

Pre-drinking is Associated with Possible Alcohol Dependence in UK Trans and Non-Binary Communities

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Abstract

In an analytical sample of 462 UK-based trans and non-binary respondents to a co-produced survey, 23.2% reported drinking with a higher risk of dependence (AUDIT scores ≥ 16), and 26.2% reported that they mostly drank at home alone. Pre-drinking and drinking mostly at home alone were associated with high-risk drinking and may be appropriate behaviours to address in harm reduction interventions.

Keywords: alcohol; co-production; gender minority; non-binary; transgender; United Kingdom

Introduction

A substantial and growing body of predominantly North American research has found that transgender (trans) and non-binary people are at greater risk of alcohol-related harm than cisgender (cis) people (Keuroghlian et al. 2015, Scheim et al. 2016, Christian et al. 2018, Hughto et al. 2021). They are more likely to report heavy episodic drinking (Christian et al. 2018), alcohol dependence (Connolly et al. 2022), and a greater prevalence of alcohol sequelae such as blackouts (Tupler et al. 2017), suicidality (Peitzmeier et al. 2020), and experiences of sexual violence while intoxicated (Connolly et al. 2021). This disparity in alcohol risk is partially attributable to cultural factors such as the historical significance of alcohol-serving venues in LGBT+ communities (Cerezo et al. 2020). Particularly harmful patterns of alcohol use have been consistently associated with transphobia in both cross-sectional and longitudinal studies (Nuttbrock et al. 2014, Blossnich et al. 2016, Chakrapani et al. 2017, Arayasirikul et al. 2017, Azagba et al. 2019), including recently in the United Kingdom (UK; Davies et al. 2024).

With record rates of transphobic violence, dehumanizing media discourse, and barriers to accessing gender-affirming and general healthcare, trans and non-binary people experience unprecedented hostility in the UK (TransActual 2021, Flatley 2023). They are likely experiencing a similarly escalating risk of alcohol harm (Davies et al. 2024). However, to the authors' knowledge, before this study, no research had been published that characterizes drinking in UK trans and non-binary communities or quantifies high-risk alcohol use.

This cross-sectional study surveyed UK-based trans and non-binary people to gain an understanding of their drinking

patterns and motivations, associated harm and preferences for alcohol reduction support (Davies et al. 2024; Connolly et al. 2024). This short report aimed to describe patterns of alcohol use and identify which characteristics of respondents' drinking were associated with alcohol harm and risk of dependence.

Methods

Community collaboration

This research was conducted with the support of a paid community advisory group of trans and non-binary people who reported current or historical alcohol use. The community advisory group, which was diverse in age, sex registered at birth, ethnicity, (dis)ability, gender identity, neurostatus, and sexual orientation, provided input at every stage to ensure the project was informed by lived experience from conception to dissemination. Representatives from organizations in the UK National Health Service (NHS) and LGBT+ community and voluntary sector further refined the survey instrument and assisted with recruitment. Supporting organizations included LGBT Foundation, LGBT Switchboard, London Friend, OUTpatients, Stonewall, TransActual, Trans Radio UK, and the UK National LGBT Health Officer for NHS England.

Study design and recruitment

Following protocol registration (<https://osf.io/zgyq7/>), a cross-sectional survey was administered to participants from 1st February until 31st March 2022 using Qualtrics software. Stakeholders contributed to a recruitment campaign across personal networks and the following social media: Facebook, Instagram, Reddit, and Twitter. Drugs and Me, a UK-based

social enterprise which aims to make drug use safer, developed recruitment materials that described the study and directed interested parties to a website where they could access more information and provide consent to anonymous participation. Eligible participants were ≥ 18 years old, UK-based, had a lifetime history of alcohol use and identified as 'transgender (trans), non-binary, genderqueer or gender non-conforming in any way'. Terminating participation before survey completion was taken to indicate withdrawal of consent. Vouchers for a UK LGBT+ bookshop incentivized participation.

Variables

Participants were invited to indicate which type of alcohol they drank most often, the place they most regularly drank alcohol, whether they drank alcohol before going on a night out (pre-drinking), and whether their alcohol consumption changed as a result of the COVID-19 pandemic and associated lockdown. The 10-item Alcohol Use Disorders Identification Test (AUDIT) assessed participants' risk of alcohol dependence (Babor et al. 2001). The heterogeneous physiology of trans and non-binary people, who may medically affirm their gender to varying degrees, means the sex-based thresholds for identifying hazardous drinking in cis men and cis women may not be valid in this population. The community advisory group, therefore, advised adapting the third AUDIT item to 'How often do you have six or more units on one occasion?' Participants were then asked to indicate which of a list of 13 specific alcohol-related harms (e.g. 'I have taken more sexual risks than usual' and 'I have been embarrassed by something I did') they had experienced in the preceding 12 months. A greater total count of reported harms (0–13) indicated more severe alcohol-related harm experienced by the participant. [Supplementary Table S1](#) lists the survey items used for this report. The full survey instrument is published elsewhere (Connolly et al. 2024).

Statistical analysis

Participants were allocated to one of two alcohol risk groups according to their total AUDIT score: low risk (0–15) and high risk (including probable dependence; ≥ 16). This threshold was chosen to reflect our interest in identifying the percentage of participants at high risk of dependence as opposed to those engaging in hazardous use. The count and percentage of participants in each group were reported along with the sample mean and standard deviation (SD). Responses to all other categorical variables were presented as counts and percentages. A binary logistic regression (model A) was developed to examine the association between high-risk drinking (compared with low-risk) and gender identity, alcohol type, drinking location, pre-drinking, and age. A negative binomial regression (model B) predicting increasing scores on the alcohol harm scale was constructed with gender identity, alcohol type, drinking location, pre-drinking, and age as predictors. Missing data were managed using pairwise deletion. All analyses were conducted on IBM SPSS v28.

Results

The study sample comprised 565 participants. We excluded participants with incomplete AUDIT data ($n = 103$), leaving an analytic sample of 462 people who reported current alcohol use. Respondents were assigned to one of five gender identity groups: non-binary and/or genderqueer ($n = 210$,

37.2%), woman only ($n = 160$, 28.3%), multiple gender identities ($n = 104$, 18.4%), man only ($n = 74$, 13.1%), or other gender identity ($n = 17$, 3.0%). Participants' mean age was 28.6 years (SD: 9.4; $n = 174$ missing). The vast majority of participants reported white ethnicity ($n = 422$, 91.4%). The remaining 40 participants characterized their ethnicity as mixed (or multiple ethnic groups; $n = 19$, 4.1%), Asian or Asian British ($n = 7$, 1.5%), Latino ($n = 2$, .4%), Black or Black British ($n = 1$, .2%), or 'Other ethnic group' ($n = 11$, 2.4%). The sample is fully characterized elsewhere (Connolly et al. 2024).

The mean AUDIT score in the sample was 8.8 (SD = 7.9). The majority of participants ($n = 264$, 57.1%) had a total AUDIT score ≥ 8 , suggesting 'hazardous' or 'harmful' use (Table 1). High-risk drinking was reported by 23.2% ($n = 107$) of the respondents. Approximately half of the sample reported an increase in alcohol consumption because of the COVID-19 pandemic, with 17.1% indicating their drinking increased by 'a lot'. In contrast, 30.5% reported a decrease in drinking, with 16.2% indicating consumption decreased by a 'lot'.

More than half of the sample reported that they most commonly drank alcohol at home with friends/family (34.8%) or alone (26.2%). While around 20% most often drank at a pub or bar, drinking at other venues such as a nightclub (4.1%) was less common. Around 30% of participants reported drinking before a night out (pre-drinking) 'most of the time' (16.0%) or 'always' (13.0%). Spirits (e.g. vodka) were the preferred type of alcohol for 40% of participants.

In model A (Table 2), high-risk drinking was positively associated with pre-drinking 'sometimes' (adjusted odds ratio [aOR] = 5.03, 95% CI: 2.15–11.76, $P < .001$) or 'often or always' (aOR = 6.44, 95% CI: 2.77–14.96, $P < .001$), when compared with 'never or rarely' pre-drinking. Compared with drinking mostly at home with family and friends, drinking mostly at home alone was positively associated with high-risk drinking (aOR = 13.29, 95% CI: 3.25–54.36, $P < .001$). Relative to participants who identified only as men, participants with non-binary and/or genderqueer identities (aOR = .29, 95% CI: .11–.75, $P = .011$) or multiple gender identities (aOR = .33, 95% CI: .11–.98, $P = .046$) had a lower odds of reporting high-risk drinking.

In response to the pre-specified list of alcohol-related harms, 45.9% were embarrassed by something they did while drinking, 42.9% were sick, and 21.6% missed work or study. Those who reported pre-drinking 'often or always' (aOR = 2.69, 95% CI: 1.88–3.86, $P < .001$) or 'sometimes' (aOR = 1.91, 95% CI: 1.31–2.78, $P = .001$) were more likely to report alcohol harm than those who pre-drink 'never or rarely' (Table 2, model B). Drinking mostly at home alone (aOR = 1.97, 95% CI: 1.33–2.93, $P = .001$) or in the night-time economy (aOR = 1.85, 95% CI: 1.27–2.67, $P = .001$) was also positively associated with alcohol harms, relative to drinking mostly at home with family and friends.

Discussion

A quarter of the respondents included in this analysis reported high-risk drinking. This greatly exceeds a representative UK general population estimate of 3.1% from the Adult Psychiatric Morbidity Survey (Drummond et al. 2016). Moreover, when compared to a sample of respondents to Trans PULSE Canada, a trans and non-binary community-based survey, considerably more participants in this study scored ≥ 5 in the

Table 1. Characteristics of alcohol use behaviours.

AUDIT score	Mean [SD] Low risk (0–15) High risk (≥ 16)	8.8 [7.9] 355 (76.8%) 107 (23.2%)
In what place do you most regularly drink alcohol?	At home with friends/family At home alone In a pub or bar In a nightclub At a friend's house At a party In an outdoor location At a music event Other (e.g. restaurants)	161 (34.8%) 121 (26.2%) 94 (20.3%) 19 (4.1%) 35 (7.6%) 16 (3.5%) 6 (1.3%) 5 (1.1%) 5 (1.1%)
What type of alcohol do you drink most often?	Beer/lager/cider Spirits (e.g. vodka) Wine Pre-mixed drinks Other (e.g. fortified wine, sake)	168 (36.4%) 187 (40.5%) 80 (17.3%) 18 (3.9%) 9 (1.9%)
Do you drink alcohol at home before going out on a night out?	Never Rarely Sometimes Most of the time Always	137 (30.0%) 80 (17.3%) 111 (24.0%) 74 (16.0%) 60 (13.0%)
Did your alcohol consumption change as a result of the COVID-19 pandemic?	Decreased a lot Decreased a little Stayed the same Increased a little Increased a lot	75 (16.2%) 66 (14.3%) 119 (25.8%) 123 (26.6%) 79 (17.1%)
Have any of the following things happened to you when/after you have been drinking in the last year?	Been sick Been embarrassed by something I did Missed work or study Been in trouble with the police Suffered an injury Been taken to hospital Had a fight with someone Taken an illicit substance Lost something Taken more sexual risks than usual Had sex with someone and regretted it afterwards Not known where I was when I woke up Had an unwanted photo posted on social media	198 (42.9%) 212 (45.9%) 100 (21.6%) 7 (1.5%) 66 (14.3%) 10 (2.2%) 24 (5.2%) 111 (24.0%) 95 (20.6%) 68 (14.7%) 43 (9.3%) 24 (5.2%) 26 (5.6%)

first three AUDIT questions (i.e. AUDIT-C): 57.6% vs. 16.9% (Tran et al. 2023). This study identified several behaviours associated with this risk, including drinking at home alone and pre-drinking. While seemingly fewer participants in this study (70.0%) reported pre-drinking relative to the predominantly cis population reached by the Global Drug Survey samples in England, Scotland, and Wales (75–78%; Ferris et al. 2019), many more respondents to this survey (26.2%) reported drinking at home alone than in the 2015 Global Drug Survey sample (7.7%; Davies et al. 2021).

These findings have implications for harm reduction campaigns and individual advice, which, following the generation of corroborative evidence, could address these behaviours specifically. Though the efficacy of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in trans and non-binary communities has not yet been reported, it is highly acceptable, and guidance on adopting a trans-affirmative framework has been published (Dentato et al. 2019, 2022, Yimsaard et al. 2024). Considering the frequency with which high-risk drinking was reported, it is advisable to introduce training for primary care clinicians to adapt SBIRT pathways for this population.

To the authors' knowledge, this is the first study to report patterns of drinking in UK trans and non-binary communities and may be the first in the wider literature to consider drinking location and pre-drinking in this population. Community input shaped each part of the study, including the survey instrument (e.g. alcohol harm scale), and facilitated the recruitment of a large sample from a 'hidden' population. However, these results should be interpreted in the context of several limitations. This study's cross-sectional nature precludes causal inference. Moreover, limited diversity in the research team may have contributed to the small number of participants from Global Majority backgrounds. Future research will ensure sufficient resources are allocated to address this bias.

Conclusion

In this sample of trans and non-binary people in the UK, 23.2% reported high-risk drinking, which was associated with pre-drinking and drinking at home alone. Clinicians should screen trans and non-binary people for alcohol harm routinely in primary care, and pre-drinking and drinking at home alone

Table 2. Regression models.

	Exp(B)	95% CI for Exp(B)	P
A. Binary logistic regression model predicting AUDIT score ≥ 16 (N = 322)			
Gender identity (N)			
Man only (45)			
Woman only (95)	.39	.15–1.00	.051
Non-binary and/or genderqueer (104)	.29	.11–.75	.011
Other gender identity (15)	.62	.12–3.18	.571
Multiple gender identities (63)	.33	.11–.98	.046
Alcohol type (N)			
Beer (113)			
Wine (55)	1.09	.38–3.13	.977
Spirits (133)	1.74	.84–3.62	.139
Other (21)	.97	.19–5.05	.969
Drinking location (N)			
Home w/ family and friends (114)			
Home alone (80)	13.29	3.25–54.36	<.001
Night-time economy (90)	2.66	.65–10.92	.176
Parties and friend's homes (38)	2.87	.71–11.63	.139
Pre-drinking (N)			
Never or rarely (153)			
Sometimes (80)	5.03	2.15–11.76	<.001
Often or always (89)	6.44	2.77–14.96	<.001
Age	1.01	.97–1.04	.793
B. Negative binomial regression model predicting alcohol harm (N = 322)			
Gender identity (N)			
Man only (45)			
Woman only (95)	1.17	.73–1.87	.510
Non-binary and/or genderqueer (104)	1.06	.68–1.65	.813
Other gender identity (15)	1.51	.70–3.26	.291
Multiple gender identities (63)	1.02	.61–1.70	.946
Alcohol type (N)			
Beer (113)			
Wine (55)	1.07	.67–1.69	.789
Spirits (133)	1.08	.77–1.51	.679
Other (21)	1.03	.55–1.93	.927
Drinking location (N)			
Home w/ family and friends (114)			
Home alone (80)	1.97	1.33–2.93	.001
Night-time economy (90)	1.85	1.27–2.67	.001
Parties and friends' homes (38)	1.10	.66–1.82	.719
Pre-drinking (N)			
Never or rarely (153)			
Sometimes (80)	1.91	1.31–2.78	.001
Often or always (89)	2.69	1.88–3.86	<.001
Age	.96	.94–.98	<.001

CI, confidence intervals.

should be investigated as potential foci for harm reduction interventions.

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Author contributions

Dean Connolly (Conceptualization [lead], Formal analysis [lead], Investigation [lead], Methodology [lead], Project administration [lead], Writing—original draft [lead], Writing—review & editing [lead]), Ivan Ezquerro-Romano (Conceptualization [equal], Methodology [equal], Writing—review & editing [equal]), Stewart O'Callaghan (Conceptualization [equal], Methodology [equal], Writing—review & editing [equal]), Jacob Bayliss (Conceptualization [equal], Methodology [equal], Writing—review & editing [equal]), Beth Thayne (Conceptualization [equal], Methodology [equal], Writing—review & editing

[equal]), Zhi Holloway (Conceptualization [equal], Methodology [equal], Writing—review & editing [equal]), Emma Davies (Conceptualization [lead], Formal analysis [lead], Funding acquisition [lead], Investigation [lead], Methodology [equal], Supervision [lead], Writing—review & editing [equal])

Supplementary data

Supplementary data is available at *Alcohol and Alcoholism* online.

Conflict of interest: The authors have no conflicts of interest to declare.

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Data availability

The data used in these analyses are available upon reasonable request.

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