

PERSPECTIVE

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Rising transphobia and disparities in drug-related harm experienced by transgender and gender-diverse people

Dean J. Connolly^{1,2*}, Hari Dewan³ and Adam Holland⁴

Abstract

Background Transgender (trans) and gender-diverse (TGD) people are a small but increasingly visible population who experience worsening marginalisation characterised by toxic political and media discourse, violent hate crimes and discriminatory laws targeting healthcare and public access. Governments in both the United Kingdom (UK) and the United States (US) have pushed anti-trans policies which threaten to further exclude TGD people. Understanding the public health impacts of transphobia is vital, especially regarding disproportionate drug-related harms.

Main body TGD people are more likely than their cisgender counterparts to experience both acute and chronic drug-related harm. This is, in part, driven by rising transphobia and perpetuated by limited access to gender-affirming and harm reduction services. Current health data systems fail to accurately capture the scale of drug-related harms faced by TGD people due to suboptimal gender measurement. Inclusive data collection and culturally competent harm reduction services are urgently needed to address these disparities. Digital interventions, such as telehealth, and peer-led support may improve the accessibility and effectiveness of care for this group.

Conclusion Evidence suggests that TGD individuals face disproportionate drug-related harm compared to cisgender people, a disparity likely to widen as government-led hostility increases in countries such as the UK and the US. Immediate action is required to ensure TGD people are fully represented in research, public health monitoring, and support services.

Keywords Alcohol-related harm, Drug-related harm, Gender diverse, Harm reduction, Health inequalities, Substance-related harm, Transgender, Transphobia, United Kingdom, United States

*Correspondence:

Dean J. Connolly
dean.connolly@lshtm.ac.uk

¹National Addiction Centre, King's College London, 4 Windsor Walk,
London SE5 8AF, UK

²Faculty of Public Health and Policy, London School of Hygiene and
Tropical Medicine, London, UK

³UCL Medical School, University College London, London, UK

⁴School of Psychological Sciences, University of Bristol, Bristol, UK



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Background

Transgender (trans) and gender-diverse (TGD) individuals are those whose gender identities do not correspond with their sex registered at birth. Although TGD people represent a small and minoritised group, historical erasure from representative datasets has hindered precise estimations of their population size [1]. Recent changes to the Canadian and United Kingdom (UK) censuses have begun to address this oversight, estimating that approximately 0.3% of the Canadian population and 0.5% of the UK adult population are trans or gender diverse [2, 3]. Sustained activism, popular media representation and widespread access to the internet have increased the visibility of TGD communities in many countries, which has been met with limited and decreasing tolerance [4, 5].

Transphobia can be characterised as a face of stigma: a complex social process, characterised by discrimination against groups who are labelled and stereotyped based on a particular behaviour or attribute [6]. Increasingly, stigma is understood as a key determinant of population health, leading to disadvantages for those in its crosshairs [7–9]. Although initially characterised as an interpersonal phenomenon [10], it is now understood to act at a structural level, conferring inequality through law, policies and social norms [11]. This theoretical approach has much in common with literature on structural violence, whereby racism, ableism, and other forms of prejudice are ingrained in policy, leading to the normalisation of disadvantage [12].

People who use prohibited drugs are often highly stigmatised [13, 14]. If TGD people use drugs they must then navigate intersectional stigma, with compounded negative impacts on health [15]. There has been increasing recognition that stigma is utilised as a tool of governance serving specific interests—whether or not its use is intentional or recognised by those who perpetuate it [16, 17]. Media and policy discourses frequently demonise and scapegoat migrants, welfare recipients, and people who use drugs for social problems they did not cause, deflecting attention from the structural harms of neoliberal economic policies that benefit the powerful [16, 18]. TGD people have increasingly become key targets of media and policy demonisation amid deepening socioeconomic inequality [19–21].

Many countries globally [22, 23], particularly the UK and United States (US), have reached a crisis state of transphobia [24], characterised by regressive public opinion [5, 25], escalating incidence of violent hate crime [26] and threatened or actual exclusion of TGD people from aspects of public life, through new legislation targeting healthcare, education, sports and bathroom access [27–30]. While a complete account is beyond the scope of this article, vitriolic political, press, and social media

discourse are key precipitants, which have created an unsubstantiated moral panic [20, 23, 31, 32].

New governments in both the UK and the US have campaigned on trans exclusion. In his vow to “*end the transgender lunacy*”, Donald Trump promised voters “*...it will be a policy of the United States that there are only two genders*” [33], and UK Labour recently extended indefinitely their Conservative predecessors’ temporary criminalisation of gender-affirming medical care for young people. The latter decision was made in a consultation which included eight anti-trans organisations—among them advocates of conversion therapy—whose opinions were prioritised over the majority and clear opposition from TGD communities [34, 35]. Therefore, clinicians and policymakers must understand the public health implications of transphobia. Whilst these implications are many, in this article, we focus on the disproportionate drug-related harms experienced by TGD communities. This focus is particularly pertinent given the persistent drug-related death crises in the US, UK and elsewhere [36, 37].

It is important to note that whilst all drug use is associated with some level of risk, the propensity for harm varies according to the drug type and pattern of use [38, 39], with many risks exacerbated by environmental and structural conditions, including societal responses to drugs and those who use them [40]. Many policy documents unduly and disproportionately problematise all drug use among TGD people [41]. Such framing fails to account for the benefits many TGD people experience from drug use, such as pleasure, community building and identity exploration [42], as well as how the scale of risk varies between individuals and throughout the life course [43, 44].

TGD people face a greater burden of drug-related harm

Collectively, relative to their cisgender (cis) peers, TGD people appear more likely to use drugs and experience a range of associated harms [45–47]. For example, TGD people are more likely to experience acute negative sequelae of drug use (e.g., blackouts and suicidality) and are at greater risk of interpersonal sexual and non-sexual violence when intoxicated [48–50]. In large-scale surveys, psychometric tests reliably find that TGD people are more likely than cis counterparts to experience drug dependence, which may negatively impact other aspects of their lives [51–53]. This is corroborated by analyses of administrative data in the US, which demonstrated a disproportionate burden of drug (and, separately, alcohol) use disorder diagnoses among TGD people [54]. This disparity is greater among transfeminine than transmasculine people highlighting that individual TGD sub-groups have unique patterns of drug use and harm [54].

The exact scale of this inequity is not fully understood. Issues such as sub-optimal gender measurement by clinical and public health surveillance systems and misgendering following death preclude an accurate estimation of drug-related hospitalisations, fatalities, and service use. As illicit markets for heroin and other drugs become increasingly adulterated with highly potent synthetics [37], this systemic erasure could be disastrous for TGD communities who experience concurrent exclusion from harm reduction services [55].

Rising transphobia as a driver of disproportionate drug-related harm

Transphobia can be considered both a direct and indirect driver of heightened drug-related harm. Gender minority stress theories offer a framework for understanding how chronic exposure to anticipated, enacted, or internalised stigma brings about a physiological and psychological stress response that is deleterious to the health of TGD people [56–58]. In addition to contributing to physical and mental illness [59, 60], minority stress has been strongly and consistently associated with particularly harmful patterns of drug use, as people use drugs to cope despite negative effects on other areas of their lives [61–63].

Drug-related harm is also exacerbated indirectly through pervasive inequalities in health's wider determinants. For example, high rates of family rejection and subsequent socioeconomic inequalities contribute to stark and widening disparities in homelessness among TGD communities [64–66]. Trans women experiencing homelessness and precarious housing report higher levels of heroin, crack and methamphetamine use relative to their housed counterparts [67]. Moreover, homelessness is strongly associated with drug-related mortality, HIV and hepatitis C transmission [68–70].

Transphobic policies increasingly exclude TGD people from general, gender-affirming and drug-related healthcare [28, 30, 71–73]. Delayed or inaccessible gender-affirming care prolongs gender dysphoria, a known correlate of drug use [44, 45]. Direct discrimination (including refusal of care) from individual healthcare providers, which is frequently reported by TGD people, is similarly associated with heavier drug use [71, 74, 75]. Moreover, several studies suggest that many TGD people experience othering and violence when accessing support through residential rehabilitation and from peers (e.g., in 12-step fellowships) [76–78]. In addition to escalating drug use for coping motives, discrimination in healthcare settings is associated with future healthcare avoidance [74], potentially leading to delays in seeking support for infections and other drug-related health issues [79].

Recommendations for clinicians, commissioners and policymakers

Transphobia is a wicked problem and one that is likely to worsen before it improves. Therefore, the following recommendations focus on addressing drug-related harm in the context of systemic anti-trans hostility. In a recent review of highly cited quantitative, qualitative or mixed-methods alcohol research published between 2015 and 2022, measures of gender, if reported, rarely allowed the identification of TGD people [80]. Similarly, in the UK, public health surveillance reports, including for drug services and drug-related deaths, present data disaggregated by presumed (typically birth-registered) sex [81, 82], and globally gender modality and inclusive gender identity measures are lacking in most clinical records [83–85]. A shift towards inclusive measurement and reporting of both sex and gender is required when collecting data about people who use drugs. By addressing the current erasure of TGD people from these datasets, the scale and characteristics of drug-related harms they experience, both collectively and by gender identity, could be better understood and inform service planning.

Providers of harm reduction (e.g., needle and syringe programmes) and abstinence-focused services must adapt to be more inclusive of TGD people, beginning with visible allyship, cultural competence training for clinicians and robust anti-discrimination policies to address transphobia. Providers should respect and affirm the gender identity disclosed by service users through correct name and pronoun use and adopt a minority stress-informed framework when supporting TGD people [56]. Moreover, gender identity, not birth-registered sex, should inform the residential services and sex- or gender-segregated therapeutic groups and spaces to which TGD people are allocated. Community-led organisations have published comprehensive guidance on affirming service provision and inclusive data collection practices, which are generally acceptable to the wider population [86–89].

Historical exclusion from healthcare services and broader societal discrimination have left many TGD people with unmet health needs, including in drug-related harm reduction. Some TGD people report a preference for bespoke services and interventions that address their unique experiences and challenges [78], which is of particular importance whilst more work is needed to ensure TGD people feel welcome in gender-segregated groups and services. However, the availability of dedicated services is extremely limited in both research and practice [90–92]. This lack of access is especially pronounced outside of large, socially progressive cities, where in-person specialist services may be infeasible due to the small size and geographical dispersion of the TGD population.

Given these barriers, digital interventions present a promising alternative. Several studies have shown that

some TGD people prefer digital options, citing the relative sense of safety and anonymity they provide, particularly when navigating stigmatized health issues such as drug use [78, 93]. Digital harm reduction services—such as telehealth counselling and self-help mobile apps—could be delivered at scale with relatively low resource demands, overcoming geographic and social barriers to care. When adequately resourced and supported, peer-led interventions may break down help-seeking barriers linked to anticipated discrimination, fostering trust between TGD people and the services where peer workers are embedded. Future research should prioritize testing these interventions to evaluate both their acceptability and effectiveness in reducing drug-related harm among TGD populations.

Conclusion

All evidence suggests that TGD people experience disproportionate drug-related harm relative to cis people. This disparity appears likely to widen with increasing hostility from governments in the UK, US and elsewhere. To mitigate this harm, urgent action is required to ensure TGD people are meaningfully included in research, public health surveillance and support services.

Abbreviations

HIV	Human immunodeficiency virus
TGD	Transgender and gender diverse
UK	United Kingdom
US	United States

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Not applicable.

Author contributions

DJC proposed the idea for this manuscript, collated the literature and co-wrote the first draft with HD. All authors reviewed drafts and approved the final manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

DJC and AH are co-chairs of the UK Faculty of Public Health Drugs Special Interest Group and members of the Drug Science Enhanced Harm Reduction Working Group. DJC is a member of the UK Advisory Council on the Misuse of Drugs LGBTQ+ Working Group. AH volunteers for The Loop, a drug-checking service. HD has no conflicts of interest to declare.

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References

1. Winter S, Diamond M, Green J, Karasic D, Reed T, Whittle S, et al. Transgender people: health at the margins of society. *Lancet*. 2016;388:390–400.
2. Office for National Statistics. Gender identity, England and Wales: census 2021. ONS website, statistical bulletin. London. 2023. <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/genderidentity/bulletins/genderidentityenglandandwales/census2021#cite-this-statistical-bulletin>.
3. Statistique Canada. Canada is the first country to provide census data on transgender and non-binary people. Ottawa. 2022. <https://www150.statcan.gc.ca/n1/daily-quotidien/220427/dq220427b-eng.htm>.
4. Strangio C. Trans visibility is nice. Safety is even better. *New York Times*. 2024. <https://www.nytimes.com/2024/02/15/opinion/trans-visibility-legislative-rights.html>.
5. Clery E. A liberalisation in attitudes? In: Frankenburg S, Clery E, Curtice J, editors. *British social attitudes: the 40th report*. London: National Centre for Social Research. 2023. https://natcen.ac.uk/sites/default/files/2023-09/BSA_40_Moral_issues.pdf.
6. Link BG, Phelan JC. Conceptualizing stigma. *Annu Rev Sociol*. 2001;27:363–85.
7. Hatzenbuehler ML, Phelan JC, Link BG. Stigma as a fundamental cause of population health inequalities. *Am J Public Health*. 2013;103:813–21.
8. Link B, Hatzenbuehler ML. Stigma as an unrecognized determinant of population health: research and policy implications. *J Health Polit Policy Law*. 2016;41:653–73.
9. Stangl AL, Earnshaw VA, Logie CH, van Brakel W, Simbayi C, Barré L. The health stigma and discrimination framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. *BMC Med*. 2019;17:31.
10. Goffman E. *Stigma: notes on the management of spoiled identity*. Penguin. 1990.
11. Hatzenbuehler ML. Structural stigma: research evidence and implications for psychological science. *Am Psychol*. 2016;71:742–51.
12. Rhodes T, Wagner K, Strathdee SA, Shannon K, Davidson P, Bourgois P. Structural violence and structural vulnerability within the risk environment: theoretical and methodological perspectives for a social epidemiology of HIV risk among injection drug users and sex workers. *Rethinking social epidemiology*. Dordrecht: Springer Netherlands. 2012;205–30.
13. Yang LH, Wong LY, Grivel MM, Hasin DS. Stigma and substance use disorders. *Curr Opin Psychiatry*. 2017;30:378–88.
14. van Boekel LC, Brouwers EPM, van Weeghel J, Garretsen HFL. Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: systematic review. *Drug Alcohol Depend*. 2013;131:23–35.
15. Turan JM, Elafros MA, Logie CH, Banik S, Turan B, Crockett KB, et al. Challenges and opportunities in examining and addressing intersectional stigma and health. *BMC Med*. 2019;17:7.
16. Friedman SR, Williams LD, Guarino H, Mateu-Gelabert P, Krawczyk N, Hamilton L, et al. The stigma system: how sociopolitical domination, scapegoating, and stigma shape public health. *J Community Psychol*. 2022;50:385–408.
17. Link BG, Phelan J. Stigma power. *Soc Sci Med*. 2014;103:24–32.
18. Scambler G. Heaping blame on shame: 'weaponising stigma' for neoliberal times. *Sociol Rev*. 2018;66:766–82.
19. John T. Anti-trans rhetoric is rife in the British media. Little is being done to extinguish the flames. *CNN*. 2021. <https://edition.cnn.com/2021/10/09/uk/uk-trans-rights-gender-critical-media-intl-gbr-cmd/index.html>.
20. Mermaids Press. EXCLUSIVE: mermaids' research into newspaper coverage on trans issues. Mermaids. 2019. <https://mermaidsuk.org.uk/news/exclusive-mermaids-research-into-newspaper-coverage-on-trans-issues/>.
21. Horton C. The cass review: cis-supremacy in the UK's approach to healthcare for trans children. *Int J Transgend Health*. 2024;1–25. <https://doi.org/10.1080/26895269.2024.2328249>.
22. Transgender Europe. Trans Rights Index & Map 2024 reveals polarisation in trans rights in Europe and Central Asia. 2024. <https://tgeu.org/tgeus-trans-rights-index-map-2024-reveals-polarisation-in-trans-rights-in-europe-and-central-asia/>.
23. ILGA-Europe. Annual review of the human rights situation of lesbian, gay, bisexual, trans and intersex people in Europe and central Asia. Brussels. 2024. <https://www.ilga-europe.org/report/annual-review-2024/>.

24. Restar AJ, Layland EK, Davis B, Thompson H, Streed C. The public health crisis state of transgender health care and policy. *Am J Public Health*. 2024;114:161–3.
25. Parker K, Menasce Horowitz J, Brown A. Americans' complex views on gender identity and transgender issues. Washington. 2022. <https://www.pewresearch.org/social-trends/2022/06/28/americans-complex-views-on-gender-identity-and-transgender-issues/>.
26. Flatley J. Hate crime, England and Wales, 2022 to 2023. United Kingdom Government Home Office. 2023. <https://www.gov.uk/government/statistics/hate-crime-england-and-wales-2022-to-2023/hate-crime-england-and-wales-2022-to-2023>.
27. Department for Education. Gender Questioning Children: non-statutory guidance for schools and colleges in England (Draft for consultation). London. 2023. https://consult.education.gov.uk/equalities-political-impartiality-anti-bullying-team/gender-questioning-children-proposed-guidance/supporting_documents/Gender_Questioning_Children_nonstatutory_guidance.pdf.
28. Department of Health and Social Care. NHS Constitution: 10 year review. London. 2024. <https://www.gov.uk/government/consultations/nhs-constitution-10-year-review>.
29. UK Parliament POST. POSTNOTE 683: performance, Inclusion and Elite Sports - Transgender Athletes. London. 2022. <https://researchbriefings.files.parliament.uk/documents/POST-PN-0683/POST-PN-0683.pdf>.
30. Trans Legislation Tracker. Tracking the rise of anti-trans bills in the U.S. 2024. <https://translegislation.com/learn>.
31. IPSO. Mediatique. Examining trends in editorial standards in coverage of transgender issues. London. 2020. Available from: <https://www.ipso.co.uk/media/1986/mediatique-report-on-coverage-of-transgender-issues.pdf>.
32. Connolly DJ, Muschilli L. A call to action for equitable care for trans and non-binary people. *Lancet*. 2024;403:139–40.
33. Monteil A. Trump: it will be the policy of the united States that there are only two genders. *Them*. 2024. <https://www.them.us/story/donald-trump-america-first-only-two-genders>.
34. Department of Health and Social Care. Ban on puberty blockers to be made indefinite on experts' advice. London; 2024. <https://www.gov.uk/government/news/ban-on-puberty-blockers-to-be-made-indefinite-on-experts-advice#:~:>.
35. Wareham J. Puberty blocker ban consultation featured eight explicitly anti-trans groups. *Queer AF*. 2024. <https://www.wearequeer.af.com/puberty-blocker-ban-consultation-featured-eight-explicitly-anti-trans-groups/>.
36. Friedman J, Shover CL. Charting the fourth Wave: geographic, Temporal, race/ethnicity and demographic trends in polysubstance Fentanyl overdose deaths in the united States, 2010–2021. *Addiction*. 2023;118:2477–85.
37. Holland A, Copeland CS, Shorter GW, Connolly DJ, Wiseman A, Mooney J, et al. Nitazenes—heralding a second wave for the UK drug-related death crisis? *Lancet Public Health*. 2024;9:e71–2.
38. Crossin R, Cleland L, Wilkins C, Rychert M, Adamson S, Potiki T, et al. The new Zealand drug harms ranking study: a multi-criteria decision analysis. *J Psychopharmacol*. 2023;37:891–903.
39. Nutt DJ, King LA, Phillips LD. Drug harms in the UK: a multicriteria decision analysis. *Lancet*. 2010;376:1558–65.
40. Rhodes T. The 'risk environment': a framework for Understanding and reducing drug-related harm. *Int J Drug Policy*. 2002;13:85–94.
41. Pienaar K, Murphy DA, Race K, Lea T. Problematising LGBTIQ drug use, governing sexuality and gender: a critical analysis of LGBTIQ health policy in Australia. *Int J Drug Policy*. 2018;55:187–94.
42. Pienaar K, Murphy DA, Race K, Lea T. Drugs as technologies of the self: enhancement and transformation in LGBTQ cultures. *Int J Drug Policy*. 2020;78:102673.
43. Kelly PJA, Myers-Matthews P, Collins AB, Wolfe HL, Miller-Jacobs C, Davis M, et al. A qualitative study of reasons to use substances and substance use treatment experiences among transgender and gender diverse adults in Rhode Island. *SSM - Qualitative Res Health*. 2024;5:100399.
44. Bailey S, Lin A, Cook A, Winter S, Watson V, Wright-Toussaint D, et al. Substance use among trans and gender diverse young people in Australia: patterns, correlates and motivations. *Drug Alcohol Rev*. 2024;43:1940–53.
45. Connolly D, Gilchrist G. Prevalence and correlates of substance use among transgender adults: a systematic review. *Addict Behav*. 2020;111:106544.
46. Ruppert R, Kattari SK, Sussman S. Review. Prevalence of addictions among transgender and gender diverse subgroups. *Int J Environ Res Public Health*. 2021;18.
47. Cotaina M, Peraire M, Bosca M, Echeverria I, Benito A, Haro G. Substance use in the transgender population: a meta-analysis. *Brain Sci*. 2022;12.
48. Connolly D, Aldridge A, Davies E, Maier LJ, Ferris J, Gilchrist G, et al. Comparing transgender and cisgender experiences of being taken advantage of sexually while under the influence of alcohol and/or other drugs. *J Sex Res*. 2021;58:1112–7.
49. Tupler LA, Zapp D, DeJong W, Ali M, O'Rourke S, Looney J, et al. Alcohol-related blackouts, negative alcohol-related consequences, and motivations for drinking reported by newly matriculating transgender college students. *Alcohol Clin Exp Res*. 2017;41:1012–23.
50. Parrott DJ, Halmos MB, Stappenbeck CA, Moino K. Intimate partner aggression during the COVID-19 pandemic: associations with stress and heavy drinking. *Psychol Violence*. 2021;12:95–103.
51. Connolly DJ, Davies E, Lynskey M, Maier LJ, Ferris JA, Barratt MJ, et al. Differences in alcohol and other drug use and dependence between transgender and cisgender participants from the 2018 global drug survey. *LGBT Health*. 2022;9:334–42.
52. Dermody SS, Lamb KM, Kerr DCR. Heavy drinking and drinking harms for cisgender and transgender college students. *Psychol Addict Behav*. 2022;36:466–76.
53. Connolly DJ, Ezquerro-Romano I, O'Callaghan S, Bayliss J, Thayne B, Holloway Z, et al. Pre-drinking is associated with possible alcohol dependence in UK trans and non-binary communities. *Alcohol Alcohol*. 2024;60:agae084.
54. Hughto JMW, Quinn EK, Dunbar MS, Rose AJ, Shireman TJ, Sasuja GK. Prevalence and co-occurrence of alcohol, nicotine, and other substance use disorder diagnoses among US transgender and cisgender adults. *JAMA Netw Open*. 2021;4:e2036512–2036512.
55. Jauregui A, Belen M, Wilkins D, Edelmann T. Gender affirming harm reduction: a toolkit for syringe service programs. Lighthouse Learn Collective. 2024. <https://lighthouse toolkit.my.canva.site/#purpose-and-objective>.
56. Hendricks ML, Testa RJ. A conceptual framework for clinical work with transgender and gender nonconforming clients: an adaptation of the minority stress model. *Prof Psychol Res Pr*. 2012;43.
57. Lefevor GT, Boyd-Rogers CC, Sprague BM, Janis RA. Health disparities between genderqueer, transgender, and cisgender individuals: an extension of minority stress theory. *J Couns Psychol*. 2019;66:385–95.
58. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychol Bull*. 2003;129.
59. Streed CG, Beach LB, Caceres BA, Dowshen NL, Moreau KL, Mukherjee M, et al. Assessing and addressing cardiovascular health in people who are transgender and gender diverse: a scientific statement from the American heart association. *Circulation*. 2021;144:e136–48.
60. Pellicane MJ, Ciesla JA. Associations between minority stress, depression, and suicidal ideation and attempts in transgender and gender diverse (TGD) individuals: systematic review and meta-analysis. *Clin Psychol Rev*. 2022;91:102113.
61. Kcomt L, Evans-Polce RJ, Boyd CJ, McCabe SE. Association of Transphobic discrimination and alcohol misuse among transgender adults: results from the U.S. Transgender survey. *Drug Alcohol Depend*. 2020;215:108223.
62. Nuttbrock L, Bockting W, Rosenblum A, Hwahng S, Mason M, Macri M, et al. Gender abuse, depressive symptoms, and substance use among transgender women: a 3-Year prospective study. *Am J Public Health*. 2014;104:2199–206.
63. Pellicane MJ, Quinn ME, Ciesla JA. Transgender and gender-diverse minority stress and substance use frequency and problems: systematic review and meta-analysis. *Transgend Health*. 2023;10:7–21.
64. End Homelessness. Transgender homeless adults & unsheltered homelessness: what the data tell us. Washington. 2020. <https://endhomelessness.org/trans-and-gender-non-conforming-homelessness/>.
65. Memorializing Transgender Day of Remembrance: a report from the Inter-agency working group on safety, opportunity, and inclusion for transgender and gender diverse individuals. Washington. 2021. https://www.whitehouse.gov/wp-content/uploads/2021/11/Report_Memorializing-Transgender-Day-of-Remembrance_FINAL-002.pdf.
66. Eisenberg ME, Kelly ED, McRee A-L, Brady SS, Barnes AJ. Homelessness experiences and gender identity in a population-based sample of adolescents. *Prev Med Rep*. 2019;16:100986.
67. Fletcher JB, Kisler KA, Reback CJ. Housing status and HIV risk behaviors among transgender women in Los Angeles. *Arch Sex Behav*. 2014;43:1651–61.
68. Stone J, Fraser H, Lim AG, Walker JG, Ward Z, MacGregor L, et al. Incarceration history and risk of HIV and hepatitis C virus acquisition among people who inject drugs: a systematic review and meta-analysis. *Lancet Infect Dis*. 2018;18:1397–409.

69. Stone J, Artenie A, Hickman M, Martin NK, Degenhardt L, Fraser H, et al. The contribution of unstable housing to HIV and hepatitis C virus transmission among people who inject drugs globally, regionally, and at country level: a modelling study. *Lancet Public Health*. 2022;7:e136–45.
70. Degenhardt L, Grebely J, Stone J, Hickman M, Vickerman P, Marshall BDL, et al. Global patterns of opioid use and dependence: harms to populations, interventions, and future action. *Lancet*. 2019;394:1560–79.
71. TransActual. Trans lives survey 2021: enduring the UK's hostile environment. 2021. <https://static1.squarespace.com/static/5e8a0a6bb02c73725b24dc9d/t/6152eac81e0b0109491dc518/1632824024793/Trans+Lives+Survey+2021.pdf>.
72. Cass H. The Cass Review: independent review of gender identity services for children and young people. Final Report. London; 2024. https://cass.independent-review.uk/wp-content/uploads/2024/04/CassReview_Final.pdf.
73. Barbee H, Deal C, Gonzales G. Anti-transgender legislation—A public health concern for transgender youth. *JAMA Pediatr*. 2022;176:125.
74. Reisner SL, Pardo ST, Gamarel KE, Hughto JMW, Pardee DJ, Keo-Meier CL. Substance use to Cope with stigma in healthcare among U.S. female-to-male trans masculine adults. *LGBT Health*. 2015;2:324–32.
75. Levine S, Heiden-Rootes K, Salas J. Associations between healthcare experiences, mental health outcomes, and substance use among transgender adults. *J Am Board Family Med*. 2022;35:1092–102.
76. Matsuzaka S. Alcoholics anonymous is a fellowship of people: a qualitative study. *Alcohol Treat Q*. 2018;36:152–78.
77. Lyons T, Shannon K, Pierre L, Small W, Krüsi A, Kerr T. A qualitative study of transgender individuals' experiences in residential addiction treatment settings: stigma and inclusivity. *Subst Abuse Treat Prev Policy*. 2015;10:17.
78. Connolly DJ, Thayne B, Bayliss J, Hughes X, Holloway Z, O'Callaghan S, et al. Transgender and non-binary People's experiences with alcohol reduction in the UK: A cross-sectional study. *J Subst Use Addict Treat*. 2024;158:209246.
79. Harris M. Normalised pain and severe health care delay among people who inject drugs in London: adapting cultural safety principles to promote care. *Soc Sci Med*. 2020;260:113183.
80. Connolly DJ, Coduri-Fulford S, Tugulu C, Yalaw M, Moss E, Yang JC. Sexual orientation and gender identity reporting in highly cited current alcohol research. *LGBT Health*. 2024;11:340–7.
81. Office for Health Improvement & Disparities. NDTMS - National Drug Treatment Monitoring System. London. 2024. <https://www.ndtms.net/ViewIt/Adult>.
82. Office for National Statistics. Deaths related to drug poisoning in England and Wales: 2023 registrations. London; 2024. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtodrugpoisoninginenglandandwales/2023registrations#:~:text=In%20England%20and%20Wales%20C%205%20C448,has%20risen%20every%20year%20since>.
83. Streed CG, Navarra M, Beach LB, Phillips G, Hackenberger PN, Jordan S. Sex, sexual orientation, and gender identity data collection across electronic health record platforms: a national cross-sectional survey. *JAMIA Open*. 2024;7:ooae127.
84. Hines NG, Greene DN, Imborek KL, Krasowski MD. Patterns of gender identity data within electronic health record databases can be used as a tool for identifying and estimating the prevalence of gender-expansive people. *JAMIA Open*. 2023;6:ooad042.
85. Ada Lovelace Institute. 'The computer won't do that' Exploring the impact of clinical information systems in primary care on transgender and non-binary adults. London. 2024. <https://www.adalovelaceinstitute.org/wp-content/uploads/2024/09/The-computer-wont-do-that-Sept-24.pdf>.
86. ACON Health. Researchers - Demographic indicators. TransHub. Sydney. 2025. <https://www.transhub.org.au/allies/researchers#demographic-indicators>.
87. Hannan S, Freestone J, Murray J, Whitlam G, Shehata S, Henderson C et al. LGBTQ+ inclusive & affirming practice guidelines for alcohol, substance use, and mental health services and treatment providers (2nd Ed.). Sydney; 2022. https://nada.org.au/wp-content/uploads/2019/08/22200_AOD-and-MH-Inclusive-Practice-Guidelines-v3a_INTERACTIVE-new.pdf.
88. Freestone J, Mooney-Somers J, Hudson S. The sector is ready, and the community needs Australian alcohol and other drug treatment services to ask about sexuality and gender identity. *Drug Alcohol Rev*. 2022;41:39–42.
89. Cahill S, Singal R, Grasso C, King D, Mayer K, Baker K, et al. Do ask, do tell: high levels of acceptability by patients of routine collection of sexual orientation and gender identity data in four diverse American community health centers. *PLoS ONE*. 2014;9:e107104.
90. Ji CG, Cochran B. The availability of sexual and gender minority (SGM) specific substance use services. *Subst Use Misuse*. 2022;57(14):2126–33.
91. Glynn TR, van der Berg JJ. A systematic review of interventions to reduce problematic substance use among transgender individuals: a call to action. *Transgend Health*. 2017;2:45–59. <https://doi.org/10.1089/trgh.2016.0037>.
92. Chapa Montemayor AS, Connolly DJ. Alcohol reduction interventions for transgender and non-binary people: a PRISMA-ScR-adherent scoping review. *Addict Behav*. 2023;145:107779.
93. Dimova ED, O'Brien R, Elliott L, Frankis J, Emslie C. Exploring the experiences of alcohol service use among LGBTQ+ people in Scotland: a qualitative study. *Int J Drug Policy*. 2022;109:103859.

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