

Psychosocial and sexual factors associated with recent sexual health clinic attendance and HIV testing among trans people in the UK

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ABSTRACT

Objectives Trans people remain an understudied population in the UK, with unmet sexual health needs. The aim of this research was to identify possible barriers and facilitators for sexual health clinic attendance and HIV testing among trans people.

Methods Lesbian, gay, bisexual and transgender (LGBT) participants from across the UK were invited to take part in a cross-sectional online survey through Facebook advertising (April–June 2018). Psychosocial and sexual factors associated with recent sexual health clinic attendance, and ever having an HIV test were examined using multivariate logistic regression.

Results A total of 3007 cisgender and 500 trans participants completed the survey. Trans participants were less likely to attend a sexual health clinic than cisgender participants (27% vs 36%, $p < 0.001$) and report ever having an HIV test (49% vs 64%, $p < 0.001$). One trans participant reported living with HIV and three reported currently taking pre-exposure prophylaxis. Factors associated with trans sexual health clinic attendance were: living in London, having a relationship with multiple partners, engaging in condomless anal intercourse, greater life satisfaction, and having alcohol and/or drugs before sex. Being a person of colour, aged 25–49 years, in a relationship with multiple partners, condomless anal intercourse, lower body dissatisfaction, and having drugs before sex were associated with ever having an HIV test among trans participants.

Conclusions Trans people were less likely to attend sexual health services than cisgender people, and half of trans participants who reported condomless anal intercourse had never had an HIV test. Further research is needed to understand and improve uptake of sexual health services among trans people.

Key messages

- ▶ Uptake of sexual health services by trans people in the UK is low, suggesting trans people's sexual health needs are not currently being met.
- ▶ Over half of trans participants that had recent condomless anal intercourse had not attended a sexual health service in the same time period.
- ▶ Trans participants were more likely to report experiences of discrimination in healthcare and other settings, and poorer psychological well-being compared with cisgender participants.

INTRODUCTION

The factors affecting trans people's use of sexual health services are poorly understood, even though this group has need for such services.¹ A global review estimated the HIV prevalence among trans women worldwide to be 19.1%, although this may reflect elevated risks (eg, antiretroviral therapy access, survival sex work) in the countries included (USA, Asia-Pacific region, Latin America and three European countries).¹ However, outreach testing among trans women in the USA indicated a high prevalence (12%) of undiagnosed HIV.² Research into trans people's sexual health has been limited by the historic grouping of trans women with men who have sex with men (MSM), as well as the limited inclusion of trans people in health programmes, and HIV epidemiological research.^{3 4}

Trans is an umbrella term, referring to anyone whose current gender differs from the gender assigned them at birth, such as transgender, trans male, trans

female, genderqueer and non-binary people (as well as anyone's identity that differs from the traditional cultural male-female binary).⁵ The term cisgender refers to anyone whose current gender is the same as that assigned at birth.

Studies that have examined sexual risk and HIV testing among trans people indicate significant risks and HIV testing uptake problems. In Ontario, Canada over half of trans men surveyed identified as MSM, with around 10% engaging in high-risk sexual behaviours, and 40% never having an HIV test.⁶ HIV testing was more common among those accessing a community outreach project in London, although 15% of trans people had never tested, and 25% had not tested in the past 3 years, while over half reported unprotected sex, and knowledge of post-exposure prophylaxis (PEP) and pre-exposure prophylaxis (PrEP) was low.⁷

Reasons suggested for trans sexual health inequalities include mental health issues, stigma and discrimination, social isolation, economic difficulties, and unmet needs for trans-specific healthcare services.⁸ Trans people in the UK have a high incidence of mental health issues, with one study indicating half may have mild to major depression.⁹ It was also found that high levels of body dissatisfaction have been reported among trans people and this influenced how they viewed themselves and sex, although transition was related to improved body satisfaction.⁹

Stigma that trans people face include structural (eg, gender conformity, healthcare access barriers), interpersonal (eg, discrimination, hate crimes) and individual (eg, internalisation of stigma, avoidance behaviours) factors, and contribute to the health inequalities they experience.¹⁰ Research investigating the stigma experienced by people living with HIV found that being trans was a predictor of receiving different treatment or healthcare being delayed or refused compared with cisgender participants, and more likely to report avoiding healthcare.¹¹ The UK National LGBT Survey conducted in 2017 found fewer trans participants (17%) had accessed sexual health services than cisgender participants (29%), and they were less likely to report these services as easy or very easy to access, and more likely to report a negative experience when accessing services.¹²

Qualitative interviews with Canadian trans men who identify as MSM found that trans-specific and general barriers, low perceived risk, and a lack of knowledge of trans healthcare needs were barriers to HIV and sexually transmitted infection (STI) testing.¹³ Conversely, a USA study found gender-specific discrimination was associated with sexual risk behaviours, but not HIV testing among trans people.¹⁴ A literature review on trans women and HIV identified a lack of UK data and research,¹⁵ which is concerning considering trans people in England are twice as likely to be diagnosed with HIV at a late stage than cisgender people.¹⁶ Research into barriers and psychosocial factors

affecting access to sexual healthcare and HIV testing for trans people is needed to inform health promotion.

This study examined the sexual and psychosocial factors associated with recent sexual health clinic attendance and HIV testing among trans people in the UK, to identify barriers to access.

METHODS

Participants

The LGBT Sex and Lifestyles Survey was a national UK online cross-sectional study conducted in 2018, recruiting a convenience sample using Facebook advertising and community organisations' social media accounts,^{17 18} approved by the Liverpool John Moores University Research Ethics Committee (18/PHI/011). Four adverts were run on Facebook during the period April–June 2018, targeting MSM, women who have sex with women (WSW), trans people, or LGBT (lesbian, gay, bisexual and transgender) people generally. Participants were invited to take part in the survey if they had ever had a same-gender sexual partner and/or they identified as trans. Screening questions asked if participants were aged 18 years or over and currently living in the UK. A prize draw for a £50 or one of two £25 Amazon vouchers was offered as an incentive.

Measures

The questionnaire covered three areas: demographics, sexual health and drug use, and psychological well-being. An adapted version of a two-stage gender monitoring question was used to identify participants' gender, which was revised through discussions between Public Health England and community organisations for HIV monitoring in England.¹⁶ Participants were asked which of the following best describes how you think of yourself: male (including trans man); female (including trans woman); non-binary; in another way, please specify; and prefer not to say. This was followed by asking if their gender identity is the same as the gender they were assigned at birth. Participants were classified as trans if they specified that their current gender was different to the gender they were assigned at birth. Participants were grouped as cisgender if they stated their current gender was the same as the gender they were assigned at birth.

Sexual health questions were adapted from research on similar topics.^{19 20} Participants were asked if they had attended a sexual health/genitourinary medicine clinic in the past 12 months and when they last had an HIV test. Those who reported ever having an HIV test were compared with those who had never tested. Participants were asked if they had taken any of 14 drugs in the past 12 months. They were then asked if they had been under the influence of these during sex or had taken them immediately before or during sex, with use of any substance, other than alcohol, grouped as sex under the influence of drugs.

Internalised transphobia (referred to as self-stigma), the negative attitudes a trans person may hold towards themselves and other trans people due to internalising society's male/female gender norms,²¹ was measured using an adapted version of the Internalised Transphobia Scale, where higher scores indicate higher levels of self-stigma.²¹ Trans participants were asked if they had experienced discrimination because of their gender in various settings in the past 12 months, using established questions adapted to account for more modern situations of discrimination, and for use with LGBT people.²² If a participant did not identify as heterosexual, they were asked if they had experienced discrimination because of their sexuality in the same settings. The Objectified Body Consciousness scale was used to measure body image satisfaction,²³ where higher scores indicate higher body dissatisfaction. A three-item loneliness scale,²⁴ the Satisfaction With Life Scale (SWLS),²⁵ and the Kessler Psychological Distress Scale,²⁶ were used to assess psychological well-being.

Statistical analysis

All analyses were conducted using SPSS 25 (IBM Corp., Armonk, NY, USA). Forward stepwise multivariate logistic regression analyses were used to explore factors associated with recent sexual health clinic attendance, and reporting ever having an HIV test (entry $p < 0.05$, removal $p > 0.10$). Factors significant at the univariate level ($p < 0.05$) were included in the multivariate analysis.

Patient and public involvement

LGBT organisations were involved in the survey design, participant recruitment, and interpretation of the findings.

RESULTS

Of the 4690 people who started the survey, 96 did not meet the inclusion criteria, and 1087 did not sufficiently complete the questionnaire (completion rate 75%, $n = 3507$). There were 500 (14%) trans participants. Trans participants were younger, had lower educational achievement, and were less likely to live with a partner or in London than the cisgender participants (table 1). A minority of trans participants identified as straight/heterosexual (6%), the majority were of white ethnicity (95%), and mean age was 27.1 (SD 9.6, range 18–71) years. One participant reported living with HIV (trans man), and three were taking PrEP (trans man, trans woman, and non-binary trans man (self-identified)).

Of the trans participants, 81% reported psychological distress levels rated as high/very high. Trans participants were more likely to have poor/very poor perceived health, greater psychological distress, higher loneliness scores, body dissatisfaction, and lower satisfaction with life than cisgender participants (table 2). Trans participants were also more likely to experience

discrimination in a medical setting, and in other settings.

Trans participants were significantly less likely to have attended a sexual health clinic in the past 12 months than cisgender participants (table 1). There was no significant difference in sexual health clinic attendance of trans participants by gender. Table 3 presents the bivariate and multivariate analyses of factors associated with sexual health clinic attendance. Due to the strong correlation between loneliness and satisfaction with life ($R = 0.48$, $p < 0.001$), and the association between anal intercourse with a man, and condomless anal intercourse with a man, only satisfaction with life and condomless anal intercourse were included in the multivariate analysis. Factors associated with sexual health clinic attendance among trans participants were: having a relationship with multiple partners, living in London, condomless anal intercourse with a man in the past 12 months, having sex under the influence of alcohol, having sex under the influence of drugs, and having greater life satisfaction. Being unemployed was not associated with sexual health clinic attendance.

Trans participants were significantly less likely to report ever having an HIV test than cisgender participants (table 1). There was no significant difference in reporting ever having an HIV test between trans participants by gender. Factors associated with ever having an HIV test among trans participants were: being aged 25–49 years, being a person of colour, being in a relationship with multiple partners, engaging in condomless anal intercourse with a man, having sex under the influence of drugs, and lower body dissatisfaction score (table 4).

DISCUSSION

Understanding how psychological, social and sexual characteristics impact on trans people's use of sexual health clinics and uptake of HIV testing is important for reducing inequalities in service access. Similar to previous research, we found trans people were less likely to report recent sexual health clinic attendance than cisgender people who are lesbian, gay or bisexual.¹² While those engaging in sexual risk-taking behaviours are more likely to attend a sexual health clinic, over half of trans participants who had recently engaged in condomless anal intercourse had not attended a sexual health clinic.

Unlike previous qualitative research,¹³ but similar to quantitative research from the USA,¹⁴ no directly trans-specific barriers to attending sexual health services such as experiences of discrimination or self-stigma were observed when controlling for other variables. However, in the bivariate analysis, trans people who had experienced discrimination in a healthcare setting were more likely to have reported sexual health clinic attendance, though it is possible that this was where they experienced the discrimination, this may have been experienced elsewhere.^{11 12} Similarly, self-stigma

Table 1 Demographics of trans participants by gender identity and cisgender participants

Demographic	Trans men (n=147)		Trans women (n=88)		Non-binary (n=244)		In another way (n=21)		Trans total (n=500)		Cisgender total (n=3007)	
	n	%	n	%	n	%	n	%	n	%	n	%
Sexuality***												
Gay/lesbian/homosexual	28	19	17	19	57	23	3	14	105	21	2228	74
Bisexual	40	27	31	35	39	16	3	14	113	23	592	20
Straight/heterosexual	14	10	11	13	5	2	0	0	30	6	6	0.2
Queer	37	25	8	9	81	33	5	24	131	26	92	3
Asexual	7	5	4	5	19	8	3	14	33	7	9	0.3
In another way	21	14	16	18	43	18	7	33	87	17	79	3
Has sex with***												
Men	104	71	56	64	137	56	12	57	309	62	2138	71
Women	100	68	65	74	188	77	12	57	365	73	1590	53
Non-binary	71	48	45	51	164	67	12	57	292	58	437	15
Age band (years)***												
18–24	96	65	31	35	123	50	10	48	260	52	1020	34
25–34	35	24	19	22	83	34	8	38	145	29	1193	40
35–49	13	9	26	30	33	14	2	10	74	15	619	21
50+	3	2	10	11	4	2	1	5	18	4	170	6
Ethnicity												
White	143	97	86	98	227	93	18	86	474	95	2889	96
Person of colour	4	3	2	2	15	6	3	14	24	5	114	4
Country of birth												
UK	133	90	78	89	205	84	16	76	432	86	2634	88
Not UK	8	5	3	3	29	12	3	14	43	9	307	10
Education***												
University or higher	46	31	37	42	121	50	8	38	212	42	1741	58
Qualifications at 18 years	79	54	35	40	103	42	8	38	225	45	898	30
Qualifications at 16 years or lower	19	13	12	14	16	7	3	14	50	10	296	10
Work status***												
Full-time	38	26	37	42	80	33	9	43	164	33	1774	59
Part-time	17	12	12	14	22	9	4	19	55	11	276	9
Student	51	35	15	17	70	29	2	10	138	28	550	18
Unemployed	15	10	6	7	19	8	1	5	41	8	85	3
Other (sick leave, retired, carer)	24	16	17	19	46	19	5	24	92	18	298	10
Relationship status***												
Living with partner	35	24	22	25	71	29	7	33	135	27	1175	39
Relationship not living with partner	45	31	21	24	65	27	5	24	136	27	680	23
Relationship with multiple	6	4	5	6	21	9	2	10	34	7	69	2
Single	61	41	40	45	87	36	7	33	195	39	1079	36
Location**												
Outside London	136	93	78	89	228	93	15	71	457	91	2643	88
London	8	5	8	9	14	6	6	29	36	7	347	12
Country*												

Continued

Table 1 Continued

Demographic	Trans men (n=147)		Trans women (n=88)		Non-binary (n=244)		In another way (n=21)		Trans total (n=500)		Cisgender total (n=3007)	
	n	%	n	%	n	%	n	%	n	%	n	%
England	112	76	69	78	181	74	19	90	381	76	2423	81
Northern Ireland	1	1	3	3	5	2	0	0	9	2	91	3
Scotland	20	14	12	14	34	14	1	5	67	13	310	10
Wales	11	7	2	2	22	9	1	5	36	7	166	6
Recent sexual health clinic attendance***	42	29	17	20	68	29	5	25	132	27	1075	36
Ever had an HIV test***	65	45	44	50	124	51	11	52	224	49	1051	64

Significance between cisgender and trans participants.

*p<0.05 **p<0.01 ***p<0.001.

was negatively associated with sexual health clinic attendance and HIV testing in bivariate, but not the multivariate, analyses. Future research is needed to explore these issues and their implications.

Unemployment appeared to be a barrier to sexual health clinic attendance for trans participants, possibly reflecting the higher levels of social and economic isolation they experience, as well as the lack of trans-specific services.⁸ Similarly, participants living in London were more likely to report clinic attendance, probably reflecting an inequality in the distribution of trans-specific services, as London has one of the UK's few trans specific sexual health services.²⁷ Those with higher life satisfaction were more likely to report sexual health service attendance, but 80% of trans people had high or very high psychological distress levels, and high levels

of mental health issues have been previously reported among trans people in the UK,⁹ which may contribute to trans people not engaging with sexual health services.

Previous research has suggested trans women have a high HIV prevalence compared with other at-risk groups.¹ Only one participant, a trans man, reported living with HIV in this study. Over half the participants reported never being tested for HIV, which may indicate a number of trans people living with undiagnosed HIV, similar to the high level of undiagnosed HIV observed in the USA.² The proportion of participants never tested for HIV was higher than in a previous UK study,⁷ which looked at community-based HIV testing at sex-on-premises venues, where people may be more likely to have had an HIV test. Additionally, trans people aged 25–49 years were more likely to

Table 2 Comparison of psychosocial variables between trans and cisgender participants

Psychosocial variable	Trans (n=500)		Cisgender (n=3007)	
	n or mean	% or SD	n or mean	% or SD
Psychological distress***				
Normal (≤15)	28	6%	550	18%
Moderate (16–21)	63	13%	648	22%
High (22–29)	123	25%	761	25%
Very high (30–50)	279	56%	1016	34%
Perceived health***				
Fair/good/very good	357	71%	2594	86%
Very poor/poor	143	29%	413	14%
Discrimination medical setting past 12 months***				
No	381	76%	2769	92%
Yes	113	23%	128	4%
Discrimination other setting past 12 months***				
No	145	29%	1593	53%
Yes	349	70%	1304	43%
Body dissatisfaction*	43.3	12.1	41.9	12.5
Loneliness***	6.3	1.7	5.5	1.7
Satisfaction with life***	17.2	7.1	20.6	7.3

*p<0.05, **p<0.01, ***p<0.001.

Table 3 Bivariate and multivariate analyses of factors associated with sexual health clinic attendance in the past 12 months among trans people

Factor	Did not attend a sexual health clinic (n=356)		Attended a sexual health clinic (n=132)			Univariate	Multivariate
	n or mean	% or SD	n or mean	% or SD	Row %	OR (95% CI)	aOR (95% CI)
Gender							
Trans man	102	29%	42	32%	29%	Ref.	
Trans woman	68	19%	17	13%	20%	0.61 (0.32 to 1.15)	
Non-binary	171	48%	68	52%	28%	0.97 (0.61 to 1.52)	
In another way	15	4%	5	4%	25%	0.81 (0.28 to 2.37)	
Age group (years)							
18–24	183	51%	67	51%	27%	Ref.	
25–34	101	28%	42	32%	29%	1.14 (0.72 to 1.79)	
35–49	59	17%	15	11%	20%	0.69 (0.37 to 1.31)	
50+	11	3%	7	5%	39%	1.74 (0.65 to 4.67)	
Ethnicity							
White	339	95%	125	95%	27%	Ref.	
Person of colour	15	4%	7	5%	32%	1.27 (0.50 to 3.18)	
Country of birth							
UK	319	90%	113	86%	26%	Ref.	
Not UK	29	8%	14	11%	33%	1.36 (0.70 to 2.67)	
Education							
University or higher	144	40%	64	48%	31%	Ref.	
Qualifications at 18 years	165	46%	53	40%	24%	0.72 (0.47 to 1.11)	
Qualifications at 16 years or lower	35	10%	15	11%	30%	0.96 (0.49 to 1.90)	
Work status							
Full-time	116	33%	45	34%	28%	Ref.	Ref.
Part-time	37	10%	17	13%	31%	1.18 (0.61 to 2.31)	1.46 (0.65 to 3.26)
Student	101	28%	35	27%	26%	0.89 (0.53 to 1.50)	0.99 (0.52 to 1.89)
Unemployed	36	10%	3	2%	8%	0.22 (0.06 to 0.73) [†]	0.13 (0.03 to 0.69) [†]
Other (sick leave, retired, carer)	63	18%	23	17%	27%	1.06 (0.60 to 1.89)	1.37 (0.66 to 2.83)
Relationship status							
Living with partner	102	29%	32	24%	24%	Ref.	Ref.
Relationship not living with partner	96	27%	37	28%	28%	1.23 (0.71 to 2.13)	1.16 (0.60 to 2.27)
Relationship with multiple partners	13	4%	19	14%	59%	4.66 (2.07 to 10.47) ^{***}	6.75 (2.42 to 18.78) ^{***}
Single	145	41%	44	33%	23%	0.97 (0.57 to 1.63)	1.26 (0.65 to 2.46)
Location							
Outside London	333	94%	115	87%	26%	Ref.	Ref.
London	16	4%	17	13%	52%	3.08 (1.51 to 6.29) ^{**}	3.63 (1.44 to 9.13) ^{**}
Discrimination medical setting past 12 months							
No	255	72%	84	64%	25%	Ref.	
Yes	72	20%	39	30%	35%	1.65 (1.04 to 2.61) [*]	
Discrimination other setting past 12 months							
No	98	28%	32	24%	25%	Ref.	

Continued

Table 3 Continued

Factor	Did not attend a sexual health clinic (n=356)		Attended a sexual health clinic (n=132)			Univariate	Multivariate
	n or mean	% or SD	n or mean	% or SD	Row %	OR (95% CI)	aOR (95% CI)
Yes	229	64%	91	69%	28%	1.22 (0.76 to 1.94)	
Perceived health							
Fair/good/very good	254	71%	97	73%	28%	Ref.	
Very poor/poor	102	29%	35	27%	26%	0.90 (0.57 to 1.41)	
Psychological distress							
Normal	19	5%	9	7%	32%	Ref.	
Moderate	42	12%	20	15%	32%	1.01 (0.39 to 2.61)	
High	86	24%	37	28%	30%	0.91 (0.38 to 2.19)	
Very high	203	57%	65	49%	24%	0.68 (0.29 to 1.57)	
Anal intercourse with man past 12 months							
No	286	80%	86	65%	23%	Ref.	
Yes	70	20%	46	35%	40%	2.19 (1.40 to 3.40)**	
Condomless anal intercourse sex with man past 12 months							
No	312	88%	99	75%	24%	Ref.	Ref.
Yes	44	12%	33	25%	43%	2.36 (1.43 to 3.92)**	2.87 (1.49 to 5.53)**
Sexual contact without consent past 12 months							
No	307	86%	100	76%	25%	Ref.	
Yes	28	8%	21	16%	43%	2.30 (1.25 to 4.23)**	
Unsure	9	3%	5	4%	36%	1.71 (0.56 to 5.21)	
Alcohol before sex past 12 months							
No	212	60%	49	37%	19%	Ref.	Ref.
Yes	141	40%	83	63%	37%	2.55 (1.69 to 3.85)***	2.07 (1.19 to 3.60)*
Drugs before sex past 12 months							
No	301	85%	83	63%	22%	Ref.	Ref.
Yes	52	15%	49	37%	49%	3.42 (2.16 to 5.41)***	2.67 (1.45 to 4.93)**
<i>Self-stigma</i>	<i>51.9</i>	<i>7.4</i>	<i>49.6</i>	<i>8.2</i>		<i>0.96 (0.93 to 0.99)**</i>	
<i>Body dissatisfaction</i>	<i>43.8</i>	<i>12.1</i>	<i>41.6</i>	<i>12.2</i>		<i>0.99 (0.97 to 1.00)</i>	
<i>Loneliness</i>	<i>6.4</i>	<i>1.7</i>	<i>5.9</i>	<i>1.6</i>		<i>0.85 (0.75 to 0.96)**</i>	
<i>Satisfaction with life</i>	<i>16.7</i>	<i>7.0</i>	<i>18.7</i>	<i>7.0</i>		<i>1.04 (1.01 to 1.07)**</i>	<i>1.07 (1.03 to 1.12)**</i>

*p<0.05, **p<0.01, ***p<0.001.

aOR, adjusted odds ratio; Ref., reference.

report having an HIV test than younger participants, suggesting a possible HIV risk knowledge gap among younger trans people, or that younger trans people are less likely test due to a possible perceived lack of need. Three trans participants reported being on PrEP; this might reflect a lack of PrEP knowledge,⁷ or issues with access to PrEP for trans people, who have only recently been included in the UK PrEP provision guidelines.²⁸

Although people may attend sexual health services for reasons other than STI testing, this is the first UK study to investigate factors associated with trans people's sexual health service engagement. Facebook advertising and using community organisations social media aided recruitment of trans people, including those not engaged with sexual health services. A limitation of this method is that only people using social

Table 4 Bivariate and multivariate analyses of factors associated with ever having an HIV test among trans people

Factor						Univariate	Multivariate
	Never had an HIV test (n=254)		Ever had an HIV test (n=244)			OR (95% CI)	aOR (95% CI)
	n or mean	% or SD	n or mean	% or SD	Row %		
Gender							
Trans man	81	32%	65	27%	45%	Ref.	
Trans woman	44	17%	44	18%	50%	1.25 (0.73 to 2.12)	
Non-binary	119	47%	124	51%	51%	1.30 (0.86 to 1.96)	
In another way	10	4%	11	5%	52%	1.37 (0.55 to 3.43)	
Age group (years)							
18–24	170	67%	90	37%	35%	Ref.	Ref.
25–34	47	19%	96	39%	67%	3.86 (2.50 to 5.95)***	2.50 (1.43 to 4.39)**
35–49	27	11%	47	19%	64%	3.29 (1.92 to 5.63)***	3.24 (1.54 to 6.78)**
50+	8	3%	10	4%	56%	2.36 (0.90 to 6.19)	1.32 (0.40 to 4.39)
Ethnicity							
White	248	98%	224	92%	47%	Ref.	Ref.
Person of colour	6	2%	18	7%	75%	3.32 (1.30 to 8.52)*	3.23 (1.06 to 9.86)*
Country of birth							
UK	231	91%	209	86%	48%	Ref.	
Not UK	18	7%	27	11%	60%	1.66 (0.89 to 3.10)	
Education							
University or higher	79	31%	131	54%	62%	Ref.	Ref.
Qualifications at 18 years	141	56%	84	34%	37%	0.36 (0.24 to 0.53)***	0.57 (0.34 to 0.94)*
Qualifications at 16 years or lower	25	10%	25	10%	50%	0.60 (0.32 to 1.12)	1.22 (0.56 to 2.65)
Work status							
Full-time	66	26%	98	40%	60%	Ref.	
Part-time	28	11%	26	11%	48%	0.63 (0.34 to 1.16)	
Student	92	36%	46	19%	33%	0.34 (0.21 to 0.54)***	
Unemployed	28	11%	13	5%	32%	0.31 (0.15 to 0.65)**	
Other (sick leave, retired, carer)	35	14%	56	23%	62%	1.08 (0.64 to 1.82)	
Relationship status							
Living with partner	62	24%	73	30%	54%	Ref.	Ref.
Relationship not living with partner	76	30%	58	24%	43%	0.65 (0.40 to 1.05)	0.92 (0.49 to 1.70)
Relationship with multiple partners	6	2%	28	11%	82%	3.96 (1.54 to 10.19)**	6.09 (1.82 to 20.38)**
Single	110	43%	85	35%	44%	0.66 (0.42 to 1.02)	1.13 (0.65 to 1.97)
Location							
Outside London	234	92%	221	91%	49%	Ref.	
London	14	6%	22	9%	61%	1.66 (0.83 to 3.33)	
Discrimination medical setting past 12 months							
No	192	76%	155	64%	45%	Ref.	
Yes	45	18%	68	28%	60%	1.87 (1.22 to 2.88)**	
Discrimination other setting past 12 months							
No	68	27%	66	27%	49%	Ref.	
Yes	169	67%	157	64%	48%	0.96 (0.64 to 1.43)	

Continued

Table 4 Continued

Factor	Never had an HIV test (n=254)		Ever had an HIV test (n=244)			Univariate	Multivariate
	n or mean	% or SD	n or mean	% or SD	Row %	OR (95% CI)	aOR (95% CI)
Perceived health							
Fair/good/very good	181	71%	175	72%	49%	Ref.	
Very poor/poor	73	29%	69	28%	49%	0.98 (0.66 to 1.44)	
Psychological distress							
Normal	6	2%	22	9%	79%	Ref.	
Moderate	29	11%	34	14%	54%	0.32 (0.11 to 0.90)*	
High	68	27%	54	22%	44%	0.22 (0.08 to 0.57)**	
Very high	150	59%	128	52%	46%	0.23 (0.09 to 0.59)**	
Anal sex with man past 12 months							
No	219	86%	161	66%	42%	Ref.	
Yes	35	14%	83	34%	70%	3.23 (2.07 to 5.03)***	
Condomless anal sex with man past 12 months							
No	229	90%	190	78%	45%	Ref.	Ref.
Yes	25	10%	54	22%	68%	2.60 (1.56 to 4.34)***	2.96 (1.57 to 5.58)**
Sexual contact without consent past 12 months							
No	209	82%	204	84%	49%	Ref.	
Yes	24	9%	27	11%	53%	1.15 (0.64 to 2.06)	
Unsure	10	4%	5	2%	33%	0.51 (0.17 to 1.53)	
Alcohol before sex past 12 months							
No	149	59%	115	47%	44%	Ref.	
Yes	103	41%	127	52%	55%	1.60 (1.12 to 2.28)*	
Drugs before sex past 12 months							
No	216	85%	173	71%	44%	Ref.	Ref.
Yes	36	14%	69	28%	66%	2.39 (1.53 to 3.75)***	2.46 (1.42 to 4.27)**
<i>Self-stigma</i>	52.6	7.4	50.1	7.8		0.96 (0.93 to 0.98)**	
<i>Body dissatisfaction</i>	45.9	11	40.6	12.6		0.96 (0.95 to 0.98)***	0.97 (0.95 to 0.99)**
<i>Loneliness</i>	6.5	1.6	6.0	1.7		0.85 (0.76 to 0.95)***	
<i>Satisfaction with life</i>	16.4	6.9	18.0	7.3		1.03 (1.00 to 1.06)*	

*p<0.05, **p<0.01, ***p<0.001.

aOR, adjusted odds ratio; Ref., reference.

media can be reached; this is possibly reflected in the sample, as this was slightly younger relative to the UK general population, and people of colour were under-represented. Participants were also self-selected, which may have biased the findings. Even so, being a trans person of colour was a predictor for HIV testing. A lack of representation of people of colour is a common critique of LGBT research in the UK.⁹ Future research should aim to better represent trans people of colour.

Our study was aimed at all LGBT people, so it was not possible to explore sexual behaviours in as much detail as could be achieved in a trans-specific survey (eg, other types of intercourse). Nevertheless, it has highlighted inequalities in sexual health service access and HIV testing uptake among trans people, as well as

suggesting PrEP uptake is low. Possible reasons for these include trans people historically not being included in sexual health campaigns, and a lack of confidence in healthcare professionals' treatment of trans people,¹¹ with these possibly limiting sexual health knowledge and perceived risk among trans people.

In conclusion, uptake of sexual health services among trans people should be improved, and international guidance for implementing effective HIV prevention programmes with trans people suggests this can be achieved by engaging trans people in the design and delivery of interventions,³ and by training sexual health workers on trans sexual health needs so as to remove barriers. Additionally, to fully understand trans people's sexual health needs it is important that

they are included in the development of both sexual health programmes and research.

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