion of consistent condom use was observed (OR =

0.7; 95%CI: 0.4-1.1), and a higher proportion of MSM IDUs reported practicing sex to obtain drugs (OR = 3.1), as compared to other IDUs (Table 3).

Multivariate analysis

From the set of independent variables previously selected for inclusion in the initial logistic model, there remained six variables associated with "IDUs with a lifetime report of sexual relations with other men" (Table 4). These MSM IDUs, as compared to other male IDUs, showed higher odds of: being HIV infected (OR = 2.1; 95%CI: 1.5-3.1), injecting four or more times per injecting session (OR = 1.9; 95%CI: 1.2-3.1), being unemployed in the last six months, (OR = 2.3; 95%CI: 1.4-3.8), having occasional sexual relations with women to obtain drugs (OR = 2.9; 95%CI: 1.4-6.0), and using injected tranquilizers (OR = 3.6; 95%CI: 1.5-8.9).

Cocaine injecting remained significantly associated with the outcome in an inverse relationship, i.e., a lower proportion of MSM IDUs reported using this drug in the six months prior to the interview (OR = 0.4; 95%CI: 0.3-0.7).

Figure 1 shows the results of the multivariate analysis using the decision tree. The root node includes the 183 IDUs who reported ever having had sex with other men (with four incomplete observations). Of these, 20.2% reported recent same-sex relations (during the six months prior to the interview). Obtaining needles and/or syringes from occasional sex partners in the last six months discriminated this group (p = 0.005), showing a clear separation in the resulting tree. The majority of the MSM IDUs who obtained needles and/or syringes this way reported recent same-sex relations (60%), while among those who did not obtain injecting material as described above, approximately 18% reported recent MSM relations.

Among those who obtained their injecting equipment through occasional sex partners and who knew someone with HIV in their social network, one-third (33.3%) reported recent same-sex relations. Meanwhile, all the IDU who obtained equipment as described above and who denied knowing anyone with HIV in their social network reported recent same-sex relations.

The variables "having a religion" and "homelessness in the last six months" were also relevant in shaping homogeneous groups in the decision tree. Among MSM IDUs who did not obtain needles and/or syringes from occasional sex partners, were agnostics, and had been homeless, the majority (58.3%) reported sexual relations with other men in the previous six months. Meanwhile, the majority ((76.2%) of MSM IDUs with similar characteristics but who had a fixed residence in the previous six months did not report recent same-sex relations.

Table 4

Results of multivariate logistic regression.

Variables	Gross OR (95%CI)	Adjusted OR (95%CI)
HIV*		
Seronegative	1.0	1.0
Seropositive	2.5 (1.8-3.5)	2.1 (1.5-3.1)
Frequency of injection per session**		
< 4 times	1.0	1.0
≥ 4 times	1.8 (1.2-2.7)	1.9 (1.2-3.1)
Unemployment***		
No	1.0	1.0
Yes	2.2 (1.4-3.4)	2.3 (1.4-3.8)
Sex for drugs*.#		
No	1.0	1.0
Yes	3.1 (1.6-5.9)	2.9 (1.4-6.0)
Use of injected tranquilizers***		
No	1.0	1.0
Yes	2.6 (1.2-5.9)	3.6 (1.5-8.9)
Use of injected cocaine***		
No	1.0	1.0
Yes	0.6 (0.4-0.8)	0.4 (0.3-0.7)

Hosmer & Lemeshow test (adjustment of model): p = 0.912.
* Diagnosis based on field testing;
** Refers to estimate for the previous month;
*** Data refer to six months prior to interview;
# Sexual relations with occasional female partners.

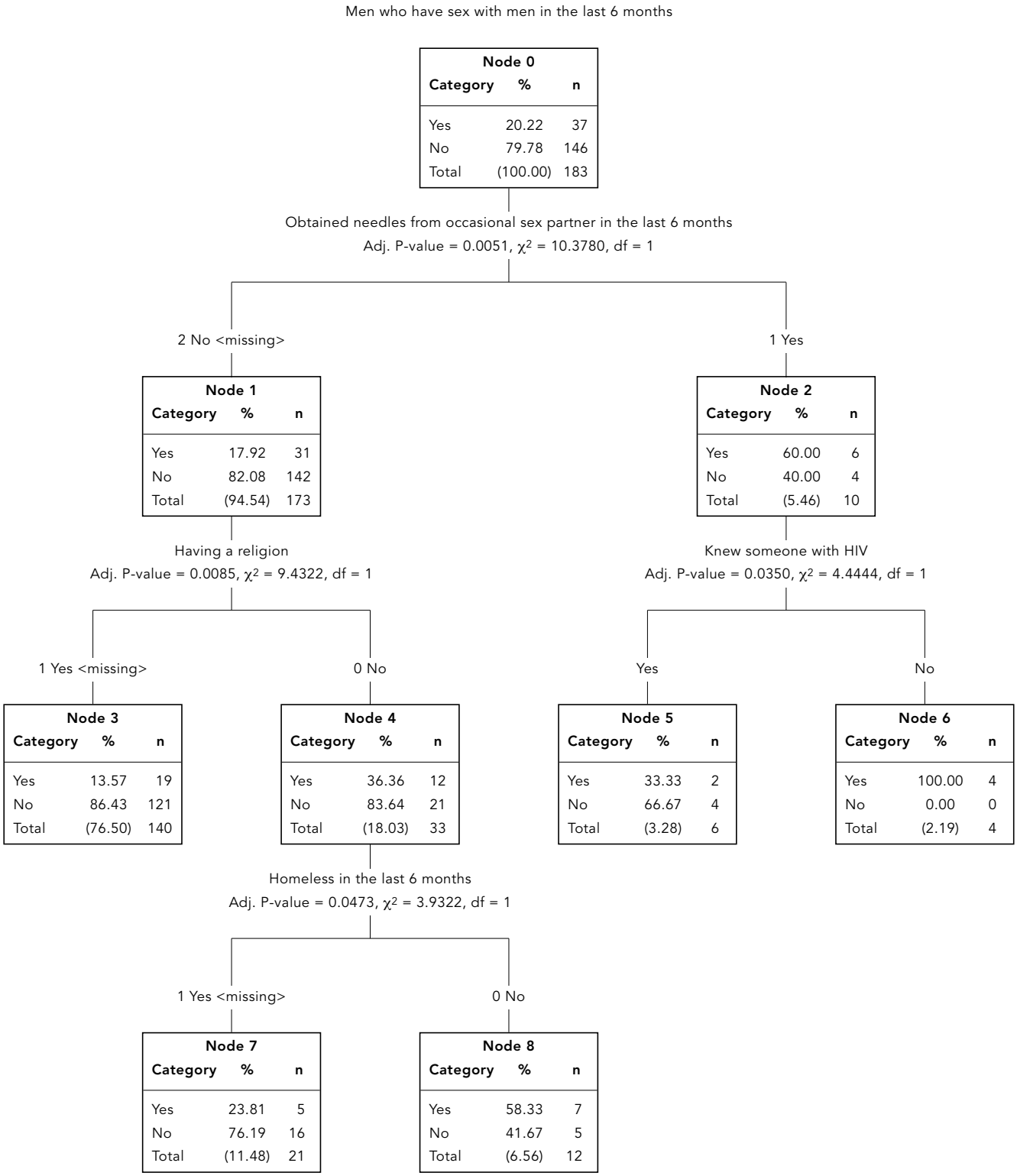
Discussion

This study's findings point to important differences in MSM IDUs as compared to other male IDUs in relation to drug use, sexual behaviors, and blood-borne and sexually transmitted infections.

Those who reported ever having sexual relations with other men were more frequently unemployed, related sexually with occasional female partners in order to obtain drugs, used injected tranquilizers, and injected more times per session, besides showing higher HIV prevalence. In addition, MSM IDUs who reported sexual relations with other men in the previous six months displayed different patterns as to the

Figure 1

Multivariate analysis using decision tree (exhaustive CHAID).



mode of obtaining drug injecting material, as compared to other MSM IDUs.

International studies show increasing HIV serological incidence among young groups of MSM who also use injecting drugs, with upward rates, from 0.6 per 100 person-years in 1995-1999 to 3.9 per 100 person-years in 2000 [25], according to studies in Vancouver, Canada. They also emphasize the association between male IDU same-sex relations and HIV incidence, according to studies in San Francisco, USA [12,26]. In other words, the studies indicate a differentiated trend in relation to the dynamics of HIV infection in this specific population group.

Bluthenthal et al. [12] point to an increase in HIV infection rates among MSM IDUs, while in other IDUs the prevalence rates have stabilized. Maslow et al. [27] also show higher HIV prevalence in MSM as compared to other IDUs, both for the years 1990-1994 (60.5% versus 48.3%, respectively) and 1995-1999 (43.8% versus 33.4%, respectively).

In the same sense, but based on an analysis of data from a sample of MSM, the HIV seroprevalence was higher in men who injected drugs as compared to non-IDUs (40% and 32%, respectively) [5]. This profile is similar to that of the present study, which however was based on a sample of IDUs, but which also shows a substantially higher prevalence among MSM IDUs as compared to other IDUs.

Various factors appear to be associated with resurgence of the HIV epidemic in the MSM IDUs population, partially because IDUs sexual risk behaviors appear not to have decreased to the same extent for their risky injecting practices [27,28]. In addition, drug use (both injecting and non-injecting) is frequently associated with unsafe sexual practices [8,29,30] and relations aimed at obtaining drugs and/or money in the attempt to finance a costly habit and addiction [8].

Various studies have shown high drug use prevalence among MSM [6,15,16,31]. The interrelationship between unprotected anal sex and drug use has fueled the recent increase in HIV and STD in incidence in the MSM population in the United States [32], particularly among younger members [6].

In our study, IDUs who reported lifetime male same-sex practices displayed a profile suggesting intense drug use, as evidenced by the increased number of injections per injecting session. The maintenance of this consumption profile, associated with unfavorable socioeconomic conditions (including higher unemployment among MSM IDUs), favors the acquisition of drugs and injecting equipment by inappropriate means (risky and/or illicit), thereby exposing these individuals to greater risk of infection by various pathogens, including HIV. It also contributes to the interrelationship between different sexual risk factors and practices as observed in the current study, in which MSM IDUs reported a relatively high frequency of casual sex for drugs.

Such findings corroborate the statement by some authors that interventions targeting the IDUs population should focus on issues related to their sexual activity and not only risk behaviors related directly to injecting drugs [27,28]. There is an evident need to learn more about the motives leading IDUs to be exposed to sexual risk. Sexual relations with occasional partners have been identified as a means to sustain drug addiction, both in male and female IDUs [8,33]. However, the specificity shown here in occasional sexual relations with women in order to obtain drugs finds no backing in the literature, which generally fails to provide details on the nature of various types of sex partners [33]. Therefore, this point requires further investigation through studies with this specific purpose.

The higher frequency of injected tranquilizers in the previous six months by MSM IDUs is also a peculiar finding, since most studies on MSM focus exclusively on the use of stimulants [6,14,15,16,31]. Nevertheless, Roxburgh et al. [33] found that IDU who have sex for drugs or money display a specific drug-consumption profile, characterized by the use of injected benzodiazepam, considered their second drug of choice. Together with this predilection for injected tranquilizers, a smaller proportion of MSM IDUs reported the use of injected cocaine. In other words, regular tranquilizer consumption appears to counteract the regular use of stimulants.

One cannot overlook the nature of our study population, with a high prevalence of sexually transmitted and blood-borne infections. If we consider the study's cross-sectional design, drug use behavior changes may have resulted from long injecting careers involving different substances and thus limiting the interpretation of the findings. Utilization of data collected for other purposes (in keeping with the specific objectives of the original study) hinders specific analyses, which in the final analysis would better characterize the target population. An example would be to investigate the sexual options or preferences (hetero/bi or homosexual) and not exclusively the sexual practices, in addition to collecting more detailed information on sexual partnerships.

There is the possibility of bias (a survival bias, for example) when using non-random

samples, leading to selective recruitment of IDU in better health conditions, thus underestimating the real HIV prevalence. An information bias may also have occurred due to interviewees' conditions in the SEP context, favoring "desirable" responses and underestimating (for example) the sharing of injecting equipment.

Despite these limitations, there is no doubt about the importance of the MSM IDUs population in the HIV/AIDS epidemic in Brazil and in different contexts [12,17,27,34,35]. IDUs appear to be involved in unsafe sexual relations (multiple sex partners, without condoms, often under the effect of drugs) as a means of financing their habit or addiction.

The study highlights these additional risks, since IDU who reported sex with other men in the previous six months were more likely to have obtained used needles and/or syringes from occasional female partners as compared to IDUs reporting lifetime sexual relations with other men.

The risk factors for HIV infection, like injecting drug use and same-sex relations, interact in a bidirectional, complex, and probably synergistic way and should not be analyzed in a unidirectional or linear fashion. Unfortunately, this interface has merited relatively limited attention, especially in communities in which the two behaviors are at least stigmatized and marginalized if not criminalized [35].

The current study's findings emphasize the need for new research aimed at elucidating the drug consumption profile and trends among specific subgroups of IDUs, considering other characteristics like age, injecting experience, and access to and utilization of harm reduction programs (or lack thereof). Considering the complex relationship between drug use and sexual practices, such studies would allow a more targeted focus by health actions to deal with these new challenges.

Resumo

Este estudo avalia o perfil de homens usuários de drogas injetáveis que se relacionaram sexualmente com homens (UDI/HSH), com base em informações do Projeto AjUDE-Brasil II, estudo seccional realizado com UDIs recrutados em 2000/2001, em seis cidades brasileiras. As características dos UDI/HSH foram comparadas às dos demais UDIs do sexo masculino por meio de análises bi e multivariadas (regressão logística e árvore de decisão utilizando algoritmo CHAID). Dos 709 homens UDIs, 187 (26,4%) relataram relação homossexual na vida, e 37 nos seis meses anteriores à entrevista. Entre os UDIs/HSH, o desemprego nos seis meses anteriores (OR = 2,3), o uso de tranqüilizantes injetáveis (OR = 3,6) e a soropositividade para o HIV (OR = 2,1) foram significativamente mais prevalentes, comparados aos demais UDIs. A relação HSH se mostrou associada ao financiamento da drogadicção: UDIs/HSH relataram mais freqüentemente relações sexuais com mulheres em troca de drogas e obtiveram mais freqüentemente de seus parceiros sexuais equipamentos de injeção. O uso de drogas injetáveis está associado a práticas sexuais de risco de forma bidirecional e complexa, requerendo estudos adicionais do subgrupo particularmente vulnerável de UDI/HSH.

Comportamento Sexual; Síndrome de Imunodeficiência Adquirida; Uso Comum de Agulhas e Seringas; Homossexualidade Masculina

Contributors

A. D. Ferreira participated in all stages of the study, including the design, data analysis and interpretation, literature review, and drafting of the manuscript. W. T. Caiaffa, principal investigator of the AjUDE-Brasil Project, participated in all areas of the project and was responsible for the original idea, supervision of the analyzed data, and revision of the manuscript. F. I. Bastos participated in all phases of the study and was responsible for reviewing the manuscript, playing a key role in updating the bibliographic references. S. A. Mingoti assisted in the statistical analyses and calculations and is responsible for the statistical component of the AjUDE-Brasil II Project. The AjUDE-Brasil II Project was conducted in 2000-2001 by an extensive team, listed below.

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