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Correlates of intensive alcohol and drug use in men who have sex with men in Catalonia, Spain

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Background: The objectives of the study were to determine the prevalence of alcohol and drug use before or during sex among men who have sex with men (MSM) in Catalonia during 2006, and to identify factors associated with variables of intensive alcohol and drug use. **Methods:** Cross-sectional study using self-administered questionnaires. Men were recruited in saunas, sex shops, bars and a public park and by mail to all the members of the Catalonia Gay Federation. **Results:** 19.6% of men said they were frequent users of alcohol, some type of drug (21.7%), or that they were multidrug users (18%) in the last 12 months. The multivariate analysis showed an association between having suffered discrimination and frequent alcohol and multidrug use. Being human immunodeficiency virus (HIV)-positive was associated with frequent use of drugs and multidrug use. Associations between substance use and sexual risk behaviour also emerged. **Conclusion:** The high percentage of MSM who use alcohol and drugs before and during sex and association between these substances and sexual risk behaviours reveals the need to intensify interventions to reduce their levels of use and/or to reduce the associated damage and risks. These programs must try to cover MSM-specific psychosocial aspects and include prevention for HIV-positive men.

Keywords: men who have sex with men, substance use, sexually transmitted infections, HIV, sexual risk behaviour.

Introduction

In Spain, as in most European and North American countries, men who have sex with men (MSM) have been highly impacted by human immunodeficiency virus (HIV).[1] Catalonia, with a population of ~7 million people, was among the Spanish autonomous regions with the highest incidence of AIDS in 2006 (30 per 1 000 000 inhabitants). An HIV surveillance system introduced in 2001 indicated that MSM accounted for 43.4% of male HIV cases in 2001–2006.[2] In Catalonia, significant growth in the prevalence of HIV (from 14.2% in 1995 to 24% in 2004)[2] and other sexually transmitted infections (STI) has been observed.[3,4] Among MSM, there has also been an increase in the prevalence of sexual risk behaviours such as unprotected anal intercourse with casual partners (from 24.1% in 1995 to 34.5% in 2004).[2,5]

A previous study carried out in Catalonia in 2002 revealed drug use before or during sex as one of the factors associated with unprotected anal intercourse among MSM.[6] Several studies have shown that using alcohol or drugs before or during sex can increase the likelihood of having high-risk sexual behaviours,[7–12] although it is unclear whether such links are causal or merely correlational. Prior research has put forward several potential explanations for this association. First, certain drugs are used to enhance sex among MSM, and their use during sex may increase the risk of engaging in unprotected sex due to pharmacological effects such as social disinhibition and prolonged intercourse.[13,14] Second, it has been argued that substance use and sex may be particularly linked for MSM because the centre of gay community life, historically, has been bars.[15] Finally, having a risk-taking personality might explain both sexual behaviour and drug use.[11] Nevertheless, while several investigators have documented this association, others studies have not found such effects.[16,17] In addition to indicators of sexual behaviour, other psychosocial factors related to gay culture have been associated with substance use by MSM. These factors included 'being out' to others about having sex with men,[11,14,18] having experienced anti-gay discrimination,[14] and attending gay bars.[19]

There is evidence that drug consumption is a risk factor for HIV infection.[20] Recent data from the Multicenter AIDS Cohort Study show that men who used methamphetamine had a relative risk of HIV seroconversion of 1.46 compared with men who did not use this drug. This risk increased to 2.10 if the methamphetamine was accompanied by poppers.[21]

Contrary to other countries, e.g. USA, where a high prevalence of alcohol and recreational drug use among MSM has been widely reported,[11,14,18,19] less data are available in Europe and most are secondary findings with little detail about the type of drug, drug combination or context of use.[8,22] In particular, the prevalence of alcohol use in the UK Gay Men's Sex Survey in 2005 was 91.5%, and the prevalence of use of other drugs such as inhaled nitrites (poppers) and marijuana was 39.4% and 27.7%, respectively, during the 12 months before the interview.[12] A finding that merits attention in most of these studies is the common multidrug pattern among MSM who use drugs.[8,12,18,19]

The lack of studies on drugs and MSM in Europe, and particularly in Spain, reinforces the need for a more in-depth

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analysis of drug and alcohol use in this group, since identifying the factors that determine the use of these substances will help us design specific strategies for the reduction of the risks and damage associated with their use. In this context, the objectives of our study were to determine the prevalence of alcohol and drug use before or during sex among MSM in Catalonia during 2006 and to identify the sociodemographic, psychosocial and behavioural factors associated with three specific variables of intensive alcohol and drug use.

Methods

Behavioural surveillance among MSM started in 1993 as part of the Integrated HIV/STI Surveillance System (SIVES) in Catalonia.[2] Since then, seven biennial cross-sectional studies have been carried out. In the most recent (2006), a convenience sample of MSM was recruited at saunas, sex shops, bars and a public park frequented by gay men. These sites were selected from a larger list of gay venues screened prior to the survey. Venues were chosen to represent a wide cross-section of MSM in Barcelona. Additionally, MSM were recruited using a current mailing list from a gay federation in Catalonia (*Coordinadora Gai-Lesbiana*).

Over a 6-week period, four volunteers from 'Stop Sida' handed out 2735 questionnaires at the different gay venues and, during the last weeks of enrolment, an additional 1166 questionnaires were sent to all the members of the Catalonia Gay Federation. All men present in the venue during a specific period were invited to participate. Of the men approached, 81.7% accepted the questionnaire. The questionnaires were anonymous, self-administered and accompanied by a self-addressed stamped envelope that was to be sent to a post-office box; therefore, it was impossible to ascertain whether anyone had answered more than once. The distributed questionnaires were marked in order to identify the origin of the returned questionnaires. The return rate was 22.5%.

Variables

The questionnaire used was adapted from a questionnaire developed and validated by the Lausanne University Institute of Social and Preventive, which investigated behavioural patterns over the last 12 months.[23] It collected sociodemographic data such as age, educational level and country of origin, and enquired as to sexual orientation and whether they had been a victim of verbal insults or aggression in the past 12 months. The questionnaire also evaluated their degree of being 'out' to others (family, friends and acquaintances) coded as 1 (out to everyone), 2 (out to someone) or 3 (not out to anyone). The degree of internalized homophobia, that is the men's own negative attitude towards their homosexuality or bisexuality, was investigated using seven items on acceptance of homosexuality with responses ranging from 1 (totally agree) to 4 (totally disagree).[24] Once the internal consistency of these variables was calculated (Cronbach's α 0.823), a new variable was created for each individual with the mean response to the seven items using values ranging from 1 (high internalized homophobia) to 4 (no internalized homophobia).

The questionnaire also collected variables on sex practices in the last 12 months with stable and casual partners and on the use of condoms, number of partners, self-reported HIV status and previous history of STI. A stable partner was defined as any person with whom the respondent had sexual relations and felt closer and more committed. Unprotected anal intercourse was defined as inconsistent use of a condom with a sexual partner during the last 12 months.

The participant was asked about alcohol and drug use (cannabis, heroin, cocaine, crack, ecstasy, amphetamines, poppers, LSD, Viagra, ketamine and methamphetamine) before or during sex over the last 12 months and about the frequency of use for each substance (always, frequently, occasionally or never). This information was used to construct the specific response variables for the intensive use of alcohol and drugs: (i) *Frequent alcohol use*, that is, the use of alcohol always or frequently before or during sex over the last 12 months; (ii) *Frequent drug use*, that is, the use of at least one drug always or frequently before or during sex over the last 12 months; (iii) *Multidrug use*, that is, the use of three or more different drugs before or during sex over the last 12 months. These variables were not mutually exclusive.

Statistical analysis

The prevalence of drug or alcohol use during sex over the last 12 months was calculated for the descriptive analysis. Logistic regression was used to evaluate the sociodemographic, psychosocial and sexual behaviour variables associated with each of the specific response variables for the intensive use of alcohol and drugs. Variables whose P value was <0.10 in the univariate models were included in the multivariate models and the adjusted odds ratios (OR) with their respective confidence intervals (95% CI) were calculated. The calibrations of the models were assessed by the Hosmer–Lemeshow goodness-of-fit statistic. Statistical significance was set at 0.05.

Results

Characteristics of the participants

Of the 868 men included in the study, 850 (97.9%) had sex with other men during the last 12 months. These were the participants included in the analysis. Mean age was 41 years (SD 9.8) and more than half were educated to university level (53.2%). Immigrants accounted for 20.4% of the group, and most were from Latin America (56.6%). Most of the men identified themselves as homosexual (89.2%) and 51.4% said they were 'out to everyone'. Eleven percent stated that they had received verbal insults and/or aggression because of their sexual orientation and 7.7% of homo/bisexuals had a high degree of internalized homophobia with values lower than 2.5. As for sexual behaviour during the last 12 months, 55.4% said they had a stable sexual partner, 44.9% said they had sex with more than 20 men and 28.7% said they had unprotected anal intercourse at some time with their casual partner. The self-reported prevalence of HIV was 19.7% and 18% said they had had an STI during the last year (table 1).

Prevalence of alcohol and drug use before or during sex

More than half the participants said they had used alcohol and drugs at some time before or during sex (63.8% and 56.3%, respectively), with poppers, cannabis, cocaine and Viagra as the most common (40.8%, 26%, 18.8% and 13.2%, respectively) (table 2).

Related the variables for the intensive use of alcohol or drugs before or during sex, 19.6% of men said they were frequent users of alcohol, some type of drug (21.7%) or that they had used several drugs (18%) during the last 12 months (table 2).

Table 1 Sociodemographic, psychosocial and sexual behavior characteristics of a sample of MSM in Catalonia, Spain, 2006

Variable	*N*	%
Age group (years)		
19–25	31	3.7
26–35	225	27.0
>35	578	69.3
Immigrant	173	20.4
Education		
Primary or less	107	12.8
Secondary	285	34.0
University degree	446	53.2
Sexual orientation		
Homosexual	756	89.2
Bisexual	72	8.5
Other	20	2.4
Degree of being 'out' to others		
Out to no one	393	51.4
Out to someone	322	42.1
Out to anyone	50	6.5
Victim of verbal insults and/or aggression[a]	93	11.0
Internalized homophobia scale[b]		
1–2.5	65	7.7
2.5–4	775	92.3
Stable male partner[a]	453	55.4
No of male sexual partners[a]		
1–10	296	35.8
11–20	160	19.3
>20	371	44.9
UAI (casual partner)[a]	233	28.7
Prevalence of HIV (self-reported)[c]	139	19.7
Any STI[a]	153	18.0

UAI, unprotected anal intercourse
a: Last 12 months
b: Base: homo/bisexuals ($n = 828$)
c: 704 who were tested and reported the result

Table 2 Prevalence of alcohol and drug use before or during sex in a sample of MSM in Catalonia, Spain, 2006 (last 12 months)

	n	%
Alcohol use (sometimes)	533	63.8
Drug use (sometimes)	470	56.3
Type of drug used		
Cannabis	217	26.0
Heroin	6	0.7
Cocaine	157	18.8
Crack	10	1.2
Ecstasy	85	10.2
Amphetamines	38	4.6
Poppers	341	40.8
LSD	11	1.3
Viagra	110	13.2
Ketamine	42	5.0
Methamphetamine	25	3.0
Frequent alcohol use: always or frequently	164	19.6
Frequent drug use: always or frequently	181	21.7
Multidrug use: three or more different drugs	150	18

Correlates of intensive alcohol and drug use before or during sex

The results of univariate and multivariate regression models are presented in tables 3 and 4, respectively.

Frequent alcohol use

In the final multivariate regression model adjusted for the recruitment site, men aged 25 years of less (OR 1.76; 95% CI 1.18–2.63) and those who had been victim of verbal insults and/or aggression because of their sexual orientation (OR 1.77; 95% CI 1.06–2.99) were more likely to be frequent users of alcohol before or during sex. Having a stable partner proved to be a protective factor against frequent alcohol use (OR 0.67; 95% CI 0.47–0.99). Finally, men who said they had had unprotected sex with casual partners had a 1.5-fold greater risk of frequent alcohol use before or during sex than those who did not have this behaviour pattern (95% CI 1.03–2.24).

Frequent drug use

Both variables of sexual risk behaviour were significantly associated with the variable frequent drug use before or during sex in the final multivariate model. Thus, men who said they had had more than 20 partners (OR 1.71; 95% CI 1.11–2.66) and unprotected sex with casual partners (OR 1.71; 95% CI 1.17–2.51) were more likely to have consumed drugs always or frequently before sex during the last 12 months. Being HIV-positive was significantly associated with frequent drug use before or during sex (OR 2.59; 95% CI 1.69–4.0).

Multidrug use

According to the multivariate analysis, the younger responders (OR 1.64; 95% CI 1.08–2.50) and those who had been victim of verbal insults and/or aggression because of their sexual orientation (OR 1.81; 95% CI 1.05–3.13) were more likely to be multidrug users. Furthermore, the number of partners (OR 2.02; 95% CI 1.14–3.61 for 11–20 partners and OR 2.02; 95% CI 1.23–3.33 for more than 20) was also significantly associated with greater multidrug use before or during sex. Lastly, those responders who said they were HIV-positive (OR 2.62; 95% CI 1.66–4.15) and had had an STI during the last year (OR 1.97; 95% CI 1.26–3.07) had a greater risk of having taken three or more drugs before or during sex.

Discussion

The results of this study reveal a high prevalence of alcohol and drug use before or during sex among MSM recruited in Catalonia, since more than half of those interviewed said that they had used alcohol and drugs during the last year. The prevalence of drug use by MSM is higher than in the general population, whereas that of alcohol use is similar. In the 2005–2006 National Household Survey on Drug Abuse, 11.2% and 3% of people aged 15–64 reported having used cannabis and cocaine in the past year, respectively.[25] However, direct comparisons between the MSM study and probabilistic samples should be made with caution.

If we consider the prevalence of the more intensive use of these substances before or during sex, 19.6% and 21.7% of respondents, respectively, used alcohol and drugs frequently, and 18% had used three or more drugs during the last year. Despite the difficulties encountered comparing these data with those of other surveys due to the differences in reference periods and questions asked, we observed that these prevalence rates were lower than those reported in other studies undertaken in the USA,[18,19] in which the prevalence of multidrug use reached as high as 44%.[11] The few studies carried out in Europe show similar prevalence rates of alcohol and drug use; poppers were the most commonly used drugs by respondents in London and multiple drug use was common.[8,12]

Unlike studies from the US that have warned of an increase in methamphetamine use among MSM, we observed that the prevalence of methamphetamine use was 3%, similar to that observed in London.[12] However, the spread of this drug in the rest of the world, together with its potential to cause serious

Table 3 Univariate analysis of the variables of intensive alcohol and drug use before or during sex (last 12 months)

	Frequent alcohol use			Frequent drug use			Multidrug use		
Variable	**%**	**OR**	**95% CI**	**%**	**OR**	**95% CI**	**%**	**OR**	**95% CI**
Recruitment site									
Mailing	17.6	1		15.7	1		11.4	1	
Gay venue	20.3	1.190	0.79–1.78	23.7	1.664[a]	1.10–2.52	20.2	1.965[a]	1.23–3.14
Age (years)									
>35	16.9	1		21.5	1		15.2	1	
26–35	25.6	1.788	0.77–4.13	22.9	1.113	0.47–2.65	25.6	1.395	0.55–3.51
19–25	26.7	1.688[a]	1.16–2.45	23.3	1.084	0.75–1.57	20.0	1.917[a]	1.31–2.780
Immigrant									
No or no response	18.8	1		21.6	1		16.8	1	
Yes	22.7	1.264	0.84–1.90	22.1	1.031	0.69–1.55	22.7	1.453[b]	0.96–2.19
Education									
Secondary or less	17.6	1		23.4	1		19.3	1	
University	21.2	1.255	0.88–1.78	19.6	0.799	0.57–1.11	16.5	0.824	0.58–1.18
Sexual orientation									
Homosexual	19.4	1		21.7	1		18.1	1	
Bisexual	21.1	1.114	0.61–2.03	23.9	1.136	0.64–2.01	19.7	1.111	0.60–2.05
Other	20.0	1.040	0.34–3.16	15.0	0.637	0.18–2.20	10.0	0.502	0.12–2.19
Degree of being 'out' to others									
Out to no one	22.0	1		20.0	1		18.0	1	
Out to someone	18.5	0.962	0.47–1.96	19.1	1.261	0.61–2.62	14.7	1.297	0.61–2.77
Out to everyone	21.3	0.803	0.45–2.00	24.0	0.945	0.45–2.00	22.2	0.788	0.36–1.73
Verbal insults/aggression[c]									
No	18.2	1		22.0	1		16.9	1	
Yes	30.8	2.00[a]	1.23–3.24	19.8	0.874	0.51–1.51	27.5	1.861[a]	1.13–3.06
Internalized homophobia scale[d]									
2.5–4	18.8	1		21.7	1		18.7	1	
1–2.5	29.5	1.808[a]	1.01–3.23	23.0	1.077	0.58–2.00	11.5	0.563	0.25–1.26
Stable male partner[c]									
No	22.6	1		21.8	1		19.4	1	
Yes	17.0	0.699[a]	0.49–0.99	22.3	1.032	0.74–1.44	17.0	0.850	0.59–1.22
No. of male sex partners[c]									
1–10	16.0	1		13.7	1		9.2	1	
11–20	18.4	1.177	1.71–1.96	22.2	1.800[a]	1.09–2.97	21.5	2.701[a]	1.56–4.67
>20	22.4	1.514[a]	1.02–2.25	27.6	2.416[a]	1.61–3.62	23.7	3.061[a]	1.93–4.86
UAI (casual partner)[c]									
No	16.3	1		17.9	1		14.8	1	
Yes	25.4	1.746[a]	1.21–2.53	31.2	2.073[a]	1.46–2.95	26.4	2.063[a]	1.42–3.00
HIV (self-reported)									
Negative	19.6	1		19.1	1		16.1	1	
Positive	24.3	1.317	0.84–2.05	39.7	2.796[a]	1.87–4.18	34.6	2.759[a]	1.81–4.20
Unknown	15.4	0.747	0.43–1.29	15.4	0.772	0.45–1.33	9.4	0.542[b]	0.28–1.05
Any STI[c]									
No	18.7	1		19.5	1		15.0	1	
Yes	23.7	1.348	0.88–2.05	31.6	1.909[a]	1.29–2.82	31.6	2.620[a]	1.75–3.91

UAI, unprotected anal intercourse
a: $P < 0.05$
b: $P < 0.10$
c: Last 12 months
d: Base: homo/bisexuals ($n = 828$)

health problems, highlights the importance of monitoring its use.

The multivariate analysis of factors related to intensive alcohol and drug use before or during sex showed an association between age and frequent alcohol and multidrug use. This result corroborates those of other studies that show a greater prevalence of use of these substances among young MSM.[11,19,26] Intervening in the young MSM population is a challenge, since these individuals have not experienced the damage caused by the HIV epidemic during its earliest phases, but present opportunities to reduce risk behaviour at a younger age and, therefore, to prevent the consequences associated with these practices in the long term.

As in other studies undertaken in the USA and the UK,[8,12,19,27] a clear association was observed between being HIV-positive and frequent use of drugs and multidrug use. Some authors state that many HIV-infected men use these substances to handle the stress brought about by their illness or homophobia or societal prejudice.[28] Nevertheless, we cannot make a causal link with the data reported here. It has also been shown that some substances, especially methamphetamine, interact with HAART in HIV-infected MSM.[29] These data, together with those that show high prevalence rates of sexual risk behaviour in HIV-positive patients[27] suggest the need to develop counselling programs or behavioural interventions to modify sexual risk behaviour and drug use patterns in HIV-positive individuals, not only to reduce the transmission of HIV, but also to avoid reinfection, new STI and other health risks associated with the use of these substances. In this sense, working against the stigma and discrimination that these individuals face will benefit prevention programs.

Apart from HIV, this study also shows an association between STI and greater multidrug use. A recent case-control

Table 4 Multivariate analysis of the variables of intensive alcohol and drug use before or during sex (last 12 months)[a]

	Frequent alcohol use[b]			Frequent drug use[c]			Multidrug use[d]		
Variable	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***	**OR**	**95% CI**	***P***
Age									
>35	1			–	–	–	–	–	–
26–35	1.875	0.79–4.47	0.197	–	–	–	1.907	0.72–5.08	0.197
19–25	1.760	1.18–2.63	0.020	–	–	–	1.645	1.08–2.50	0.020
Verbal insults/aggression[e]									
No	1			–	–	–	1		
Yes	1.777	1.06–2.99	0.030	–	–	–	1.816	1.05–3.13	0.032
Stable male partner[e]									
No	1								
Yes	0.678	0.47–0.99	0.040						
No. of male sex partners[e]									
1–10	–	–	–	1			1		
11–20	–	–	–	1.389	0.81–2.37	0.230	2.028	1.14–3.61	0.016
>20	–	–	–	1.717	1.11–2.66	0.016	2.027	1.23–3.33	0.005
UAI (casual partner)[e]									
No	1			1			–	–	–
Yes	1.516	1.03–2.24	0.037	1.715	1.17–2.51	0.005	–	–	–
HIV (self-reported)									
Negative	–	–	–	1			1		
Positive	–	–	–	2.596	1.69–4.00	0.000	2.627	1.66–4.15	0.000
Unknown	–	–	–	0.661	0.36–1.20	0.175	0.532	0.26–1.08	0.080
Any STI[e]									
No	–	–	–	–	–	–	1		
Yes	–	–	–	–	–	–	1.972	1.26–3.07	0.003

UAI, unprotected anal intercourse
a: Analysis adjusted for recruitment site
b: Hosmer and Lemeshow Test: 0.879
c: Hosmer and Lemeshow Test: 0.529
d: Hosmer and Lemeshow Test: 0.385
e: Last 12 months

study carried out in New York showed the use of methamphetamine as a predictor of the incidence of STI in MSM.[30]

Of the three psychosocial variables analyzed, only having suffered discrimination due to sexual orientation showed a significant association, not only with frequent alcohol use, but also with multidrug use. This association has been observed elsewhere.[14] Neither internalized homophobia nor public knowledge of sexual orientation was associated with alcohol/drug use. In the case of internalized homophobia, this result had already been corroborated,[31] although other studies revealed an association between knowledge of homo/bisexuality and use of these substances.[11,14,18] Being out about having sex with men is considered by some authors as an indicator of affiliation with gay culture,[14] and can make homo/bisexual men more vulnerable to prejudice and attacks.

Finally, and consistent with the results of other studies,[7,8,10,11,26] unprotected sex with casual partners was significantly associated with both frequent use of alcohol and drugs and with multidrug use. Furthermore, having a greater number of partners was associated with alcohol and drug use. This is consistent with the results of other studies[7,10,12] and confirms the use of substances such as poppers, ecstasy, and methamphetamine as aphrodisiacs.[15]

The present study has important limitations. First, the respondents were recruited from multiple venues and not from a probability sample; therefore, caution should be exercised in generalizing the findings to all MSM in Catalonia. However, we did try to diversify as much as possible the places, days, and times of our approach to participants in order to minimize this bias. Young people in general are underrepresented in samples recruited from gay venues. For instance, the mean age of MSM surveyed on-line in Spain in 2006 was 30.7 years.[32] In order to improve the representativeness of the sample, an Internet survey was carried out in 2008 among MSM in our setting alongside the survey in gay venues.

Furthermore, we do not know the characteristics of the men who refused to participate in the study. Secondly, the return rate of the questionnaires was not high, but it was similar to previous surveys and higher than in other studies that used similar methods.[32,33] Conducting surveys directly in gay venues could increase the response rate, and we plan to adopt this approach in our next cross-sectional study. Thirdly, we cannot exclude biases of memory and underreporting of certain risk practices or of the self-reported results of HIV infection. However, the fact that the questionnaire was anonymous and self-administered may have helped reduce this type of risk. Finally, as this is a cross-sectional study, no relationship of causality can be established between the use of alcohol/drugs and sexual risk practices.

The present study is the first to analyse in depth the intensive use of alcohol and drug use before or during sex among MSM in our setting; therefore, our results can help to guide prevention programs in Catalonia. The high percentage of MSM who use alcohol and drugs before and during sex, and the association found between multidrug use and frequent substance use and unprotected sex and the number of partners reveals the need to intensify interventions to reduce levels of use and/or associated damage and risks. Finally, in order to be efficient, these programs must try to cover MSM-specific psychosocial aspects, tackle discrimination and include prevention and support groups for HIV-positive men. In this sense, the joint work of all those involved in the setting of MSM (public administration, NGOs, STI and HIV clinics, etc.) represents the way forward in the control of HIV and other STI among MSM.

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Conflicts of interest: None declared.

Key points

- The results of this study reveal a high prevalence of alcohol and drug use before or during sex among MSM recruited in Catalonia.
- The multivariate analysis showed an association between variables of intensive alcohol and drug use and having suffered discrimination, being HIV-positive and sexual risk behaviour.
- In Catalonia, it is necessary to intensify interventions to reduce the use of alcohol and drugs and/or associated damage and risks among MSM. These programs must try to cover MSM-specific psychosocial aspects and include prevention for HIV-positive men.

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