Factors associated with exchanging sex for money in men who have sex with men in Brazil

Denyr Jeferson Dutra Alecrim (https://orcid.org/0000-0003-0913-418X) [1]
Maria das Graças Braga Ceccato (https://orcid.org/0000-0002-4340-0659) [1]
Inês Dourado (https://orcid.org/0000-0003-1675-2146) [2]
Ligia Kerr (https://orcid.org/0000-0003-4941-408X) [3]
Ana Maria de Brito (https://orcid.org/0000-0001-6592-0762) [4]
Mark Drew Crosland Guimarães (https://orcid.org/0000-0001-7932-3854) [5]

[1] Faculdade de Farmácia, Universidade Federal de Minas Gerais (UFMG). Av. Antonio Carlos 6627, Pampulha. 31270-010 Belo Horizonte MG Brasil. denyrjeferson@gmail.com
[2] Instituto de Saúde Coletiva, Universidade Federal da Bahia. Salvador, BA, Brasil.
[3] Universidade Federal do Ceará. Departamento de Saúde Comunitária. Fortaleza, CE, Brasil.
[4] Instituto Aggeu Magalhães, Fiocruz. Recife PE Brasil.
[5] Faculdade de Medicina, UFMG. Belo Horizonte MG Brasil.

Abstract *This study aimed to analyze the association between sociodemographic, programmatic and contextual factors and the receipt of money in exchange for sex among men who have sex with men (MSM). This is a multicenter, cross-sectional study conducted in ten Brazilian cities between 2008 and 2009. Adult MSM recruited through the Respondent Driven Sampling (RDS) were interviewed. Weighted Odds Ratio (ORw) was obtained through logistic regression, retaining the variables associated with the event (p < 0.05) in the final model. Of the total sample, 33.3% reported receiving money in exchange for sex in the last 12 months before the interview. The variables that were independently associated with the event were age less than or equal to 25 years, lower education, lower social classes, previous history of syphilis, using sites or services to find sexual partners in the previous month, very high risk behavior, using illicit drugs in the previous six months, self-identifying as heterosexual or bisexual, having suffered physical violence due to sexual orientation and having suicidal thoughts always or most of the time. It was observed that MSM who received money in exchange for sex had greater socioeconomic, programmatic and contextual vulnerability, potentially increasing the risk of HIV infection than the other MSM in the sample.*

Key words *Men who have sex with men, Commercial sex, HIV*

Introduction

HIV infection has a high prevalence among men who have sex with men (MSM) in Brazil, representing 14.2%[1] compared to 0.6% in the general Brazilian adult population[2]. When compared to the infection rate among heterosexual men, the ratio is 13 times higher among MSM residing in Brazil[1,3,4]. Several studies have consistently drawn the attention to the high prevalence of HIV infection among sexually exploitable MSM, with varying estimates of 14%-31% in the U.S.[5,6], 4.1%-24.4% in South America[7-11] and 3.1%-13.0% in Brazil[12,13].

Sex work is defined as the sale of consensual sexual services by adults in exchange for money, goods or objects[14], and this may occur regularly or occasionally and, according to the country's legislation, formally or informally[15,16]. Due to the association of sex work with a professional practice with low social acceptability and carrying with it characteristics and social signs that are often stigmatized, MSM describe the sex for money exchange as an occasional activity to temporarily support or pay for an expensive goods, and do not identify themselves as sex workers[11,16,17]. Besides, there is a growing tendency for sex work to be no longer based on street-related experiences and shifting to the field of the Internet, which makes it more difficult to identify these people as part of a homogeneous social group[18].

The most common factors associated with the initiation of men into sex work are economic factors, such as absolute poverty, family abandonment, and those associated with difficult access to the formal labor market, such as low schooling and professional qualification[12,19-21]. MSM who receive money in exchange for sex may be more vulnerable to sexually transmitted diseases (STDs) because of factors not only related to the high number of sexual partners but also because of their involvement in practices and situations associated with low socioeconomic status and risk sexual intercourse, such as drug use and inconsistent use of condoms[22]. A recent systematic review indicates an association between the exchange of sex for money and a higher risk of HIV infection among MSM from different countries[16].

The National Plan to Fight Against AIDS and STD Epidemic among Gays, MSM, and Transvestites[23] makes no mention of MSM who received money in exchange for sex, evidencing the silencing of health actions aimed at this segment, which only appear implicitly in the subcategory "other men who have sex with men". This invisibility reveals an explicit limitation of the public power in adapting, appropriately, with contextualized prevention actions to the complexity of the sexual networks between these men[16]. HIV/AIDS vulnerability factors among MSM who received money in exchange for sex should not be considered as isolated problems, but indeed convincing examples of the need for comprehensive HIV responses that address the needs of this diverse and complex group[24,25]. Following a new epidemiological surveillance strategy, information on populations most vulnerable to HIV/AIDS should be periodically investigated to build an information framework on the dynamics of the epidemic over time[26].

Although evidence indicates that the exchange of sex for money among MSM is potentially related to sociodemographic, programmatic and contextual factors, the studies of national coverage that approach the subject are limited. Moreover, a large part of the studies with this population does not clearly identify those who receive or pay for sex, and the former are potentially at greater risk[16]. The conceptions, values and practices that organize the construction of masculinity, the adoption of representations and understandings about the sexual practices they adopt, which hinder the perception of vulnerability to STDs and HIV/AIDS, gender vulnerability, low level of knowledge about STDs and behavioral risks or individual-related risk, the difficulty of negotiating preventive practices with clients, among others, are factors that may be related to the lower admission or acceptance (appropriation) of the risk experienced, which leads to the difficulty in awareness, behavioral change and risk minimization[20]. Besides the vulnerability factors directly linked to STDs and HIV/AIDS, other factors are quite frequent, such as exposure to potential violence, stigmatization of sex work and homosexuality, which affect MSM who receive money in exchange for sex[20].

This study is shown in this context and which aims to analyze the association between sociodemographic, programmatic and contextual factors and the exchange of sex for money between men who have sex with men in ten Brazilian cities in 2009 and 2010, with emphasis on receiving money. The information obtained with this national survey could contribute to increasing actions and measures for the prevention of HIV infection and health promotion in Brazil, until then poorly emphatic for this population.

Methods

This a cross-sectional study, part of a nationwide study carried out between 2008 and 2009, with MSM residing in ten Brazilian cities, aimed at estimating the prevalence of HIV and syphilis infection and assessing knowledge on HIV/AIDS, attitudes and sexual practices of this population. Methodological details of the study are available in Kerr et al.[1]. The Respondent-Driven Sampling (RDS) was used to recruit the participating MSM, a chain sampling method used with difficult-to-reach populations[27]. We calculated the sample by city to provide independent estimates, which returned 250 to 350 MSM in each city of the study[1]. Thus, 3,746 MSM were recruited in the cities of Manaus, Recife, Salvador, Belo Horizonte, Rio de Janeiro, Santos, Curitiba, Itajaí, Brasilia and Campo Grande.

A formative research was conducted using qualitative methods to adjust logistics and research protocols[28]. After selecting the MSM of the initial sample of the target population, called "seeds", the MSM received three numbered coupons and guidelines on the survey to invite three MSM from their social network. A management system controlled the coupons. Participants selected as "seeds" who attended the research sites with the valid coupon (identification number and expiry date) and met the inclusion criteria were the first sampling wave. This process was repeated with their guests until the sample reached the desired size in each city.

MSM aged 18 years or over and residents of selected municipalities were invited to participate in the study. Those meeting the following inclusion criteria were eligible: 1. Having had at least one sexual intercourse with a man in the last 12 months; 2. Accepting the conditions to participate in the study, which include responding to a structured questionnaire, signing the Informed Consent Form, and being willing to invite their peers to participate in the study; 3. Submitting a valid coupon. Participants identified as transvestites or transgender were excluded. The research was conducted following Resolution Nº 466/12 National Council of Health – Ministry of Health. The project was approved by the National Commission for Research Ethics (CONEP nº 14.494 – Opinion Nº 116/2008), by the Research Ethics Committee of the Federal University of Ceará (COMEPE/UFC Nº 202/07) and by the health services of the participating cities[1,28].

The event of interest was having received money in exchange for sex in the last 12 months before the interview, considering positive answers to the question asked during the interview: "In the last 12 months, did you receive money in exchange for sex?"

The potential association variables were organized into the following three blocks: 1. Sociodemographic (age, schooling, social class, skin color/ethnicity, marital status, and employment status at the time of interview); 2. Programmatic (knowledge about HIV transmission, prior HIV testing, positive serology for HIV, prior syphilis testing, history of syphilis, positive serology for syphilis and, in the last 12 months before the interview, having STD history, receiving STD counseling, receiving free condoms and lubricating gel; 3. Contextual, subdivided into: 3.a. Behavioral (gender of first sexual partner, age at first sexual intercourse, number of partners last six months, condom use in all sexual intercourse in the last 12 months, using sites/services to find partners last month, sexual intercourse with participants of potential guests' network, sexual intercourse under the effect of any drug last six months, self-perceived risk of becoming infected with HIV, risk behavior score for the last 12 months, frequency of alcohol use, use of illicit drugs in the last six months; 3.b related to sexual orientation - sexual self-identity, discrimination based on sexual orientation, having suffered verbal, physical violence and sexual violence; and 3.c related to mental health – feeling tense/worried, sleeping problems, feeling fear and panic, feeling sad/depressed, having suicidal thoughts. Knowledge about HIV transmission was measured through 10 questions about HIV transmission and prevention and was considered sufficient knowledge when the participant answered eight or more questions[29]. The HIV risk behavior score was calculated from information on the number of male partners and use of condoms in anal intercourse in the past 12 months with fixed, casual, and commercial partners. The final score was calculated by adding the results obtained, ranging from 0-48 points, with high values indicating a higher degree of risky sexual behavior. This score was categorized as low and medium risk (0-8 points) and high risk (9 points or +)[29].

The RDS data were weighted according to the size of the social network and the proportion of MSM in each city related to the total sample, based on the method used for RDS by Szwarcwald et al.[30]. The magnitude of the association between the explanatory variables and the event was estimated by the weighted Odds Ratio (OR_w) with a 95% confidence interval (95% CI).

Logistic regression was used for the association analysis.

The multivariate analysis was initially performed separately for each block, for the following characteristics: 1. sociodemographic; 2. programmatic; 3.a. behavioral; 3.b. related to sexual orientation; 3.c. related to mental health. For each block, the modeling started with variables statistically associated with the event in the univariate analysis, considering a p-value < 0.20. The explanatory variables were deleted sequentially within each block, and only those statistically associated with the event, considering a p-value < 0.10, remained in the intermediate models. The final modeling started with the statistically significant variables (p < 0.10) in each intermediate model, followed by sequential deletion. Only those associated with the event with p < 0.05 remained in the final model. The analyses were performed using SAS software® (SAS Inst., Cary, USA).

Results

In total, 3,859 MSM were recruited from the ten Brazilian cities. Of these, 3,749 had information available on commercial sex and were included in this analysis. Of this group, 1,146 (33.3%) reported having received money in exchange for sex in the 12 months before the interviews. More than half of the sample consisted of MSM over the age of 25 (58.4%), with more than eight years of study (58.6%), belonging to the lower economic classes (C-D-E), and most of them were non-white (83.2%), single or living alone (84.4%). Approximately 30% were not working at the time of the interview (Table 1).

Regarding the program variables, knowledge about HIV prevention and transmission was insufficient, for 42.3% of respondents. About half of the individuals (48.4%) had already been tested for HIV in their lifetime, and 12.6% were positive in the HIV serological test performed in the research. On the other hand, only a quarter (25.7%) had already had a diagnostic test for syphilis, and 7.7% had a previous history of syphilis, both in their lifetime. In the serological test for syphilis carried out in the research, 14.6% were positive. A large proportion (72.4%) received condoms for free in the previous 12 months, and only 45.5% of them received lubricating gel during the same period (Table 1).

Among the contextual variables, concerning sexual behavior, the first sexual intercourse was with a female partner in 52.9% of the respondents, and almost half (46.9%) started sexual activity aged 14 years or less. In the 12 months before the interview, about a quarter of the participants (24.5%) reported having had more than five sexual partners. Regarding drug use, 42.8% reported using some illicit drug during the six months before the interview. About 20% of MSM interviewed were classified as having high HIV risk behavior.

Regarding sexual orientation, approximately 39% identified themselves as bisexual or heterosexual, and 43.3% and 13.4% suffered verbal and physical violence due to sexual orientation, respectively, with sexual violence reported by 15.0%.

Concerning mental health, they reported that during the six months before the interview they always or most often felt tense or worried (74.1%), sad or depressed (54.2%), had sleeping problems (42.5%) and fear or panic (22.2%). Also, 11.0% of participants reported having suicidal thoughts always or most of the time.

The bivariate analysis indicated that most of the variables had a statistically significant association with the event (Table 2).

In the final logistic regression model, the following were independently associated with receiving money in exchange for sex 12 months prior to the interview (Table 3): being young (age less than or equal to 25 years) ($OR_w = 2.04$); having lower educational level ($OR_w = 3.58$); being of lower social classes (C-D-E) ($OR_w = 2.35$); having previous history of syphilis ($OR_w = 1.60$); having had first sexual intercourse with a woman ($OR_w = 2.32$) and aged less than or equal to 14 ($OR_w = 1.78$); having had sexual intercourse with more than five partners in the six months prior to the interview ($OR_w = 3.27$); using sites or services to find sexual partners in the month prior to the interview ($OR_w = 1.27$); having sex with the possible invitees to the study ($OR_w = 1.25$); having very high risk behavior ($OR_w = 2.76$); using illicit drugs in the six months prior to the interview ($OR_w = 1.89$); self-identifying as heterosexual or bisexual ($OR_w = 2.49$); having suffered physical violence ($OR_w = 1.38$) and not having suffered verbal violence ($OR_w = 0.66$) due to sexual orientation and having suicidal thoughts always or most of the time ($OR_w = 2.71$).

Discussion

The results indicate a high proportion (33.3%) of receiving money in exchange for sex in the year

Table 1. Descriptive characteristics of the sample of men who have sex with men, Brazil, 2009. (N = 37491).

Characteristics	n² (%)	% w³
a. Sociodemographic		
Age (≤ 25 years):	1971 (52.8)	41.6
Schooling (≤ 8 years):	1127 (30.2)	41.4
Social class (C-D-E):	2563 (71.2)	75.2
Skin color / ethnicity (Non-white):	3275 (87.4)	83.2
Marital status (Single/alone):	3128 (83.5)	84.4
Currently employed (No):	1208 (32.2)	29.5
b. Programmatic		
Positive serology for HIV (Yes):	323 (9.8)	12.6
Positive serology for syphilis (Yes):	340 (10.3)	14.6
Knowledge of HIV transmission (Insufficient):	1617 (43.2)	42.3
Prior HIV test (Never):	1777 (47.4)	48.4
Prior syphilis test (Never):	2579 (71.4)	74.3
Prior syphilis history (Yes):	232 (6.2)	7.7
STD history in the last 12 months (Yes):	854 (22.8)	27.6
Received free condoms in the last 12 months (No):	873 (23.3)	27.6
Received advice on STD in the last 12 months (No):	1363 (36.4)	68.1
Received lubricant gel in the last 12 months (No):	3099 (82.7)	54.5
iii. Contextual:		
iii.a. Behavioral		
Gender of first sexual partner (Woman):	1782 (47.6)	52.9
Age at first sexual intercourse (≤14 years):	1858 (49.9)	46.9
Number of partners in the last 6 months (> 5):	1078 (29.0)	24.5
Condom use in all sexual intercourses in the last 12 months (No):	2241 (59.8)	63.6
Using places/services to find partners in the last month (Yes):	1568 (41.9)	41.9
Sex with a network of potential guests (Yes):	2207 (61.0)	51.8
Received money for sex (Yes):	1146 (30.6)	33.3
Sexual intercourse under the effects of any drug in the last 6 months	2447 (65,5)	66,3
(Yes)	2447 (65.5)	66.3
Self-perceived risk of HIV infection (Mod-High):	1010 (26.9)	29.9
Risk Behavior Score - 12 months (> 8 Very high):	738 (19.7)	19.9
Alcohol use frequency (Twice a week or more)	2238 (59.8)	63.5
Use of illicit drugs in the last 6 months (Yes):	1497 (40.1)	42.8
iii.b. Related to sexual orientation:		
Self-sexual identity (Bi-Hetero):	1450 (38.7)	38.7
Discrimination due to sexual orientation (Yes)	1293 (36.4)	27.9
Suffered verbal violence (Yes):	1697 (45.3)	43.2
Suffered physical violence (Yes):	557 (14.9)	13.4
Suffered sexual violence (Yes):	592 (15.8)	15.0
iii.c. Related to mental health:		
Feeling tense/worried (Always/most of the time):	2475 (66.1)	74.1
Sleeping problems (Always/most of the time):	1445 (38.6)	42.5
Feeling fear and panic (Always/most of the time):	731 (19.5)	22.2
Feeling sad/depressed (Always/most of the time):	1821 (48.6)	54.2
Suicidal thoughts (Always/most of the time):	357 (9.5)	11.0

[1] The number of participants in each category varies due to the ignored information. [2] Unweighted proportion. [3] Weighted proportion.

before the interview among the population of MSM in Brazil. The results found in this study are within the range of the reported proportion in the national and international literature. Internationally, a substantial variation is observed between the results found, from 16% to 63%,

Table 2. Univariate analysis of the factors associated with receiving money for sex in the previous 12 months, Brazil, 2009. (N = 3749[1]).

Characteristics	YES n (%)	NO n (%)	OR_w[2] (CI 95%)	X^2 (p-value)
i. Sociodemographic:				
Age:				
≤ 25 years	676 (34.9)	1295 (65.1)	1.12 (0.98 – 1.28)	0.088
> 25 years	464 (32.3)	1299 (67.7)	1.00	
Schooling:				
≤ 8 years	563 (52.6)	564 (47.4)	4.50 (3.90 – 5.20)	< 0.001
> 9 years	577 (19.8)	2029 (80.2)	1.00	
Social class:				
C-D-E	889 (35.1)	1674 (64.9)	4.27 (3.41 – 5.37)	< 0.001
A-B	156 (11.2)	882 (88.8)	1.00	
Skin color / ethnicity:				
Non-white	1012 (33.1)	2263 (66.9)	0.92 (0.78 – 1.11)	0.414
White	134 (34.7)	338 (65.3)	1.00	
Marital status:				
Single/alone	986 (34.0)	2146 (66.0)	1.18 (0.98 – 1.43)	0.076
Married/Common-law marriage	164 (30.2)	456 (69.8)	1.00	
Currently employed:				
No	446 (36.8)	762 (63.2)	1.24 (1.07 – 1.44)	0.003
Yes	700 (31.9)	1841 (68.1)	1.00	
ii. Programmatic:				
Positive serology for HIV:				
No	244 (12.8)	2029 (87.2)	0.94 (0.76 – 1.16)	0.547
Yes	79 (12.1)	930 (87.9)	1.00	
Positive serology for syphilis:				
No	236 (13.6)	2055 (86.4)	1.29 (1.06 – 1.56)	0.011
Yes	104 (16.8)	903 (83.2)	1.00	
Knowledge of HIV transmission:				
Insufficient	601 (38.8)	1016 (61.2)	1.51 (1.33 – 1.74)	< 0.001
Sufficient	542 (29.5)	1583 (70.5)	1.00	
Prior HIV test:				
No	712 (40.1)	1065 (59.9)	1.81 (1.58 – 2.07)	< 0.001
Yes	434 (27.0)	1538 (73.0)	1.00	
Prior syphilis test:				
No	901 (35.1)	1678 (64.9)	1.37 (1.17 – 1.61)	< 0.001
Yes	209 (28.3)	824 (71.7)	1.00	
Prior syphilis history:				
Yes	62 (39.0)	170 (61.0)	1.30 (1.02 – 1.66)	< 0.034
No	1081 (33.0)	2430 (67.0)		
STD history in the last 12 months:				
Yes	281 (40.3)	573 (59.7)	1.52 (1.31 – 1.76)	< 0.001
No	862 (30.8)	2027 (69.2)	1.00	
Received free condoms in the last 12 months:				
No	267 (32.0)	606 (68.0)	0.92 (0.78 – 1.07)	0.257
Yes	876 (34.0)	1993 (66.0)	1.00	
Received advice on STD in the last 12 months:				
No	363 (27.9)	1000 (72.1)	0.68 (0.59 – 0.79)	< 0.001
Yes	781 (36.0)	1600 (64.0)	1.00	

Table 2. Univariate analysis of the factors associated with receiving money for sex in the previous 12 months, Brazil, 2009. (N = 3749[1]).

Characteristics	YES n (%)	NO n (%)	OR$_w$[2] (CI 95%)	X^2 (p-value)
Received lubricant gel in the last 12 months:				
No	1014 (36.1)	2085 (63.9)	2.40 (1.94 – 2.99)	< 0.001
Yes	129 (19.0)	515 (81.0)	1.00	
iii. Contextual				
iii.a. Behavioral:				
Gender of first sexual partner:				
Woman	731 (42.7)	1051 (57.3)	2.52 (2.18 – 2.90)	< 0.001
Man/Transvestite	415 (22.8)	1548 (77.2)	1.00	
Age at first sexual intercourse:				
≤ 14 years	669 (41.7)	1189 (58.3)	2.01 (1.75 – 2.30)	< 0.001
> 14 years	473 (26.2)	1394 (73.8)	1.00	
Number of partners in the last 6 months:				
> 5	569 (56.5)	509 (43.5)	3.76 (2.23 – 4.39)	< 0.001
≤ 5	557 (25.6)	2082 (74.4)	1.00	
Condom use in all sexual intercourses in the last 12 months				
No	656 (32.8)	1595 (67.2)	0.93 (0.82 – 1.08)	0.371
Yes	500 (34.2)	1008 (65.8)	1.00	
Using places or services to find partners in the last month:				
Yes	593 (41.5)	975 (58.5)	1.86 (1.62 – 2.13)	< 0.001
No	551 (27.6)	1625 (72.4)	1.00	
Sex with a network of potential guests:				
Yes	706 (36.4)	1501 (63.6)	1.32 (1.16 – 1.52)	< 0.001
No	401 (30.1)	1007 (69.9)	1.00	
Sexual intercourse under the effects of any drug in the last 6 months:				
Yes	879 (38.2)	1568 (61.8)	1.97 (1.69 – 2.29)	< 0.001
No	263 (24.0)	1025 (76.0)	1.00	
Self-perceived risk of HIV infection:				
Moderate – High	390 (41.3)	620 (58.7)	1.79 (1.48 – 2.03)	0.027
Don't know – ND	211 (32.2)	454 (67.8)	1.17 (0.99 – 1.40)	
None – Poor	545 (28.8)	1529 (71.2)	1.00	
Risk Behavior Score – in the last 12 months:				
> 8 (Very high)	358 (54.9)	353 (45.1)	3.16 (2.69 – 3.72)	< 0.001
≤ 8 (Low – Medium – High)	751 (27.8)	2249 (72.2)	1.00	
Alcohol use frequency:				
Twice a week or more	775 (36.9)	1463 (63.1)	1.55 (1.34 – 1.79)	< 0.001
Never/Casual	369 (27.4)	1135 (72.6)	1.00	
Use of illicit drugs in the last 6 months:				
Yes	689 (50.4)	808 (49.6)	3.88 (3.37 – 4.47)	< 0.001
No	454 (20.8)	1784 (79.2)	1.00	
iii.b. Related to sexual orientation:				
Self-sexual identity:				
Bisexual/Heterosexual	690 (48.6)	760 (51.4)	3.05 (2.66 – 3.51)	< 0.001
MSM/Homosexual	454 (23.7)	1841 (76.3)	1.00	

Table 2. Univariate analysis of the factors associated with receiving money for sex in the previous 12 months, Brazil, 2009. (N = 3749[1]).

Characteristics	YES n (%)	NO n (%)	OR$_W$[2] (CI 95%)	X[2] (p-value)
Discrimination due to sexual orientation:				
Yes	327 (25.6)	966 (74.4)	0.63 (0.52 – 0.71)	< 0.001
No	819 (36.3)	1637 (63.7)	1.00	
Suffered verbal violence:				
Yes	459 (28.6)	1238 (71.4)	0.68 (0.59 – 0.78)	< 0.001
No	684 (37.1)	1362 (62.9)		
Suffered physical violence:				
Yes	193 (41.5)	364 (58.5)	1.49 (1.23 – 1.80)	< 0.001
No	950 (32.2)	2235 (67.8)		
Suffered sexual violence:				
Yes	179 (39.2)	413 (60.8)	1.34 (1.22 – 1.62)	0.001
No	967 (32.3)	2190 (67.7)	1.00	
iii.c. Related to mental health:				
Feeling tense or worried:				
Always/most of the time	759 (33.4)	1716 (66.6)	0.99 (0.85 – 1.16)	0.923
Never/Rarely	385 (33.6)	883 (66.4)	1.00	
Sleeping problems:				
Always/most of the time	488 (35.7)	957 (64.3)	1.19 (1.04 – 1.37)	0.010
Never/Rarely	656 (31.8)	1642 (68.2)	1.00	
Feeling fear and panic:				
Always/most of the time	308 (44.0)	423 (56.0)	1.80 (1.54 – 2.11)	< 0.001
Never/Rarely	836 (30.4)	2176 (69.6)	1.00	
Feeling sad or depressed:				
Always/most of the time	617 (37.5)	1204 (62.5)	1.50 (1.31 – 1.72)	< 0.001
Never/Rarely	527 (28.6)	1395 (71.4)	1.00	
Suicidal thoughts:				
Always/most of the time	173 (59.8)	184 (40.2)	3.44 (2.79 – 4.24)	< 0.001
Never/Rarely	971 (30.2)	2414 (69.8)	1.00	

[1] Values vary due to ignored information.

[2] Weighted Odds Ratio.

which can be attributed to the different characteristics of the target population, the overlapping of vulnerability factors and differences in recruitment, among others[31-35]. In Brazil, in the city of Campinas, 14.8% of MSM received money in exchange for sex in the previous two months[13]. Thus, the comparison between the results found should be cautious, as they are mostly limited to local studies and subpopulations of MSM of greater social vulnerability, such as drug users, people living in the streets and the unemployed. Thus, methodological differences can influence the result found because methodologies in which the recruitment is carried out by the participant based on financial incentive can result in greater participation of those interested in this incentive. Another critical factor is the definition of the time bracket for sexual practice in exchange for money before the interview, in the previous 12 months in this study and up to two months in Tun et al.[13].

In this study, MSM who received money in exchange for sex showed essential differences in sociodemographic issues when compared to other MSM. MSM who received money in exchange for sex had lower schooling, lower social classes, and lower probability of being employed at the time of the interview. These results are consistent with other studies conducted in Brazil and other countries[6,12,13,32]. In this sample, following the international trend, MSM who received money in exchange for sex show greater social marginalization when compared to other MSM. The marginalization of this group can lead to human

Table 3. Multivariate analysis of the factors associated with receiving money for sex in the previous 12 months, Brazil, 2009. (N=3749[1]).

Characteristics	Intermediate models					Final model
	Sociodemographic	Programmatic	Behavioral	Related to sexual identity	Related to mental health	
Age						
≤ 25 years	1.60 (1.36 – 1.88)**					2.04 (1.68 – 2.48)**
Schooling						
≤ 8 years	3.45 (2.97 – 4.07)**					3.58 (2.92 – 4.37)**
Social class						
C-D-E	2.78 (2.19 – 3.54)**					2.35 (1.77 – 3.11)**
Currently employed						
No	1.46 (1.24 – 1.72)**					
Knowledge of HIV transmission						
Insufficient		1.32 (1.15 – 1.53)**				
Prior HIV test						
No		1.60 (1.38 – 1.86)**				
Prior syphilis history						
Yes		1.40 (1.05 – 1.87)*				1.60 (1.13 – 2.25)**
STD history in the last 12 months						
Yes		1.52 (1.29 – 1.80)*				
Received advice on STD in the last 12 months						
No		0.84 (0.71 – 0.98)*				
Received lubricant gel in the last 12 months						
No		2.06 (1.64 – 2.58)**				
Gender of first sexual partner						
Woman			2.89 (2.46 – 3.40)**			2.32 (1.87 – 2.89)**
Age at first sexual intercourse sexual						
≤ 14 years				1.69 (1.45 – 1.98)**		1.78 (1.48 – 2.16)**
Using places/services to find partners in the last month						
Yes			1.46 (1.24 – 1.70)**			1.27 (1.05 – 1.56)*

Table 3. Multivariate analysis of the factors associated with receiving money for sex in the previous 12 months, Brazil, 2009. (N=3749[1]).

Characteristics	Intermediate models					Final model
	Sociodemographic	Programmatic	Behavioral	Related to sexual identity	Related to mental health	
Sex with a network of potential guests						
Yes			1.18 (1.02 – 1.38)*			1.25 (1.04 – 1.51)*
Risk Behavior Score - 12 months						
> 8 (Very high)			1.84 (1.52 – 2.24)**			2.76 (2.16 – 3.52)**
Use of illicit drugs in the last 6 months						
Yes			2.72 (2.33 – 3.18)**			1.89 (1.56 – 2.29)**
Self-sexual identity						
Bisexual/Heterosexual				2.94 (2.54 – 3.40)**		2.49 (2.03 – 3.05)**
Discrimination due to sexual orientation						
Yes				0.79 (0.56 – 0.81)**		
Suffered verbal violence						
Yes				0.79 (0.67 – 0.93)**		
Suffered physical violence						
Yes				2.08 (1.67 – 2.58)**		
Suffered sexual violence						
Yes				1.53 (1.25 – 1.88)**		
Sleeping problems						
Always/most of the time					0.87 (0.74 – 1.02)*	
Feeling fear and panic						
Always/most of the time					1.46 (1.24 – 1.75)**	
Feeling sad/depressed						
Always/most of the time					1.20 (1.02 – 1.40)*	
Suicidal thoughts						
Always/most of the time					3.01 (2.42 – 3.75)**	2.71 (2.05 – 3.59)**

Weighted *Odds Ratio* according to the size of the social network and the proportion of MSM in each city related to the total sample. (*) p < 0,05; (**) p < 0,01; (***) p < 0,001

rights violations resulting in substantial barriers to their access to prevention information and health services for the prevention and treatment of HIV infection[36].

The positive association between receiving money in exchange for sex and being younger (age less than or equal to 25 years) is also described by other studies[6,12,32,37]. Despite the ethical complexities involved in research involving young people and adolescents, resulting in few studies with this population, many MSM who received money in exchange for sex in different countries report having started sex work in adolescence, sometimes in coercive or forceful[38] conditions due to the economic factor or family abandonment[19]. The high prevalence of HIV infection observed among MSM in adolescence and youth may suggest that the vulnerability factors present during adolescence are related to infection[16]. In this study, a significant proportion of MSM who received money in exchange for sex reported first sexual intercourse up to 14 years old and with female partners. Despite the increased use of condoms in the first sexual intercourse among young people aged 16-19 years in Brazil, sexual activity without a condom has grown among young people who started their sexual life before the age of 14[39]. Also, late sexual first sexual intercourse, i.e., over 17 years of age for boys, is vital for the determination of the subsequent use of condoms[40]. The earlier the onset of sexual activity among members of the MSM population, the higher the likelihood of this individual having risk sexual behavior for HIV infection in adulthood[29].

In recent years, the use of the Internet and geosocial network applications for phones with the aim of finding sexual partners has gained prominence among MSM worldwide[41,42]. Also, specific spaces of socialization among members of the MSM population are available, such as bars and nightclubs characterized as LGBT or "gay-friendly", squares, parks, saunas, among others. In this study, having received money in exchange for sex was positively associated with using places or services to find sex partners in the previous month. Thus, we note that a trend of sex work is also related to experiences in the field of internet and geosocial network applications, besides those already usually identified[18].

This study evidenced that MSM who received money in exchange for sex reported a higher frequency of having a very high-risk behavior for HIV infection when compared to other MSM. These results probably indicate a high number of

sexual partnerships that can be fixed, casual and commercial, and inconsistent use of condoms in anal intercourse with these partners in the previous 12 months[29]. Literature[12,13,43] reports that high-risk behavior has been shown to be related to HIV infection and syphilis, in isolation or by coinfection. Differently from that found in the literature[16], the results of this study did not show an association between serological positivity for HIV and syphilis with the exchange of sex for money. That is, although they are more exposed to several factors that are vulnerable to HIV and syphilis than the others, there is no statistical difference for HIV infection and syphilis among MSM who received money in exchange for sex and the other MSM in the sample. It should be emphasized that, in this study, there was a significant number of participants who did not perform the serological test for HIV at the time of the interview, possibly generating a bias in the measurement of this variable.

It is known that, as a consequence of sociocultural factors, stigma, discrimination, and violence, the MSM population may be at higher risk of developing mental disorders such as anxiety and depression[44]. Moreover, the international literature points out that some types of mental disorders are associated with higher risk sexual behavior in MSM[45,46]. Moreover, high rates of depression and other mental disorders are reported in different countries[16,32,47] among MSM who received money in exchange for sex. Depression and hopelessness are associated with suicidal thoughts, which are considered a risk factor for effective suicide[48]. In consonance with the literature, this study found an independent association between suicidal thoughts and the receipt of money in exchange for sex, which may express a higher vulnerability of this population to self-destructive behaviors.

Thus, we highlight the importance of prevention programs aimed at providing MSM, especially those who have received money in exchange for sex, humanized care, a reception, active listening and psychological and therapeutic counseling through the health services to prevent them from developing suicidal behaviors and thoughts or adopting self-destructive conducts.

The positive association between self-identification as heterosexual or bisexual with the exchange of sex for money among Brazilian MSM is also reported in the national and international literature[13,49]. Identification as heterosexual or bisexual among MSM who received money in exchange for sex may be associated with less re-

ceptive anal sexual practices than their gay peers and is thus an essential factor to consider for HIV transmission[50,51]. On the other hand, it is believed that the association between receiving money in exchange for sex and mental disorders can be mediated by sexual identity due to the identity conflict of those who identify as heterosexual or bisexual and the stigma of sex work between men being related to homosexuality[52].

The use of illicit drugs in the six months before the interview was positively associated with the exchange of sex for money by MSM. This result is consistent with the national and international literature[13,32,49]. In general, the use of illicit drugs by MSM is more significant than that estimated for the general Brazilian population, and this difference is more pronounced among MSM who received money in exchange for sex[13]. The greater involvement with drug use is high among MSM who received money in exchange for sex and may be related to the stigma, discrimination, and violence that these people endure[49]. Also, the environments in which MSM seek commercial sex partners due to marginalization are often favorable to alcohol and illicit drug use[12]. Another critical factor is that receiving money in exchange for sex may be the result of the economic need of many drug users[53].

In this study, having suffered physical violence due to sexual orientation was positively associated with the receipt of money in exchange for sex for MSM. Violence due to sexual orientation is an essential indicator of vulnerability, as it intimidates, humiliates and entails social isolation, restricting the places and times of circulation in the public space, as well as access to health services, as a way of preserving themselves from assault or bullying.

This study has some limitations. This is a cross-sectional study with a single sample of Brazilian MSM obtained from ten cities from different states, with different sociocultural, geographic and epidemiological contexts that may not necessarily be representative of the entire Brazilian MSM population, and the RDS sampling technique is potentially subject to selection bias. Thus, people recruited in the sample of each city may show different characteristics. However, theoretically, when the sample reaches a steady state after successive waves of recruitment, the estimates obtained through the RDS are robust and tend to minimize this bias[27]. The characteristics of the sample can also be influenced by homophilia,

that is, individuals with specific characteristics may tend to recruit pairs with similar characteristics[54]. However, this method stands out because it reaches hard-to-reach populations, avoiding results based only on samples of convenience. Finally, although the combined analysis of the ten independent samples does not certify that the results found are representative of the Brazilian MSM population, the pooled data provide a more robust sample with higher statistical power and are more suitable for the general purpose of surveillance monitoring at the national level, as initially proposed. Despite these limitations, the high proportion of MSM who exchanged sex for money and their associated factors shown in this study is of very relevant in the context of public health, regarding the prevention of HIV infection and health promotion in this population.

As shown in this study, a large number of MSM reported having exchanged sex for money the year before the interview. The results are in agreement with findings in the national and international literature, confirming the hypothesis that MSM who received money in exchange for sex have greater socioeconomic, programmatic and behavioral vulnerability potentially increasing the risk of HIV infection than other MSM in the sample.

The sociodemographic and behavioral risk characteristics, including the use of illicit drugs by this population, require the development of specific intervention strategies that take into account the whole social dynamics of this group, focusing on the perspective of human rights and fight against prejudice, stigma and homophobic violence. As a result, it is necessary to consider the vulnerability factors in the construction of policies to prevent HIV infection and health promotion for MSM who received money in exchange for sex, also concerning the collection of information of higher quality about this population. Besides the new approaches, such as increased HIV testing, the use of HIV pre-exposure prophylaxis (PrEP), post-exposure prophylaxis (PEP), the use of rectal microbicides, actions to cope with stigma and discrimination are essential instruments in reducing the incidence of HIV infections and, consequently, on the course of the epidemic. Among these, the debate on the regulation of sex work, advertising actions directed to this segment and the promotion of the social inclusion of this population are highlighted in coping with the expanded HIV epidemic.

Collaborations

DJD Alecrim and MGB Ceccato contributed to the project design, data interpretation, writing and relevant critical review of the article content, as well as accompanying all stages of the work in ensuring the accuracy and integrity of any part of the work. I Dourado, L Kerr and AM Brito contributed to the project design, writing and relevant critical review of the content of the article, as well as accompanying all stages of the work to ensure the accuracy and integrity of any part of the work. MDC Guimarães contributed to the project design, data analysis and interpretation, writing and relevant critical review of the article content, as well as accompanying all stages of the work in ensuring the accuracy and integrity of any part of the work.

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