



Sexual practices and the risk of Hepatitis A in men who have sex with men in Spain

Eduardo Ibáñez-Tomás MD, PhD Student, Nurse^{1,2}  | Àngel Gasch-Gallén PhD, Professor¹ 

¹Department of Psychiatry and Nursing, Health Sciences Faculty, University of Zaragoza, Zaragoza, Spain

²Aragón Health Service (SALUD), Miguel Servet University Hospital, Zaragoza, Spain

Correspondence

Eduardo Ibáñez-Tomás, Department of Psychiatry and Nursing, Health Sciences Faculty, University of Zaragoza, Domingo Miral s/n, 5009 Zaragoza, Aragón, Spain.
Email: eibannezt@salud.aragon.es

Abstract

Aim: To determine the frequency of and identify risk factors associated with sexual practices leading to hepatitis A infection in the population of men who have sex with men in Spain.

Background: The increased incidence of hepatitis A as a result of sexual contact among this population is a public health concern and a challenge in controlling sexually transmitted infections.

Methods: This cross-sectional, online survey-based study included 881 men who have sex with men. Unprotected oro-anal and insertive-anal sex are considered to be unsafe sexual practices associated with hepatitis A infection.

Results: Of all respondents, 83.4% engaged in insertive-anal sex and 71.3% in unprotected oro-anal sex during the previous 12 months. An association was found with sociodemographic factors [living alone (OR = 2; 95%CI = 1.13–3.35)] and contextual factors of sexual behaviour [previous diagnosis of sexually transmitted infection(s) (OR = 1.74; 95%CI = 1.15–2.61) and participating in 'chemsex' (OR = 5.15; 95%CI = 1.05–25.15)].

Conclusion: The frequency of unsafe sexual practices associated with hepatitis A among men who have sex with men in Spain is high. Interventions based on sociodemographic and contextual factors of sexual behaviour should be implemented.

Implications for Nursing Management: Nurse managers should update and incorporate the support needs of men who have sex with men and take advantage of the opportunity to implement harm reduction strategies.

KEYWORDS

hepatitis A, male homosexuality, sexual behaviour, sexually transmitted diseases, unsafe sex

1 | BACKGROUND

Men who have sex with men are vulnerable to engagement in sexual practices that increase the likelihood of the spread of sexually transmitted infections, which represents a public health concern (Glick et al., 2013; McKirnan et al., 2013).

In recent years, the transmission of hepatitis A through sexual contact has been acquiring special importance (World Health Organization, 2017), mainly in urban areas of developed countries

with a low endemicity due to a significant increase in the incidence of the disease especially among the population of men who have sex with men (ECDC, 2008; Urbanus et al., 2009). In Europe, 4,475 hepatitis A outbreaks were reported between 2016 and 2018, with 25,032 confirmed cases, mostly in men who have sex with men (Beebejaun et al., 2017; ECDC, 2018; Palareti et al., 2016). In Spain, hepatitis A is a notifiable disease. During the outbreaks, a higher number of cases than expected were reported. In 2016, 1,296 cases were diagnosed in Spain and, in 2017, this figure increased to 4,567

cases (Instituto de Salud Carlos III, 2018, 2019), but this may have been an underestimation according to the European Centre for Disease Prevention and Control (ECDC, 2018). Studies published to date have focused on determining the prevalence of high-risk behaviour within the framework of HIV surveillance and prevention (Paquette & De Wit, 2010) and identifying factors with which they are associated (Weatherburn et al., 2019). Among other studies, research areas include the use of the Internet to find sexual partners (Anzani et al., 2018), the use of psychoactive substances (Carey et al., 2009; Pialoux et al., 2017), the use of pre-exposure prophylaxis (PrEP) (Pialoux et al., 2017) and participation in 'chemsex' (Pialoux et al., 2017; Sida Studi, 2016). However, there is a greater diversity of sexual practices, which being low risk, have been studied less frequently and have contributed to underdiagnosis and the increase in sexually transmitted infections (Fisher et al., 2015). Unprotected oro-anal and insertive-anal sexual practices can facilitate the transmission of hepatitis A (Alventosa-Mateu et al., 2018; Lorenzo Ortega et al., 2018), which disproportionately affects men who have sex with men, and in turn challenges public health prevention and intervention strategies (Dirección General de Salud Pública del Gobierno de Aragón, 2017; Servicio Promoción Salud de la Consejería de Salud de la Junta de Andalucía, 2017).

The aim of the present study was to determine the frequency of and identify risk factors associated with sexual practices leading to hepatitis A infection in the population of men who have sex with men in Spain.

2 | METHODS

2.1 | Study design and participants

The present investigation was a cross-sectional descriptive study, based on a survey of the frequency and distribution of unsafe sexual practices associated with hepatitis A transmission and its relationship with different characteristics in the population of men who have sex with men in Spain.

The convenience sampling method was used. The inclusion criteria were as follows: men or individuals who identified themselves as men; age between 16 and 75 years; residents of Spain; those who declared that they had had sexual relations with other men in the previous 12 months.

2.2 | Instrument

An ad hoc survey was designed and disseminated online. It was adapted from previous questionnaires on unsafe sexual practices and their determinant used in epidemiological surveillance studies (Piera-Rojo et al., 2017; Public Health England, 2015). The questionnaire, which was anonymously recorded, collected information about sociodemographic characteristics and other variables regarding sexual behaviour of the participants.

2.3 | Data collection

The survey was available online between 12 December 2018 and 12 January 2019. It was disseminated through social networks, such as *Facebook*, with the support of non-governmental organisations dedicated to HIV prevention in Spain. Collaboration was also requested from *Grindr*, a mobile geo-social application, mainly aimed at a gay audience, which enables its users to locate and communicate with gay and bisexual men and women, as well as transgender individuals and transsexuals in the vicinity. Through their programme 'Grindr for equality' (G4E), they disseminated the message 'Make fun of Hepatitis A' for 48 hr, encouraging users to participate in the survey.

2.4 | Variables

The primary unprotected sexual practices associated with hepatitis A transmission performed during the previous 12 months were included as dependent variables. They were grouped into oro-anal sex practices ['black kiss' (sucking of the anus), face-sitting (sitting on the face) and 'felching' (sucking of semen ejaculated into the anus)] and insertive-anal practices [introduction of fingers into the anus, introduction of objects and fist-intercourse (i.e. 'fist-fucking', introduction of the fist or part of forearm into the anus)], and were dichotomized into never and sometimes/habitually.

As independent variables, those of sociodemographic nature were also included the following: country of origin (Spain and other); age (16–34 years, 35–49 years and ≥ 50 years); level of education (up to secondary school, vocational training and university); employment (employed, unemployed, student and retired); and cohabitation situation (stable partner, alone and others). In addition, variables that could determine the performance of these unsafe sexual practices were included: sexual orientation (gay/homosexual, bisexual, heterosexual and other); sexual orientation visibility (all or almost all people and none); sexual role (active/insertive, versatile and passive/receptive); sexual partner (stable partner, occasional partner and both); number of occasional partners during the previous year (1–2, 3–5, 6–10, 11–20, 21–50 and >50 partners); and sex under drug use (never and sometimes/habitually). Chemsex participation, defined as intentional sexual practices under the effect of psychoactive drugs, in a group for a prolonged duration (never and sometimes/usually), PrEP use for HIV (never and sometimes/usually), use of protection during sexual practices (always/almost always and to never/almost never) and previous diagnosis of sexually transmitted infections (no and yes) were also included.

2.5 | Statistical analysis

Data collection was performed using the *Google Forms* survey application and exported to a database in a spreadsheet (Excel, Microsoft Corporation), and all analyses were performed using SPSS version 19.0 (IBM Corporation).

First, a descriptive statistical analysis was performed using frequency and proportion tables for qualitative variables, and centralization and dispersion measures for quantitative variables. Second, a bivariate inferential analysis was performed using contingency tables by means of Pearson's chi-squared association test or the Fisher's exact test, with a statistical significance level of $p < .05$.

Finally, two binary logistic regression models were constructed, one for each of the dependent variables of the study. The independent variables that were included in the logistic regression models were those that had previously demonstrated a significance value of $p \leq .2$ in the univariate analysis with the dependent variables, and the variables that were included in the final model were those that demonstrated a level of significance of $p \leq .05$ in Wald's test. The estimator obtained was the adjusted odds ratio with corresponding 95% confidence interval. For construction of the final models, the automatic method 'backwards Wald' was used and finally adjusted by means of the manual method 'intro', retaining in the final model, variables whose elimination caused significant changes in the OR of the dependent variables ($\pm 10\%$).

3 | RESULTS

3.1 | Participant characteristics

In total, 881 men who have sex with men participated in the present study, most (72.8%) of whom were of Spanish origin, with a mean age ($\pm SD$) of 33.13 ± 10 years. More than one-half of the participants reported completing higher education (72.5%) were employed (77.4%), and 35% lived alone. The vast majority defined themselves as gay/homosexual (85.7%), and 93.4% reported that all or almost all of the people around them knew about their sexual orientation. Almost one-half of them identified themselves as versatile (49.1%), and 40.5% engaged in sexual practices with occasional partners, among whom 48.7% had more than 10 occasional partners. During the previous year, 25.8% of the participants performed sex under the effect of drugs, 10% participated in chemsex, and 7.7% used PrEP. Only 35.2% always or almost always used protection during sexual practices, and 49% reported a previous diagnosis of sexually transmitted infection(s) (Table 1).

Among participants presenting with some sexually transmitted infections, 10.4% were diagnosed with hepatitis A. Of all participants, 52.4% had been vaccinated against hepatitis A, 15.6% were vaccinated recently (since mid-2017), and 38.1% did not receive the second dose. The vaccination initiative was mostly by medical recommendation (62.1%). Among PrEP users, 30.9% believed that PrEP use protected them from hepatitis A infection (Table 2).

3.2 | Unsafe sexual practices associated with the risk of hepatitis A transmission

The most frequent sexual practices performed by the participants were insertive-anal sex ($n = 735$, 83.4%) followed by oro-anal sex

($n = 628$, 71.3%) (Figure 1). The most frequently performed practices among participants included the following: finger insertion ($n = 696$, 79%); sucking the anus ($n = 607$, 68.9%); object(s) insertion ($n = 335$, 38%); face-sitting ($n = 202$, 22.9%); fist-fucking (123, 14%); and felching ($n = 58$, 6.6%) (Figure 2).

3.3 | Unsafe sexual practices associated with the risk of hepatitis A transmission according to sociodemographic characteristics and other contextual factors of participants' sexual relations

Participants who identified themselves as gay/homosexual (72.6%, $p = .044$), made visible their sexual orientation (72.2%, $p = .040$), participated in chemsex (85.2%, $p = .003$) and used PrEP (82.4%, $p = .05$) performed oro-anal sexual practices in greater proportion. In addition, those who identified themselves as versatile (75.3%, $p < .001$) and those with both stable and occasional partners (84.4%, $p < .001$) performed these practices more frequently, these practices being observed in greater proportion among participants with higher number of partners ($p < .001$). Of all participants, 81.5% ($p < .001$) engaged in these practices under the effect of drugs and never or hardly ever protected themselves (78.8%, $p < .001$). In addition, they were observed in greater proportion among those who had been previously diagnosed with sexually transmitted infections (78.7%, $p < .001$).

Regarding insertive-anal sexual practices, participants between 35 and 49 years of age (88.9%, $p = .018$), those who were employed (85.3%, $p = .035$) and retired (85.7%, $p = .035$) practiced them more frequently. Participants who identified themselves as gay/homosexual (84.1%, $p = .006$) and those who made their sexual orientation visible (84.2%, $p = .031$) engaged in these practices more frequently. Most of the participants who performed these practices were active/insertive (90.6%, $p < .001$), and a higher frequency of these practices was observed among those who performed them with both stable and occasional partners (94.53%, $p < .001$), the frequency increasing as the number of occasional partners increased ($p < .001$). In this case, these practices were performed more frequently when drugs were used (92.1%, $p < .001$), and no protective measures were used (89.3%, $p < .001$), during participation in chemsex (93.2%, $p = .015$), and among those who had a previous diagnosis of sexually transmitted infection(s) (86.3%, $p = .028$; Table 3).

In multivariate analysis, the model adjusted for oro-anal sexual practices revealed that participants living alone among men who have sex with men exhibited twice the risk of engaging in these practices (95% CI, 1.13–3.55). The risk of engaging in these practices among participants not using protection during sex was 3.28 times greater than those who always or almost always used protection (95% CI, 2–5.4), and 1.74 times greater in those who had a previous diagnosis of sexually transmitted infection(s) than in those not previously diagnosed (95% CI, 1.15–2.61). In addition, participants who were active/insertive (OR, 1.77; 95% CI, 1.02–3.06) and

TABLE 1 Sociodemographic and sexual behaviour characteristics of participants (last 12 months)

	<i>n</i>	%
Country of Origin		
Spain	641	72.8
Other	240	27.2
Age		
16–34 years old	457	51.9
35–49 years old	261	29.6
50 years old or more	57	6.5
Level Education		
Secondary school	56	6.4
Vocational training	186	21.1
University	639	72.5
Employment		
Employed	682	77.4
Unemployed	47	5.3
Student	145	16.5
Retired	7	0.8
Cohabitation situation		
Stable partner	196	22.2
Alone	308	35
Others (Family, shared apartment)	377	42.8
Sexual orientation		
Gay/homosexual	775	85.7
Bisexual	110	12.5
Heterosexual	9	1
Other	7	0.8
Sexual orientation visibility		
All or almost all people	823	93.4
None	58	6.6
Sexual role		
Active/Insertive	244	27.7
Versatile	433	49.1
Passive/Receptive	204	23.2
Sexual partner		
Stable	73	8.3
Occasional	357	40.5
Both	316	35.9
Occasional partners' number		
1–2	81	9.2
3–5	164	18.6
6–10	188	21.3
11–20	199	22.6
21–50	124	14.1
>50	106	12

TABLE 1 (Continued)

	<i>n</i>	%
Sex under drug use ^a		
Never	654	74.2
Sometime/habitually	227	25.8
Chemsex participation		
Never	793	90
Sometimes/usually	88	10
PrEP use ^b		
Never	813	92.3
Sometimes/usually	68	7.7
Protection use ^c		
Always/almost always	310	35.2
Never/almost never	571	64.8
Previous diagnosis of STIs		
No	449	51
Yes	432	49

Note: The denominators may vary depending on the answers given by the participants.

Abbreviation: STIs, sexually transmitted infections.

^aAlcohol consumption is not included.

^bAmong the participants who consumed pre-exposure prophylaxis.

^cDuring the hepatitis A sexual practices studied.

TABLE 2 Characteristics of the participants according to hepatitis A (HA)

	<i>n</i>	%
Previous diagnosis of HA ^a		
No	387	89.6
Yes	45	10.4
HA Vaccine		
No	419	47.6
Yes	462	52.4
Recently ^b	138	15.6
Second dose of HA vaccine		
No	176	38.1
Yes	286	61.9
HA vaccination initiative		
Own initiative	175	37.9
Medical recommendation	287	62.1
HA protection by PrEP consumption ^c		
It doesn't protect me	47	69.1
It does protect me	21	30.9

Note: The denominators may vary depending on the answers given by the participants.

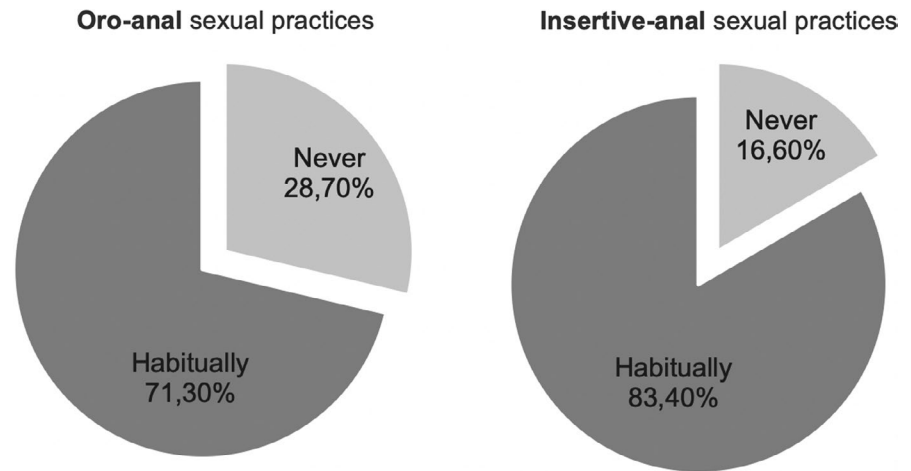
^aAmong participants diagnosed with sexually transmitted infections.

^bHepatitis A vaccinations since 2017.

^cAmong the participants who consumed pre-exposure prophylaxis.

(Continues)

FIGURE 1 Frequency of unsafe sexual practices associated with the risk of Hepatitis A transmission (last 12 months)



versatile (OR, 1.8; 95% CI, 1.10–2.96) were more likely to engage in oro-anal sex compared with passive/receptive participants. In relation to the number of casual partners, participants who declared to have a greater number of sexual partners presented a greater risk of engaging in oro-anal sex, corresponding to a risk of 2.80 (95% CI 1.21–6.46).

Regarding insertive-anal practices, being a foreigner implied a 1.81 (95% CI, 1.01–3.24) times higher risk of engaging in such practices. Identifying oneself as gay/homosexual increased the probability of engaging in this type of practice by a factor of 19.40 (95% CI, 1.99–189.27). Active/insertive and versatile participants presented 6.64 (95% CI, 2.89–15.26) and 3.98 (95% CI, 2.16–7.34) times higher risk, respectively, of practising insertive-anal sex compared with passive/receptive participants. Participants engaging in chemsex (OR, 5.15; 95% CI, 1.05–25.15) and those having > 50 casual partners (OR, 5.55; 95% CI, 1.37–22.47) presented with a higher risk of performing these practices compared with the rest of the groups (Table 4).

4 | DISCUSSION

Data from our study from an important sample reveal, for the first time, that the frequency of unsafe sexual practices associated with hepatitis A infection in men who have sex with men in Spain is high. Several studies have indicated that there is a change in the epidemiological pattern of hepatitis A and associate population of men who have sex with men with unsafe sexual behaviour that lead to hepatitis A transmission (Alventosa-Mateu et al., 2018; Lorenzo Ortega et al., 2018). Others have concluded that it is necessary to identify characteristics that make this population more vulnerable (Lorenzo Ortega et al., 2018; Urbanus et al., 2009). Our study enables us to describe the profile of men who have sex with men engaging in unsafe sexual practices that increase the risk for hepatitis A transmission, the risks of which have not yet been assessed in other studies.

Results of the present research indicate that unprotected insertive-anal sexual practices that can lead to hepatitis A transmission are performed more frequently than oro-anal sex practices.

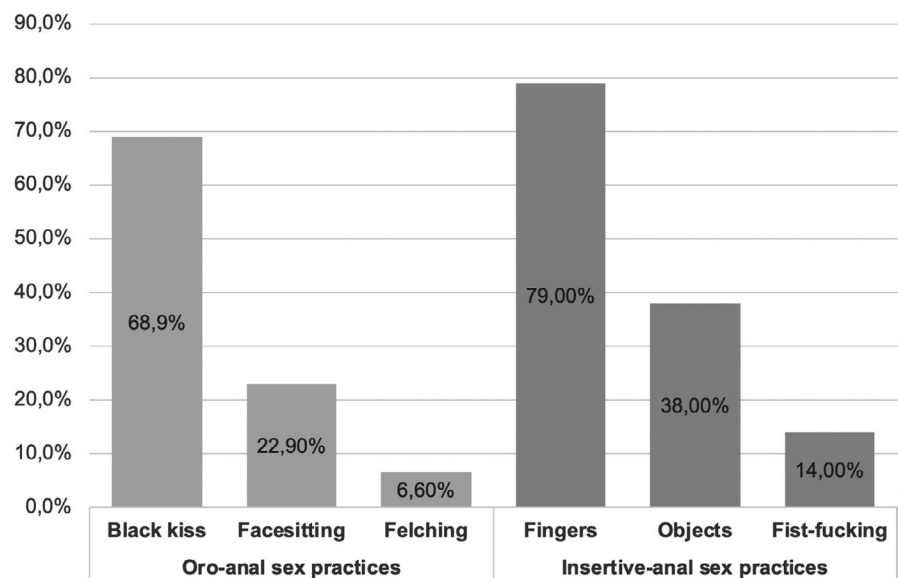


FIGURE 2 Frequency of major unsafe sexual practices associated with the risk of Hepatitis A transmission (last 12 months)

TABLE 3 Unsafe sexual practices associated with the risk of hepatitis A transmission according to sociodemographic characteristics and other contextual factors of participants' sexual relations.

	Oro-anal			Insertive-anal		
	Sometimes/habitually			Sometimes/habitually		
	<i>n</i>	%	<i>p</i> *	<i>n</i>	%	<i>p</i> *
Country of Origin						
Spain	453	70.7	.512	537	83.8	.650
Other	175	72.9		198	82.5	
Age						
16–34 years old	322	70.5	.757	336	80.1	.018
35–49 years old	195	74.7		232	88.9	
50 years old or more	38	66.7		48	84.2	
Level Education						
Secondary school	36	64.3	.496	43	76.8	.581
Vocational training	135	72.6		159	85.5	
University	457	71.5		533	83.4	
Employment						
Employed	496	72.7	.168	582	85.3	.035
Unemployed	32	68.1		37	78.7	
Student	97	66.9		110	75.9	
Retired	3	42.9		6	85.7	
Cohabitation situation						
Stable partner	134	68.4	.242	163	83.2	.190
Alone	230	74.7		266	86.4	
Others (Family, shared apartment)	264	70		306	81.2	
Sexual orientation						
Gay/Homosexual	548	72.6	.044	635	84.1	.006
Bisexuals	71	64.5		90	81.8	
Heterosexuals	4	44.4		4	44.4	
Sexual orientation visibility						
None	34	58.6	.040	42	72.4	.031
All or almost all people	594	72.2		693	84.2	
Sexual role						
Active/ Insertive	182	74.6	<.001	221	90.6	<.001
Versatile	326	75.3		379	87.5	
Passive/ Receptive	120	58.8		135	66.2	
Sexual partner						
Stable	47	64.4	<.001	59	80.8	<.001
Occasional	282	79		316	88.5	
Both	262	84.4		298	94.3	
Occasional partners number						
1–2	45	55.6	<.001	60	74.1	<.001
3–5	106	64.6		131	79.9	
6–10	139	73.9		163	86.7	
11–20	148	74.4		168	84.4	
21–50	97	78.2		104	83.9	
>50	85	80.2		99	93.4	

(Continues)

TABLE 3 (Continued)

	Oro-anal			Insertive-anal		
	Sometimes/habitually			Sometimes/habitually		
	<i>n</i>	%	<i>p</i> *	<i>n</i>	%	<i>p</i> *
Sex under drug use						
Never	443	67.7	<.001	526	80.4	<.001
Sometime/habitually	185	81.5		209	92.1	
Chemsex participation						
Never	553	69.7	.003	653	82.3	.015
Sometimes/usually	75	85.2		82	93.2	
PrEP use						
Never	572	70.4	.05	676	83.1	.548
Sometimes/usually	56	82.4		59	86.8	
Protection use						
Always/almost always	178	57.4	<.001	225	72.6	<.001
Never/almost never	450	78.8		510	89.3	
Previous diagnosis of STIs						
No	288	64.1	<.001	362	80.6	.028
Yes	340	78.7		373	86.3	

Abbreviations: Chemsex, intercourse intentionally under the consumption of psychoactive drugs in groups and for long periods of time; PrEP, human immunodeficiency virus pre-exposure prophylaxis; STIs, sexually transmitted infection.

**p* value: Pearson's Chi-square test and Fisher's exact test statistical significance $p < .05$.

In addition, it has been identified that factors associated with both practices vary according to the type of practice performed.

The participation and proportion of participants, according to their sociodemographic characteristics, are similar to those obtained in similar research investigating risk behaviour in men who have sex with men in Spain (Folch et al., 2014; Gasch-Gallén et al., 2015). In our study, the socioeconomic variables of country of origin and cohabitation were associated with unsafe sexual practices associated with hepatitis A infection. One study aimed to identify factors associated with unprotected anal intercourse and observed how different sociodemographic variables were associated. The authors concluded that factors vary according to the type of sexual partner. For example, population size, educational level and employment status were risk factors affecting engagement in unprotected anal intercourse with a steady partner, and age ≥ 25 years was a protective factor for unprotected anal intercourse with both steady and casual partners. They found no association between country of origin and the sexual practices studied (Folch et al., 2014). However, in our study, we found an association with the country of origin of the participants, specifically foreigners, demonstrated a greater risk of engagement in insertive-anal sexual practices. Another study analysed the association between socioeconomic variables and receptive and insertive unprotected anal intercourse and bareback 'sexual intercourse that is performed without a condom in a premeditated and intentional way'. As was shown by the results, factors associated with the sexual practices analysed varied according to the practice and the type of

sexual partner. Cohabitation is a risk factor when living with a stable partner and performing receptive and insertive unprotected anal intercourse, in addition to performing more bareback (Gasch-Gallén et al., 2015). Our study also revealed that cohabitation was associated with oro-anal sexual practices, while demonstrating greater risk among those living alone.

According to current evidence regarding sexually transmitted infections, sexual role and number of casual partners (Enguix Grau, 2000; Folch et al., 2014) were associated with unsafe sexual intercourse. The differences in our study lie in the fact that versatile participants engaged more frequently in sexual practices of the oro-anal type, while the active participants performed the insertive-anal type practices more frequently; these results are in accordance with the imaginary of the sexual role described (Enguix Grau, 2000; Matud & Aguilera, 2009). In relation to the number of occasional partners, we found that our results were consistent with those reported in another study (Folch et al., 2014), noting that the greater the number of partners, the greater the risk of engagement in unsafe sexual practices.

Insertive-anal practices are also determined by sexual orientation and participation in chemsex. Although it has been observed that these practices are performed in a greater proportion by gays/homosexuals, it is bisexuals who exhibit a greater risk for pursuing them. Other published data show discrepancies with our result, associating bisexuality with a lower risk for performing unprotected anal intercourse with an occasional partner (Folch et al., 2014). Regarding chemsex, several studies confirm that this phenomenon is practiced by a minority (6.4%)

TABLE 4 Factors associated with unsafe sexual practices of hepatitis A transmission

	Oro-anal			Insertive-anal		
	Sometimes/habitually			Sometimes/habitually		
	OR	(95%CI)	<i>p</i>	OR	(95%CI)	<i>p</i>
Country of Origin						
Spain	-	-	-	1		
Other	-	-	-	1.81	(1.01-3.24)	.046
Employment						
Employed	-	-	-	1		
Unemployed	-	-	-	0.29	(0.11-0.73)	.287
Student	-	-	-	1.05	(0.49-2.27)	1.051
Retired	-	-	-	-	-	-
Cohabitation situation						
Stable partner	1					
Alone	2	(1.13-3.55)	.017	-	-	-
Others (Family, shared apartment)	1.58	(0.93-2.68)	.093	-	-	-
Sexual orientation						
Heterosexual	-	-	-	1		
Gay/homosexual	-	-	-	19.4	(1.99-189.27)	.011
Bisexual	-	-	-	26.16	(2.24-306.08)	.009
Sexual role						
Passive/receptive	1			1		
Active/insertive	1.77	(1.02-3.06)	.041	6.64	(2.89-15.26)	<.001
Versatile	1.8	(1.10-2.96)	.02	3.98	(2.16-7.34)	<.001
Sexual partner						
Stable	1			1		
Occasional	0.99	(0.51-1.93)	.992	1.02	(0.45-2.34)	.957
Both	1.73	(0.90-3.53)	.105	2.22	(0.91-5.42)	.080
Occasional partners number						
1-2	1			1		
3-5	1.14	(0.56-2.30)	.724	1.42	(0.58-3.51)	.445
6-10	2.08	(1.01-4.32)	.049	3.68	(1.39-9.79)	.009
11-20	2.12	(1.01-4.47)	.048	3.06	(1.17-8)	.023
21-50	2.8	(1.21-6.46)	.016	1.64	(0.62-4.39)	.32
>50	1.83	(0.80-4.19)	.154	5.55	(1.37-22.47)	.016
Chemsex participation						
Never	-	-	-	1		
Sometime/habitually	-	-	-	5.15	(1.05-25.15)	.043
Protection use						
Always/almost always	1					
Never/almost never	3.28	(2-5.4)	<.001	-	-	-
Previous diagnosis of STIs						
No	1					
Yes	1.74	(1.15-2.61)	.008	-	-	-

Note: *p* value: statistical significance of Wald's test $p < .05$.

Abbreviations: (95%CI), 95% confidence interval; Chemsex, Intercourse intentionally under the consumption of psychoactive drugs, in groups and for long periods of time; OR, odds ratio; PrEP, human immunodeficiency virus pre-exposure prophylaxis; STIs, sexually transmitted infection.

(Pujol et al., 2016), that there is an upward trend, and that it is associated with the performance of unsafe sexual intercourse increasing the risk of sexually transmitted infections (Carey et al., 2009; Matud & Aguilera, 2009; Pialoux et al., 2017). Our results reveal an increasing trend in recent years, up to 10% of participation, and that it is associated with a higher risk for engaging in anal intercourse.

Not using protection during intercourse was demonstrated to be associated with oro-anal sexual practices. This suggests the need for interventions adapted to different types of sexual practices; this is reinforced by another factor, a previous diagnosis of sexually transmitted infection(s). In our study sample, one-half of the participants reported having previous sexually transmitted infection(s), similar to that reported by a study, which also reported that a previous diagnosis of sexually transmitted infection was associated with unprotected anal intercourse with an occasional partner (Folch et al., 2014).

Other investigations have found that the use of geolocation applications and websites (Anzani et al., 2018), drug use (Carey et al., 2009; Pialoux et al., 2017; Tomkins et al., 2019) and PrEP (Pialoux et al., 2017) are associated with risky sexual behaviour, in addition to being associated with engagement in chemsex and a greater number of casual partners. However, in our study, we found an association only between chemsex and insertive-anal sexual practices. For the rest of the variables, no association was found with the sexual practices studied, although they were observed in a higher proportion among those who had sex under the effect of drugs and among PrEP users.

4.1 | Limitations

Our study had limitations that were related to the type of sampling for convenience or intentionality because the census population of men who have sex with men in Spain is unclear; therefore, the results cannot be generalized to the national population. In contrast, we found under-represented categories, which was the result of online dissemination of information on our study and participant recruitment; as such, many men who have sex with men without access to the Internet and/or use of geolocation applications are under-represented. Furthermore, the use of an online questionnaire may have resulted in under-reporting of sexual behaviour to match social desirability. Finally, since this was a cross-sectional study, a causal relationship between the variables analysed and the sexual practices associated with risk for hepatitis A transmission cannot be established.

5 | CONCLUSION

This research, one of the first that we know in our context, provides useful information that enables us to describe the profile of men who have sex with men engaging in sexual practices increasing the risk of hepatitis A transmission in Spain. It should be noted that unprotected oro-anal and insertive-anal sex are practices that are

engaged in with a high frequency among men who have sex with men, and that, although they are considered to be low-risk practices, they do not exempt these individuals from exposure to sexually transmitted infection(s).

Despite public health measures, such as vaccination, hepatitis A outbreaks continue to be observed among men who have sex with men, because these campaigns are not complemented by personal and community prevention tools (Gasch-Gallén et al., 2018). Finally, it should be noted that factors, such as sexual role, a high number of occasional partners, together with having a foreign origin, living alone, participating in chemsex, having previous diagnosis of sexually transmitted infection(s) and not using protection during the sexual practices that were analysed, should be incorporated into harm- and risk-reduction strategies focused on self-care and, thus, complement the current vaccination programmes in this population.

6 | IMPLICATIONS FOR NURSING MANAGEMENT

This study described the frequency of and identified factors associated with unsafe sexual practices associated with hepatitis A transmission in men who have sex with men, specifically sociodemographic factors and contextual factors of sexual behaviour. Nurse managers need to study the specific health concerns of sexual and gender minority populations, such as men who have sex with men, and act on their support needs. The results of this research can be used to develop personal and community prevention interventions, directed and developed by nursing personnel, aimed at reducing sexually transmitted infections among men who have sex with men and protecting their health. Nursing managers have the opportunity to lead and implement harm-reduction strategies in this population. Promoting hygiene measures, behavioural interventions and peer education can be helpful in reducing the risk factors associated with unsafe sexual practices increasing the risk of hepatitis A transmission. Further studies are needed to develop and evaluate various harm-reduction strategies and interventions that reduce the risks of hepatitis A and other sexually transmitted infections in men who have sex with men.

ACKNOWLEDGEMENTS

To the non-governmental organisations dedicated to the prevention of HIV in Spain to the Federación Estatal de Lesbianas, Gais, Transexuales y Bisexuales (FELGTB); to OMSIDA Zaragoza; and to the Coordinadora Estatal de VIH-SIDA (CESIDA) for their collaboration in the dissemination and support of research. To the Grindr for equality programme (G4E) for disseminating the questionnaire and for encouraging and promoting research on their social networks. To the respondents for their generous and disinterested contribution to the study.

CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTIONS

E. Ibáñez-Tomás and À. Gasch-Gallén involved in the study concepts and design, collected the data, analysed the data and wrote manuscript.

ETHICAL APPROVAL

The study was approved by the Research Ethics Committee of the Government of Aragon (CEICA, C.P.-C.I. PI18/327).

ORCID

Eduardo Ibáñez-Tomás  <https://orcid.org/0000-0002-4321-8769>

Àngel Gasch-Gallén  <https://orcid.org/0000-0002-3087-8899>

REFERENCES

- Alventosa-Mateu, C., Urquijo-Ponce, J. J., & Diago-Madrid, M. (2018). Brote de hepatitis aguda por virus hepatitis A en 2017. ¿Estamos asistiendo a un cambio en los factores de riesgo de contagio? *Revista Española De Enfermedades Digestivas*, 38(1110), 675–676. <https://doi.org/10.17235/reed.2018.5633/2018>
- Anzani, A., Di Sarno, M., & Prunas, A. (2018). Using smartphone apps to find sexual partners: A review of the literature. *Sexologies*, 27(3), e61–e65. <https://doi.org/10.1016/j.sexol.2018.05.001>
- Beebejaun, K., Degala, S., Balogun, K., Simms, I., Woodhall, S. C., Heinsbroek, E., Crook, P. D., Kar-Purkayastha, I., Treacy, J., Wedgwood, K., Jordan, K., Mandal, S., & Ngui, S. L., Edelstein, M. (2017). Outbreak of hepatitis A associated with men who have sex with men (MSM), England, July 2016 to January 2017. *Eurosurveillance*, 22(5), 1–6. <https://doi.org/10.2807/1560-7917.ES.2017.22.5.30454>
- Carey, J. W., Mejia, R., Bingham, T., Ciesielski, C., Gelaude, D., Herbst, J. H., Stall, R. (2009). Drug use, high-risk sex behaviors, and increased risk for recent HIV infection among men who have sex with men in Chicago and Los Angeles. *AIDS and Behavior*, 13(6), 1084–1096. <https://doi.org/10.1007/s10461-008-9403-3>
- Dirección General de Salud Pública del Gobierno de Aragón (2017). *Asunto: Medidas a adoptar ante brote de hepatitis a en población hsh / encuentros del orgullo*. Retrieved from https://www.aragon.es/documentos/20127/674325/DGSP_05_2017_Circular_Vacunacion_Hep_A_HSH_2017_Aragon.pdf/c0823b00-3fe0-1483-f49b-098d6abd16dd/
- ECDC (2008). *Technical meeting on hepatitis A outbreak response*, (November). Retrieved from https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/0811_MER_Hepatitis_A_Outbreak_Response.pdf
- ECDC (2018). *Epidemiological update: Hepatitis A outbreak in the EU/EEA mostly affecting men who have sex with men*. Retrieved from <https://www.ecdc.europa.eu/en/news-events/epidemiological-update-hepatitis-outbreak-eueea-mostly-affecting-men-who-have-sex-men-2>
- Enguix Grau, B. (2000). Sexualidad e identidades: Identidades homosexuales. *Gazeta De Antropologia*, 16, 19–26.
- Fisher, M., Wayal, S., Smith, H., Llewellyn, C., Alexander, S., Ison, C., Parry, J. V., Singleton, G., Perry, N., Richardson, D., & Brighton Home Sampling Kit Project Steering Group (2015). Home sampling for sexually transmitted infections and HIV in men who have sex with men: A prospective observational study. *PLoS One*, 10(4), 1–10. <https://doi.org/10.1371/journal.pone.0120810>
- Folch, C., Fernández-Dávila, P., Ferrer, L., Soriano, R., Díez, M., & Casabona, J. (2014). High-risk sexual behaviour by partner type among men who have sex with men. *Enfermedades Infecciosas Y Microbiología Clínica*, 32(6), 341–349. <https://doi.org/10.1016/j.eimc.2013.09.017>
- Gasch-Gallén, Á., Obón-Azuara, B., & Tomás-Aznar, C. (2018). Suitability of selective interventions in multitudinal events. *Gaceta Sanitaria*, 32(5), 498–499. <https://doi.org/10.1016/j.gaceta.2017.07.017>
- Gasch-Gallén, À., Tomás-Aznar, C., & Rubio-Aranda, E. (2015). Type of partner, socio-economic factors and risk practices in men who have sex with men. *Gaceta Sanitaria*, 29(6), 412–418. <https://doi.org/10.1016/j.gaceta.2015.07.001>
- Glick, S. N., Morris, M., Foxman, B., Aral, S. O., Manhart, L. E., Holmes, K. K., & Golden, M. R. (2013). Sex with men and heterosexual men and women. *Journal of Acquired Immune Deficiency Syndromes*, 60(November 2009), 83–90. <https://doi.org/10.1097/QAI.0b013e318247925e.A>
- Instituto de Salud Carlos III. (2018). *Enfermedades de Declaración Obligatoria. Casos notificados por Comunidades Autónomas y Tasas por 100.000 Habitantes. España 2016*. Retrieved from https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Documents/INFORMES/OTROSINFORMES/RENAVE_EDO_2016.pdf
- Instituto de Salud Carlos III. (2019). *Enfermedades de Declaración Obligatoria. Casos notificados por Comunidades Autónomas y Tasas por 100.000 Habitantes. España 2017*. Retrieved from https://www.isciii.es/QueHacemos/Servicios/VigilanciaSaludPublicaRENAVE/EnfermedadesTransmisibles/Documents/INFORMES/OTROSINFORMES/RENAVE_EDO_2017.pdf
- Lorenzo Ortega, R., O'Donnell Cortés, B., Ortiz González Serna, R., Gallardo García, V., & López Hernández, B. (2018). Cambios en el patrón epidemiológico de la Hepatitis A en Andalucía: 2007–2017. *Revista Española De Salud Pública*, 92, e201805016.
- Matud, M. P., & Aguilera, L. (2009). Roles sexuales y salud mental en una muestra de la población general española. *Salud Mental*, 32(1), 53–58.
- McKirnan, D. J., Du Bois, S. N., Alvy, L. M., & Jones, K. (2013). Health care access and health behaviors among men who have sex with men: the cost of health disparities. *Health Education and Behavior*, 40(1), 32–41. <https://doi.org/10.1177/1090198111436340>
- Palareti, G., Legnani, C., Cosmi, B., Antonucci, E., Erba, N., Poli, D., & Tosetto, A. (2016). Comparison between different D-Dimer cut-off values to assess the individual risk of recurrent venous thromboembolism: Analysis of results obtained in the DULCIS study. *International Journal of Laboratory Hematology*, 38(1), 42–49. <https://doi.org/10.1111/ijlh.12426>
- Paquette, D., & De Wit, J. (2010). Sampling methods used in developed countries for behavioural surveillance among men who have sex with men. *AIDS and Behavior*, 14(6), 1252–1264. <https://doi.org/10.1007/s10461-010-9743-7>
- Pialoux, G., Hamidi, M., Danet, M., Chas, J., Lebrette, M., & Haneche, F. (2017). Incidence des infections sexuellement transmissibles (IST) et impact de la consommation de nouvelles drogues de synthèse en contexte sexuel (CHEMSEX) dans une consultation PrEP Étude d'incidence de la Borréliose de Lyme en Alsace, l'étude ALSA. *Medecine Et Maladies Infectieuses*, 47(4), S11. <https://doi.org/10.1016/j.medmal.2017.03.031>
- Piera-Rojo, G., Prado-González, E., Morano-Vázquez, A.-M.-A.-L. (2017). *Estandarización de la metodología de vigilancia epidemiológica de la Hepatitis A: Cuestionario EVA (Epidemiologic Surveillance for HAV). Rickettsiosis. Historia y Actualidades*. Retrieved from <https://www.elsevier.es/es-revista-enfermedades-infecciosas-microbiologia-clinica-28-contenido-extra-60>
- Public Health England (2015). *Hepatitis A national surveillance questionnaire*. Retrieved from <https://www.gov.uk/government/publications/hepatitis-a-case-questionnaire>
- Pujol, F., Meulbroek, M., Dalmu-bueno, A., Perez, F., Saz, J., Coll, P., Aidabo, E. (2016). *Chemsex en la cohorte Barcelona Checkpoint: un fenómeno con tendencia al alza asociado a un aumento del riesgo de infección por VIH*. Retrieved from <http://www.sidastudi.org/resources/inmagic-img/DD39808.pdf>
- Servicio Promoción Salud de la Consejería de Salud de la Junta de Andalucía (2017). *Vacúnate frente a la Hepatitis A. Campaña específica*

- en *Hombres que tienen sexo con hombres*. Retrieved from https://www.juntadeandalucia.es/export/drupaljda/2018_07_05_Instrucción_HA_DEF.pdf
- Sida Studi (2016). *Aproximación al chemsex en españa 2016*, 37. Retrieved from <http://www.sidastudi.org/resources/inmagic-img/DD45725.pdf>
- Tomkins, A., George, R., & Kliner, M. (2019). Sexualised drug taking among men who have sex with men: A systematic review. *Perspectives in Public Health*, 139(1), 23–33. <https://doi.org/10.1177/1757913918778872>
- Urbanus, A. T., van Houdt, R., van de Laar, T. J., & Coutinho, R. A. (2009). Viral hepatitis among men who have sex with men, epidemiology and public health consequences. *Euro Surveillance*, 14, 1–5. <https://doi.org/10.2807/es.14.47.19421-en>
- Weatherburn, P., Hickson, F., Reid, D. S., Marcus, U., & Schmidt, A. J. (2019). European men-who-have-sex-with-men internet survey (EMIS-2017): design and methods. *Sexuality Research and Social Policy*, 45, 271–282. <https://doi.org/10.1007/s13178-019-00413-0>
- World Health Organization (2017). *Hepatitis A outbreaks mostly affecting men who have sex with men – European Region and the Americas, 2017–2019*. Retrieved from <http://www.who.int/csr/don/07-june-2017-hepatitis-a/en/>

How to cite this article: Ibáñez-Tomás E, Gasch-Gallén À. Sexual practices and the risk of Hepatitis A in men who have sex with men in Spain. *J Nurs Manag*. 2020;00:1–11. <https://doi.org/10.1111/jonm.13179>