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Associations with drug use and sexualised drug use among women who have sex with women (WSW) in the UK: Findings from the LGBT Sex and Lifestyles Survey

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Abstract

Introduction: Studies indicate that women who have sex with women (WSW) report greater levels of drug use than heterosexual women, but globally few studies have looked at sexualised drug use among WSW. This study investigated the factors associated with drug use and sexualised drug use (SDU) among WSW.

Methods: Potential participants across the UK were invited to take part in a cross-sectional anonymous online survey between April-June 2018. The LGBT Sex and Lifestyles survey recruited participants through Facebook advertising and social media posts from community organisations. Multivariate logistic regression was used to compare WSW who had engaged in any drug use in the past 12 months with those who had not, and those who engaged in sexualised drug use in the past 12 months with those who engaged in other drug use.

Results: 1,501 WSW could be included in the analyses (mean age=28.9, 97% white ethnicity). Any drug use was reported by 39% of WSW (n=583), 44% of which (17% of total, n=258) reported SDU. Factors associated with drug use were identifying as queer (aOR=1.86, 95%CI 1.08, 3.23), younger age (aOR=0.96, 95%CI 0.95, 0.98), being born outside the UK (aOR=1.75, 95%CI 1.15, 2.66), recent sexual assault (aOR=2.35, 95%CI 1.43, 3.86), >=5 female sexual partners (aOR=3.81, 95%CI 1.81, 8.01), and psychological distress (aOR=1.75, 95%CI 1.15, 2.67). SDU was associated with identifying as bisexual (aOR=2.55, 95%CI 1.69, 3.86), >=5 female sexual partners (aOR=4.50, 95%CI 1.91, 10.59), and highest education achieved at 16 or lower (aOR=2.46, 95%CI 1.24, 4.90).

Conclusions: Some WSW may have negative experiences in relation to drug use and SDU. Harm reduction and health services that provide services for WSW should be aware of potentially compounding factors related to drug use, such as sexual assault and psychological distress, providing a safe and LGBT-friendly environment to discuss these issues.

Keywords: Women who have sex with women; Drug use; Sexualised drug use; Sexual health.

Introduction

In Europe, North America, and Australasia, lesbian, gay and bisexual (LGB) people report higher rates of substance use and mental health conditions compared to heterosexual people (King et al., 2008). In the UK, a national survey found that gay and bisexual women were more likely to report engaging in illicit drug use in comparison to heterosexual women (23% vs. 5%)(ONS, 2014). Young adults in the UK who identify as gay, lesbian or bisexual have reported more binge drinking, solvent use, cannabis and other drug use compared to heterosexual young adults, and those who identified as bisexual were more likely to report worse physical functioning, health satisfaction, and overall life satisfaction (Booker, Rieger, & Unger, 2017). However, data were not available by gender and specific to women who have sex with women (WSW). Among lesbian, bisexual and queer women in Australia, women who identified as queer or bisexual reported a higher proportion of recent illicit drug use, and higher proportions of sexual coercion since 16 years old compared to women who identified as lesbian/gay (Germanos, Deacon, & Mooney-Somers, 2015).

Studies on drug use among LGBT people have often focused on men who have sex with men (MSM), with much of this research into alcohol and drug use related to substances used in a sexual and/or party context (Bourne & Weatherburn, 2017). Most recently, research has focused on the rise of chemsex as a public health issue (Stuart, 2013). Chemsex (sometimes referred to as 'party and play') is a particular form of sexualised drug use among MSM that involves men engaging in sex with other men for long periods of time, with multiple partners, and taking crystal methamphetamine, γ-hydroxybutyrate/ γ-butyrolactone (GHB/GBL), mephedrone, cocaine and/or ketamine immediately before or during sex (Bourne, Reid, Hickson, Torres Rueda, & Weatherburn, 2014). However, both sexualised drug use and chemsex are not exclusively observed among MSM (Mohammed et al., 2016). A UK survey of people who inject drugs found that WSW were more likely than heterosexual

women to report use of those drugs associated with chemsex among MSM, such as non-injected mephedrone and non-injected ketamine use, however, it was not asked if this was sexualised drug use (Heinsbroek, Glass, Edmundson, Hope, & Desai, 2018). In Australia, sexualised drug use has been observed among WSW, with 8% of those using methamphetamine, 9% of those using ecstasy, and 10% of those using cocaine having taken these drugs before or during sex (Mooney-Somers, Deacon, Scott, Price, & Parkhill, 2018).

The focus on MSM and sexualised drug use/chemsex is appropriate considering the associated sexual risks (Bourne et al., 2014; Glynn et al., 2018; Hegazi et al., 2017), but little is known about drug use and sexualised drug use among WSW, and the effect this may have on physical and mental wellbeing (Desai, Bourne, Hope, & Halkitis, 2018). A study in the USA found that women who identify as heterosexual but have had a recent female partner were more likely to binge drink, use cannabis and cocaine, and more likely to engage in sex with a man while under the influence of cannabis or cocaine compared to exclusively heterosexual women (Bauer, Jairam, & Baidoobonso, 2010). Among women attending a sexual health clinic in Chicago, lesbian women had a greater odds of alcohol and drug use in the past 12 months. However, when controlling for age and race, bisexual women had greater odds of drug use at last sex act compared to heterosexual women (Estrich, Gratzer, & Hotton, 2014). Research among lesbian, gay and bisexual youth found reporting a greater number of sexual partners was associated with cannabis use, however, drug use was not specified to be during sex, and data were not available specific to WSW (Zhang & Wu, 2017).

Internalised homophobia and discrimination based on sexuality can impact on behaviours leading to increased risk and poor health outcomes (Meyer, 2003). However, the association between substance use and discrimination or internalised homophobia is unclear, with some studies having found associations among LGB women (Lehavot & Simoni, 2011), whilst another study found that the use cocaine, crystal methamphetamine, GHB, ketamine or

speed among LGB men and women was not associated with discrimination or greater internalised homophobia (Lea, de Wit, & Reynolds, 2014). Qualitative interviews with gay men engaging in chemsex found that internalised homophobia and the intense sexual experience of chemsex were motivations for engagement (Weatherburn, Hickson, Reid, Torres-Rueda, & Bourne, 2017).

Very little research exists internationally regarding sexualised drug use among WSW, and therefore the extent, nature and factors associated with this are not understood. This research aims to investigate drug use and sexualised drug use among WSW in the UK, comparing psychosocial and sexual factors among WSW who have not engaged in any drug use with those that have engaged in drug use, and those that have engaged in sexualised drug use with those that have engaged in drug use.

Methods

The LGBT Sex and Lifestyles Survey was a cross-sectional online questionnaire aimed at LGBT people in the UK. Ethical approval for this study was obtained from the LJMU Research Ethics Committee. A convenience sample was obtained using sponsored Facebook advertising and advertisments on social media via relevant LGBT organisations. Four LGBT organisations promoted the survey on their social media accounts and four sponsored adverts were run on Facebook for 6 weeks between April and June 2018, targeting MSM, WSW, trans people, or LGBT people generally. Facebook users were shown the sponsored advert for the "Sex and Lifestyles Survey" if they engaged with one or more MSM, WSW, trans or LGBT topics on Facebook. Participants were invited to take part in the survey if they had ever had a sexual partner of the same gender and/or they identified as trans. Participants were then directed to the online survey, and asked two screening questions, stating that they were aged 18 or over, and currently living in the UK. To aid recruitment

participants were offered entry into a prize draw to win a £50 Amazon voucher, or one of two £25 Amazon vouchers.

Measures

The questionnaire was divided into three areas: demographics, sexual health and drug use, and psychological wellbeing. Participants were categorised as WSW if they identified as female and stated they had sex with women. There were five answer options for sexual identity (lesbian/homosexual; bisexual; queer; in another way, please specify; or prefer not to say). Sexual health questions were adapted from research on similar topics (Mercer et al., 2016; Weatherburn et al., 2013). Questions that were adapted for use with WSW were those on the number of sexual partners, condom use (if having sex with men), and on health service use. Aligned with previous research, drug use and sexualised drug use was asked with regards to specific drugs and individual drugs were listed rather than grouped, as this is likely to elicit more accurate reporting (Ryan et al., 2018). Participants were first asked if they had taken any of the 14 listed substances in the past 12 months. Sexualised drug use was grouped as participants who had stated they had been under the influence of cannabis during sex in the past 12 months or stated having taken amphetamine, cocaine, crack cocaine, ecstasy, heroin, GHB/GBL, ketamine, mephedrone, methamphetamine, Viagra or other erectile dysfunction drug, poppers, or another unspecified drug just before or during sex in the past 12 months. A further grouping was created for the drugs associated with chemsex, which included those reporting the use GHB/GBL, ketamine, mephedrone and/or methamphetamine just before or during sex. Chemsex drugs were looked at separately to allow comparison with the extent of their use within other groups, and because of the risk associated with use GHB/GBL, ketamine, and methamphetamine, such as, overdose and loss of consciousness. Questions regarding motivations for engaging in sexualised drug use and sex under the influence of

alcohol were adapted from motivations and attitudes towards chemsex questions (Glynn et al., 2018).

A question that has been used in a primary care setting was used to assess whether participants had experienced any sexual contact that was not consensual (Coxell, King, Mezey, & Gordon, 1999). This was adapted after a discussion with an LGBT sexual violence charity to the following: "In the past 12 months has a person(s) done sexual things to you or made you do sexual things without your consent?" Participants could respond "Yes", "No", "Not sure" or "Prefer not to say".

Psychological wellbeing was measured using a variety of previously validated scales. The Internalised Homophobia scale (Herek, Cogan, Gillis, & Glunt, 1998) was used to measure internalised stigma among WSW (Cronbach's alpha=0.86). In line with the categorisation used in the scale development, if a participant responded strongly disagree or disagree to any question they were categorised as having high internalised homophobia. Discrimination based on sexuality was measured within the past 12 months across a number of settings, and was categorised as any discrimination based on sexuality in the past 12 months (Burgess, Tran, Lee, & van Ryn, 2007). The Objectified Body Consciousness scale (Hyde & McKinley, 2006) was used to measure body image satisfaction, where higher scores indicated greater body dissatisfaction (Cronbach's alpha=0.90). A 3-item loneliness scale developed for use in long questionnaires was used (Hughes, Waite, Hawkley, & Cacioppo, 2004), where higher scores indicated higher feelings of loneliness (Cronbach's alpha=0.82). The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) measured life satisfaction, with higher scores indicating higher life satisfaction (Cronbach's alpha=0.90). The Kessler Psychological Distress Scale (Andrews & Slade, 2001) was used to measure psychological distress (Cronbach's alpha=0.94), and scores were categorised into

normal (<=15), moderate (16-21), high (22-29) and very high (30-50), as in previous research (Stallman, McDermott, Beckmann, Kay Wilson, & Adam, 2010).

Statistical Analysis

The varaibles included in the analyses were demographics, sexual behaviours and psychological factors such as internalised homophobia, experiences of discrimination and psychologcial distress. These were chosen to reflect factors associated with drug use among LGBT people in previous studies. We also postulated that sexualised drug use might be assocaited with population density, as previous studies of MSM indicate that sexualised drug use may be more common among urban poluations (Hibbert, Brett, Porcellato, & Hope, 2019). All analyses were conducted using SPSS 25. Forward stepwise multivariate logistic regression analyses were used to explore factors associated with engaging in drug use compared to not engaging in drug use, and factors associated with engaging in sexualised drug use as opposed to drug use (entry $p=0.05$, removal $p=0.10$). Factors approaching significant at the univariate level ($p<0.10$) were included in the multivariate model. Descriptive chi-square and Fisher-exact test analyses were used to compare motivations for and effects of engaging in, intentional sexualised drug use, sex under the influence of cannabis, and sex under the influence of alcohol.

Results

Of the 4,690 surveys started, 53 participants were excluded for not living in the UK, 43 participants were excluded for being under 18, and 1,014 did not complete the survey sufficiently to be included in analyses (completion rate of 78%). The median time taken to complete the survey was 12 minutes. Of the 3,676 participants included, 1,513 participants were identified as WSW, and 1,506 WSW completed the drug use and sex questions to be included in the analysis. Five WSW identified as heterosexual and were not included in the

analysis. WSW who completed the survey were more likely to be in a relationship than those who did not (72% vs. 59%, p<0.01), but did not differ on any other demographic variables where data were avaliable. Over half of the 1,501 WSW identified as homosexual/gay/lesbian (56%), 97% were of white ethnicity, 29% were single/not in a relationship, the mean age was 28.9 (*SD = 9.4*, range 18-73), and two thirds reported high or very high levels of psychological distress. Seven percent of WSW reported sexual contact without consent in the past 12 months, the majority of which identified as bisexual (56%, p<0.001).

The majority of participants had drank alcohol in the past 12 months (94%), and 67% of these (63% of total sample) had engaged in sex under the influence of alcohol. Figure 1 displays data regarding prevalance of drugs taken and sexualised drug use among WSW. Because no WSW reported taking crystal methamphetamine, it was not included in the chemsex drug group. Overall, 39% of WSW reported taking a drug in the last 12 months, 44% of these (17% of the total sample) reported engaging in sexualised drug use. Women reporting sexualised drug use were more likely to report having sex with both men and women, compared to women only (25% vs. 11%, p<0.001). The drug most commonly taken generally and sexually was cannabis (33% and 14% respectively). Over one-quarter of cocaine users (46/163) and one-fifth of ecstacy users (24/113) reported taking the drug just before or during sex. The most commonly used drug associated with chemsex was ketamine (n=36, 2%), followed by mephedrone (n=6, 0.4%) and GHB/GBL (n=3, 0.2%). Of those who had taken a chemsex related drug, 22% (n=9/41) reported taking that drug just before or during sex. Of the nine WSW who reported sexualised use of a chemsex related drug, seven reported having sex with both men and women.

Table 1 displays the univariate and multivariate analyses for the psychosocial and sexual factors associated with engaging in drug use compared to no drug use. Due to the strong association between psychological wellbeing measures, only psychological distress

was included in the multivariate analyses due to this measuring recent feelings of distress (past 30 days). The factors associated with engaging in drug use with the highest odds ratios were having greater than or equal to 5 women sexual partners in the past 12 months, and experiencing sexual contact without consent in the past 12 months. Other factors associated with engaging in drug use were identifying as queer, having a country of birth outside of the UK, living in more densly populated areas, having 2-4 women sexual partners in the past 12 months, and having high or very high levels of psychological distress. Increases in age was associated with a reduced liklihood of reported drug use.

These analyses were repeated to examine factors associated with sexualised drug use compared to drug use (Table 2). Factors that were associated of sexualised drug use were identifying as bisexual or in another way, highest level of education qualifications at age 16 or lower, and having 2 or more sexual partners in the past 12 months. Being single was associated with reduced likelihood of engaging in sexualised drug use.

Figure 2 compares the motivations for and effects of intentional sexualised drug use, sex under the influence of cannabis, and sex under the influence of alcohol. WSW who reported intentional sexualised drug use were more likely to report doing so because it gives an intense sexual experience and allows them to have sex for longer. WSW who reported engaging in sexualised drug use and those who reported engaging in sex under the influence of alcohol were more likely to report doing things they would not do sober.

Figure 1. Prevalence of drugs use and sexualised drug use among WSW.

Table 1. Univariate and multivariate analysis for factors associated with drug use in the past 12 months among WSW.

	No drugs taken (n=918)		Taken drugs (n=583)			Univariate	Adjusted model
	n or *mean*	% or *SD*	n or *mean*	% or *SD*	Row %	OR (95% CI)	aOR (95% CI)
Sexuality							
Lesbian/homosexual	550	60%	297	51%	35%	ref.	ref.
Bisexual	276	30%	217	37%	44%	1.46 (1.16, 1.83)	1.17 (0.90, 1.53)
Queer	35	4%	45	8%	56%	2.38 (1.50, 3.79)	1.86 (1.08, 3.23)
In another way	57	6%	24	4%	30%	0.78 (0.47, 1.28)	0.57 (0.32, 1.03)
Age	*30.6*	*10.0*	*26.4*	*7.8*		*0.95 (0.94, 0.96)*	*0.96 (0.95, 0.98)*
Ethnicity							
White	897	98%	560	96%	38%	ref.	
Person of colour	20	2%	23	4%	53%	1.84 (1.00, 3.39)	
Country of Birth							
UK	829	90%	509	87%	38%	ref.	ref.
Not UK	67	7%	61	10%	48%	1.48 (1.03, 2.13)	1.75 (1.15, 2.66)
Education							
University or higher	517	56%	298	51%	37%	ref.	
Qualifications at 18	280	31%	226	39%	45%	1.40 (1.12, 1.76)	
Qualifications at 16 or lower	96	10%	50	9%	34%	0.90 (0.62, 1.31)	
Work Status							
Full time	526	57%	249	43%	32%	ref.	
Part time	108	12%	67	11%	38%	1.31 (0.93, 1.84)	
Student	152	17%	181	31%	54%	2.52 (1.93, 3.27)	
Unemployed	23	3%	16	3%	41%	1.47 (0.76, 2.83)	
Other (sick leave, retired, carer)	96	10%	66	11%	41%	1.45 (1.03, 2.06)	
Relationship status							
Living with partner	433	47%	193	33%	31%	ref.	
Relationship not living with partner	228	25%	170	29%	43%	1.67 (1.29, 2.17)	
Relationship with multiple	25	3%	19	3%	43%	1.71 (0.92, 3.17)	
Single	231	25%	201	34%	47%	1.95 (1.51, 2.52)	
Population density per hectare							
<5	244	27%	142	25%	37%	ref.	ref.
5 - 20	283	31%	150	26%	35%	0.91 (0.68, 1.21)	0.90 (0.65, 1.25)
20 - 41	220	24%	145	25%	40%	1.13 (0.84, 1.52)	1.12 (0.81, 1.57)
>41	162	18%	140	24%	46%	1.49 (1.09, 2.02)	1.47 (1.04, 2.10)
Internalized homophobia							
Low	636	69%	355	61%	36%	ref.	
High	259	28%	221	38%	46%	1.53 (1.23, 1.91)	
Discrimination sexuality in the past 12 months							
None	486	53%	273	47%	36%	ref.	
Any setting	406	44%	288	49%	41%	1.26 (1.02, 1.56)	
Sexual contact without consent in the past 12 months							
No	861	94%	488	84%	36%	ref.	ref.
Yes	31	3%	70	12%	69%	3.98 (2.57, 6.17)	2.35 (1.43, 3.86)
Unsure	14	2%	17	3%	55%	2.14 (1.05, 4.38)	1.45 (0.59, 3.58)
Number of women sexual partners in the past 12 months							

0-1	774	85%	415	71%	35%	ref.	ref.
2-4	129	14%	136	23%	51%	1.97 (1.50, 2.57)	1.81 (1.33, 2.43)
>=5	13	1%	32	5%	71%	4.59 (2.38, 8.84)	3.81 (1.81, 8.01)
Perceived health							
Fair/good/very good	779	85%	462	79%	37%	ref.	
Very poor/poor	139	15%	121	21%	47%	1.47 (1.12, 1.92)	
Psychological distress							
Normal	149	16%	48	8%	24%	ref.	ref.
Moderate	200	22%	93	16%	32%	1.44 (0.96, 2.17)	1.17 (0.74, 1.85)
High	226	25%	145	25%	39%	1.99 (1.35, 2.93)	1.66 (1.07, 2.56)
Very high	334	36%	289	50%	46%	2.69 (1.87, 3.86)	1.75 (1.15, 2.67)
Body satisfaction	*41.3*	*13.3*	*43.9*	*12.1*		*1.02 (1.01, 1.02)*	
Loneliness score	*5.3*	*1.7*	*5.8*	*1.8*		*1.20 (1.13, 1.28)*	
Satisfaction with life	*21.3*	*7.2*	*19.4*	*7.4*		*0.97 (0.95, 0.98)*	

Table 2. Univariate and multivariate analyses for factors associated with sexualised drug use in the past 12 months compared to drug use among WSW.

	Taken drugs (n=323)		Sexualised drug use (n=260)			Univariate	Adjusted model
	n or *mean*	% or *SD*	n or *mean*	% or *SD*	Row %	OR (95% CI)	aOR (95% CI)
Sexuality							
Lesbian/homosexual	188	58%	109	42%	37%	ref.	ref.
Bisexual	101	31%	116	45%	53%	1.98 (1.39, 2.83)	2.55 (1.69, 3.86)
Queer	25	8%	20	8%	44%	1.38 (0.73, 2.60)	1.30 (0.64, 2.67)
In another way	9	3%	15	6%	63%	2.88 (1.22, 6.79)	3.17 (1.22, 8.21)
Age	*26.7*	*8.0*	*25.9*	*7.5*		*0.99 (0.97, 1.01)*	
Ethnicity							
White	311	96%	249	96%	44%	ref.	
Person of colour	12	4%	11	4%	48%	1.15 (0.50, 2.64)	
Country of Birth							
UK	286	89%	223	86%	44%	ref.	
Not UK	30	9%	31	12%	51%	1.33 (0.78, 2.26)	
Education							
University or higher	174	54%	124	48%	42%	ref.	ref.
Qualifications at 18	124	38%	102	39%	45%	1.15 (0.81, 1.64)	1.13 (0.76, 1.68)
Qualifications at 16 or lower	19	6%	31	12%	62%	2.29 (1.24, 4.24)	2.46 (1.24, 4.90)
Work Status							
Full time	149	46%	100	38%	40%	ref.	
Part time	37	11%	30	12%	45%	1.21 (0.70, 2.08)	
Student	99	31%	82	32%	45%	1.23 (0.84, 1.82)	
Unemployed	7	2%	9	3%	56%	1.92 (0.69, 5.31)	
Other (sick leave, retired, carer)	29	9%	37	14%	56%	1.90 (1.10, 3.29)	
Relationship status							
Living with partner	107	33%	86	33%	45%	ref.	ref.
Relationship not living with partner	82	25%	88	34%	52%	1.34 (0.88, 2.02)	0.75 (0.46, 1.20)
Relationship with multiple	6	2%	13	5%	68%	2.70 (0.98, 7.39)	1.00 (0.30, 3.30)
Single	128	40%	73	28%	36%	0.71 (0.47, 1.06)	0.31 (0.18, 0.52)
Population density per hectare							
<5	77	24%	65	25%	46%	ref.	
5 - 20	87	27%	63	24%	42%	0.86 (0.54, 1.36)	
20 - 41	80	25%	65	25%	45%	0.96 (0.61, 1.53)	
>41	77	24%	63	24%	45%	0.97 (0.61, 1.55)	
Internalized homophobia							
Low	197	61%	158	61%	45%	ref.	
High	122	38%	99	38%	45%	1.01 (0.72, 1.42)	
Discrimination sexuality in the past 12 months							
None	158	49%	115	44%	42%	ref.	
Any setting	153	47%	135	52%	47%	1.21 (0.87, 1.69)	
Sexual contact without consent in the past 12 months							
No	280	87%	208	80%	43%	ref.	
Yes	31	10%	39	15%	56%	1.69 (1.02, 2.81)	
Unsure	9	3%	8	3%	47%	1.20 (0.45, 3.15)	
Number of women sexual partners in the past 12 months							

0-1	250	77%	165	63%	40%	ref.	ref.
2-4	61	19%	75	29%	55%	1.86 (1.26, 2.75)	2.96 (1.83, 4.79)
>=5	12	4%	20	8%	63%	2.53 (1.20, 5.30)	4.50 (1.91, 10.59)
Perceived health							
Fair/good/very good	263	81%	199	77%	43%	ref.	
Very poor/poor	60	19%	61	23%	50%	1.34 (0.90, 2.01)	
Psychological distress							
Normal	31	10%	17	7%	35%	ref.	ref.
Moderate	61	19%	32	12%	34%	0.96 (0.46, 1.99)	0.79 (0.36, 1.72)
High	89	28%	56	22%	39%	1.15 (0.58, 2.26)	1.14 (0.55, 2.39)
Very high	135	42%	154	59%	53%	2.08 (1.10, 3.93)	1.77 (0.88, 3.59)
Body satisfaction	*42.7*	*12.6*	*45.6*	*11.3*		*1.02 (1.01, 1.03)*	
Loneliness score	*5.7*	*1.8*	*6.0*	*1.8*		*1.10 (1.01, 1.21)*	
Satisfaction with life	*20.0*	*7.4*	*18.7*	*7.3*		*0.97 (0.95, 1.00)*	

Figure 2. Motivations for and effects of engaging in sex under the influence of alcohol, cannabis, or intentional sexualised drug use.

Discussion

The aim of this research was to investigate drug use and sexualised drug use among WSW, and found variation in the types of drugs and sexualised drugs used, which has not previously been investigated. Sexualised drug use was common among WSW when considering the use of a wide range of drugs in a sexual context, and the most common drug used was cannabis. Higher levels of ecstasy and cocaine use for sex were observed in this sample when compared to research among Australian LBQ women (Mooney-Somers et al., 2018), however no women in the current research reported taking methamphetamine, regardless of whether it was for sexual purposes. When considering intentional sexualised drug use, reported motivations for engaging in this were similar to those reported among MSM, such as giving an intense sexual experience and having sex for longer (Weatherburn et al., 2017). Similar to previous research, the use of drugs associated with chemsex was reported among WSW (Heinsbroek et al., 2018), and we found evidence that these drugs were sometimes being used in a sexual context among WSW, albeit by a very small proportion (<1%), particularly when compared to MSM, one in 17 of whom report sexualised use of chemsex associated drugs (Hibbert et al., 2019).

Overall, 7% of participants reported experiencing sexual assault, and this was associated with drug use. This could be that drug use is a coping mechanism used by WSW who experience sexual assault, or that WSW who engage in drug use are more likely to experience sexual assault, as they may be more vulnerable when under the influence of drugs. In univariate analyses, WSW engaging in sexualised drug use were more likely to report experiencing sexual assault compared to those engaging in non-sexualised drug use, but this was not significant in multivariate analyses, possibly because the majority of women experiencing sexual assault were bisexual, similar to previous research (Germanos et al., 2015). It is not clear whether the sexual assault related to male or female partners, and due to

the sensitive nature of the topic, it is ethically challenging to collect event-level detail regarding sexual assault. A broad measure of sexual assault was used in our study as diverse populations were being recruited into the LGBT Sex and Lifestyles Survey and to avoid a focus on penetrative assault, which limits our exploration of the nature of these assaults. Future research is needed to fully understand this association between drug use and sexual assault, and support services need to be available for WSW who experience sexual assault.

Engaging in drug use was associated with an increasing number of recent female sexual partners, and engaging in sexualised drug use was further associated with the number of recent female sexual partners. Sexualised drug use was mostly under the influence of cannabis, which reflects previous research among LGB youth that found an association between cannabis use and number of sexual partners (Zhang & Wu, 2017). However, the current research found this association specifically among WSW and when measuring drug use in a sexual context.

Discrimination and internalised homophobia were associated with drug use in univariate analyses, which is similar to previous research (Lehavot & Simoni, 2011). However, possibly due to the association between these issues and psychological distress, this effect was not observed in the multivariate analysis. Discrimination and internalised homophobia were not associated with sexualised drug use among those taking drugs in this study.

Similar to previous research, identifying as queer was found to be associated with drug use (Germanos et al., 2015). Previous research has also found that bisexual men and women were more likely to engage in drug use (Booker et al., 2017). The current study did not find such an association between drug use overall identifying as bisexual, but WSW identifying as bisexual were more likely to report sexualised drug use compared to general

drug use in the multivariate analysis. Similarly, research has previously found that bisexual women were more likely to have reported sex under the influence of drugs with a man compared to heterosexual women (Bauer et al., 2010; Estrich et al., 2014). Due to the exploratory nature of this study and the need to have a concise questionnaire for ease of completion, limited event-level data was collected for WSW reporting sexualised drug use, and so we are unable to further explore risk. The impact of sexualised drug use on WSW sexual health will be dependent upon the gender of their sexual partner and the type of sex they were having. Therefore, future research on this topic should seek to gain event-level data, such as partner's gender and details of sexual practices.

Heterosexual identifying WSW were excluded from this study due to small numbers. However, previous research has found heterosexual identifying WSW were more likely to engage in drug use and sexualised drug use (Bauer et al., 2010). The small number of participants in this group is probably reflective of the Facebook advertising used to recruit participants, as people had to engage with LGBT content on Facebook to be shown the advert, which heterosexual identifying WSW may be less likely to do. Future studies should consider the use of other recruitment approaches to reach more heterosexual identifying WSW, and sexual health clinics may have a role to play due to their focus on collecting sexual history rather than identity. Similarly, the vast majority of participants were white, which could reflect the limitations of social media for recruitment. Whilst a higher proportion of WSW of colour engaged in drug use, this was not significant. Representation from LGBT people of colour has been noted as an issue in other UK-based LGBT research (McNeil, Bailey, Ellis, Morton, & Regan, 2012). Future research should aim to be more reflective of WSW of colour to investigate this further, and reflect the lives and experiences of all WSW. Despite the slightly young age of the sample, again probably due to using Facebook for

recruitment, being of a younger age was still associated with drug use among WSW, similar to previous research (Booker et al., 2017).

As noted above our study has a number of limitations. There is limited data on the size and nature of the LGBT population in the UK, so it is difficult assess the representativeness of the sample. The LGBT Sex and Lifestyles Survey sample when compared to the UK general population, under represents some ethnic minorities and older people. However, online surveys are a well-established approach for sampling from LGBT populations in the UK and other higher income countries. Our sampling approach which used a social networking site and community organisations, may be more robust than those used in many other studies which have focus on recruitment through geospatial dating apps, as those in mutually exclusive relationships are probably less likely to use these apps. Finally, our study relied on self-report measures, though where possible standardised tools and questions were used, responses may still be subject to recall bias.

In conclusion, WSW may have a range negative experiences in relation to drug use and sexualised drug use, specifically greater psychological distress and experiences of sexual assault. Mental health services in the UK should be aware of potentially compounding issues among WSW engaging in drug use and sexualised drug use. Due to the lack of research around drug use and especially sexualised drug use among WSW globally, we recommend that future drug research be inclusive of WSW to explore these experiences further, including the role of sexual identity and attempt to find if there are any causal associations. Additionally, the sexual health implications of sexualised drug use among WSW should be assessed by collecting event-level data regarding the partner's gender and the specific sexual behaviours. Research in this area tends to describe itself as LGBT but does not usually represent all LGBT people, or where all LGBT people are included, data are not available by gender. Health services that come into contact with WSW such as sexual health clinics, drug

and alcohol centres, and counselling services, should be aware of potentially compounding factors related to drug use among WSW, such as sexual assault and psychological distress, and provide patient-centred care so as to permit open discuss of these issues, in addition to an LGBT-friendly environment.

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