LGBT+ Drinkaware
A systematic scoping review of alcohol use amongst gender and sexual minorities

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Overview

This systematic scoping review uses the best available evidence (published and grey literature) to assess the prevalence of harmful drinking for LGBT+ people, causes and effects and related problems with reference to how alcohol use has changed over the life course, and at the intersections of age, ethnicity, gender and sexuality. Moreover, the review collates evidence on interventions and protective factors, to illustrate current practice in addressing the alcohol-related support needs of these communities in the UK.

Key questions

These are 1) What is the prevalence (measured between 2010-2021) of hazardous/harmful drinking among LGBT+ people in the UK? 2) How does alcohol use change among LGBT+ people in the UK throughout the life course? 3) What are the international interventions used between 2000-2021 to address alcohol-related support needs of LGBT+ communities?

Rationale

No recent comprehensive systematic scoping reviews exist to bring together relevant evidence on alcohol misuse for LGBT+ communities in the UK.

Methods

Two sets of inclusion criteria were developed. The first included published and grey literature available from 2010 on the prevalence of hazardous/harmful drinking among LGBT+ people in the UK and whether alcohol use changed through their life course. The second included published and grey literature from 2000 on any interventions used to address alcohol-related support needs of the LGBT+ communities in the UK and beyond. Database searches (and platforms) were performed in CINAHL (EBSCO), Central (Cochrane Library), Embase (OVID), MEDLINE (OVID), PsycINFO (EBSCO) and the Science Citation Index (Web of Science). Extensive searching of relevant charity websites, a private library of LGBT+ health research, citations from systematic and other reviews and relevant primary studies was made. Numerical and qualitative data was extracted from all relevant sources, with tables constructed from the data showing characteristics of included studies and their numerical results to enable comparison across studies. Risk of bias was by assessment of study design for prevalence studies and by CASP questionnaires for intervention studies. Two people conducted citation checking, data extraction and quality assessment (LZ and CM). Synthesis was through narrative description as meta-analysis was not appropriate.

Results

Question 1. What is the prevalence of hazardous/harmful drinking among gender and sexual minority communities in the UK?

Searches yielded 13 publications and 17 grey literature reports (29 studies in total). As alcohol misuse was reported in a wide variety of ways, no meta-analyses could be conducted, but in 19 studies of UK-based sexual orientation or LGBT+ populations compared to UK-based heterosexual populations, all had higher rates of alcohol use in sexual minority and LGBT+ populations compared to the heterosexual populations. From one study, rates in asexual people were lower than in allosexual people. No comparative trans/cisgender evidence was found but rates were apparently high when compared to average rates of drinking in the UK population. There was no information available on alcohol use in UK intersex people.

During the COVID-19 pandemic several UK LGBT+ charities enquired about alcohol use but there were no published studies on alcohol use in LGBT+ communities during this time. The relatively low quality data suggest more problems with alcohol misuse during the pandemic than beforehand. Where LGBT+ people reported increased alcohol use during lockdown, very few had access to alcohol use services during this period.

Question 2. How does alcohol use change among gender and sexual minorities in the UK throughout the life course?

Higher rates of excessive and regular alcohol use were found in younger LGB people and older LGB people, compared to their heterosexual peers. There is very little information regarding intersectional protected characteristics (such as age), and alcohol use. Evidence from before 2008 suggests that high rates of alcohol misuse have been prevalent in the LGB communities for many years with the worst drinking in women and in the younger age groups, but there is no early evidence on alcohol use in the trans, intersex or asexual communities in the UK.

There are a number of known risk factors or antecedents of alcohol misuse and dependence including: binge drinking; having at least one parent with alcoholism; having a mental health problem including anxiety, depression, and bipolar disorder; low self-esteem; stress; coming from a culture where alcohol abuse is comparatively common; and lack of family support in LGBT+ people. Whereas very limited evidence is available for LGBT+ people in the UK on how alcohol impacts rates of chronic illness, psychological or emotional problems, dementia, human papilloma virus (HPV)-based cancers, and HIV. There is very limited evidence that these conditions are more frequent in some LGBT+ people compared to heterosexual/cisgender people and how alcohol intake may impact these rates.

Question 3. Which international interventions have been used to address alcohol-related support needs of gender and sexual minority communities?

Searches yielded 24 publications and 5 grey literature reports (28 studies in total). There was some evidence on the effectiveness of various types of counselling specifically for alcohol misuse in sexual minorities, such as cognitive behavioural therapy combined with motivational interviewing, behavioural couple therapy, and modified behavioural self-control training. Several of these interventions showed some success. Interventions showing an awareness how, for some LGBT+ people, alcohol may be key to their socialisation, as well as interventions designed with involvement of LGBT+ people themselves as either practitioners or as peers, were perceived as more effective.

Although there are LGBT+ Alcoholics Anonymous (AA) meetings in the UK, there was no evidence found on the effectiveness of these. There was qualitative research on the experiences of UK people attending mainstream AA meetings. Some people from the USA found AA useful, particularly where they attended an LGBT+ AA meeting. The qualitative studies about UK LGBT+ people's experiences of attending these services showed some difficulties, with people anticipating or experiencing homophobia, biphobia and transphobia or other problems in meetings. Also, some encountered presumptions that alcohol or mental difficulties were due to sexual orientation or gender identity, difficulties with the religious overtones, and feeling intimidated by mainstream services that added additional stress.

There were several studies on the effectiveness of interventions for general wellbeing that were evaluated in relation to LGBT+ people and measured alcohol use. Some of these were novel interventions or promising practices, such as a game-based intervention for young people, and the introduction of an anti-homophobia policy, both of which showed positive

results, and some were more well-known interventions such as mindfulness and motivational enhancement. Some of these were successful in reducing alcohol consumption, particularly gay-straight alliances and anti-homophobia policies in schools, but some less so, such as mindfulness.

Protective factors against excessive alcohol use in LGBT+ people included social support, resilience and maintaining dignity, questioning social norms, having a supportive religious climate, and imagining a future without alcohol.

Conclusions

This systematic scoping review found good evidence to show that the prevalence of hazardous or harmful drinking amongst gender and sexual minority communities in the UK is higher than heterosexual and cisgender people across all ages and over a number of years, and that the COVID-19 pandemic may have made the situation worse. High alcohol intake can result in a number of physical and mental short- and longer-term problems and there is some evidence that these are more prevalent in LGBT+ people. Evidence suggests that mainstream counselling interventions may be effective in reducing harmful alcohol consumption, but very little of this research explores the experiences of trans, non-binary and intersex people. LGBT+ people encounter some difficulties with accessing mainstream programmes such as the AA, and that these could be more effectively tailored to address the specific needs of LGBT+ people. The ideal is for all service providers to ensure that alcohol services are LGBT+ inclusive, however where this is not attainable, services with a specific focus on LGBT+ communities are needed. Service providers should make every effort to foster an environment and treatment experience of affirmation and inclusivity by consulting with their local LGBT+ populations and by learning about LGBT+ people's lives where underlying societal or structural factors may have increased reliance on alcohol. UK-based cohort studies of alcohol use and RCTs of alcohol misuse interventions should incorporate sexual orientation and gender identity measures into their data collection and report the results. With more robust reporting, the evidence generated could be used to inform future policy, practice and research to address the specific alcohol-related health needs of LGBT+ people with the aim to achieve greater health equity for these diverse communities.

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Conflicts of Interest statement

The authors of this report hold no 'financial interest' or other relationships with the alcohol industry for any commercial products or providers of commercial and/or clinical services referred to in the text. Although the report was commissioned and funded by Drinkaware, the information and views set out in this report are those of the authors and do not necessarily reflect the opinion of Drinkaware.

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List of abbreviations

95%CI	95% Confidence Intervals
AA	Alcoholics Anonymous
ACOA	Adult Children of Alcoholics
aOR	Adjusted Odds Ratio
AUD	Alcohol Use Disorder
AUDIT	Alcohol Use Disorders Identification Test
AUDIT-C	Alcohol Use Disorders Identification Test - Consumption
AIDS	Acquired Immune Deficiency Syndrome
AUDIT	Alcohol Use Disorder Identification Test
BAME	Black, Asian and Minority Ethnic
CASP	Critical Appraisal Skills Programme
CBT	Cognitive Behavioural Therapy
CES-D	Center for Epidemiologic Studies Depression Scale
COVID-19	Coronavirus disease 2019
CMO	Chief Medical Officers
EQuIP	Empowering Queer Identities in Psychotherapy
GSA	Gay Straight Alliance
HIV	Human Immunodeficiency Virus
ILGA	International Lesbian, Gay, Bisexual, Trans and Intersex Association
LGB	Lesbian Gay and Bisexual (i.e. sexual orientation)
LGBT+	Lesbian, Gay, Bisexual, Trans, Queer, Non-binary, Intersex, Asexual, Unsure etc.
MI	Motivational Interviewing
MSM	Men who have Sex with Men
MUP	Minimum Unit Pricing
NATSAL	National Survey of Sexual Attitudes and Lifestyles
NDRS	National Disease Registration Service
NESARC	National Epidemiologic Survey on Alcohol and Related Conditions
OII Europe	Organisation Intersex International Europe
ONS	Office for National Statistics
OR	Odds Ratio
PECOS	Participants, exposure, comparator, outcomes, study design
PHE	Public Health England
PICOS	Participants, intervention, comparator, outcomes, study design
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PTSD	Post-Traumatic Stress Disorder
RCT	Randomised Controlled Trial
SD	Standard Deviation
TNB	Trans and Non-Binary

Glossary of key terms

The glossary provides definitions for some of the most commonly terms used throughout this report. The recommended safe drinking levels can be found here: www.drinkaware.co.uk

Recommended drinking levels	The UK Chief Medical Officers (CMOs) advise that it is safest to drink no more than 14 units of alcohol per week, whilst limiting the amount of alcohol consumed in any one sitting.
Minority stress theory	First developed by Meyer in 2003, this theory links the chronically high rates of stress felt by people in stigmatised minority groups, due to prejudice and discrimination, to stress responses over time leading to higher rates of poor mental and physical health.

Most of the following terms are based on ILGA-Europe's most commonly used phrases and acronyms, most of which can be found here: www.ilga-europe.org/resources/glossary. The definition for heterosexism can be found in Amadio 2006. Other terms (allosexual/asexual) are from Wikipedia.

Allosexuality	Anyone who feels sexual attraction for other people is considered allosexual. Allosexual people may have any sexual orientation.
Asexuality	Asexuality is the lack of sexual attraction to others, or low or absent interest in or desire for sexual activity.
Gender	Refers to people's internal perception and experience of maleness and femaleness, and the social construction that allocates certain behaviours into male and female roles.
Gender expression	Refers to people's manifestation of their gender identity. Typically, people seek to make their gender expression or presentation match their gender identity/identities, irrespective of the sex that they were assigned at birth.
Gender identity	Refers to each person's deeply felt internal and individual experience of gender, which may or may not correspond with the sex they were assigned at birth.
Gender reassignment	Refers to the process through which people re-define the gender in which they live in order to better express their gender identity. This process may, but does not have to, involve medical assistance including hormone therapies and any surgical procedures that trans people undergo to align their body with their gender.
Intersex	Relates to a range of physical traits or variation that lie between binary 'ideals' of male and female. Intersex people are born with physical, hormonal or genetic features that are neither wholly female nor wholly male; or a combination of female and male; or neither female nor male. Many forms of intersex exist; it is a spectrum or umbrella term, rather than a single category.
Heteronormativity	Refers to the set of beliefs and practices that gender is an absolute and unquestionable binary, therefore describing and reinforcing heterosexuality as a norm. It implies that people's gender and sex characteristics are by nature and should always be aligned, and therefore heterosexuality is the only conceivable sexuality and the only way of being 'normal'.
Heterosexism	A set of negative attitudes and affects towards homosexuality in other persons and oneself.
LGBT+	An umbrella term referring to people who identify as lesbian, gay, bisexual, trans, non-binary, queer, asexual or intersex

Sex characteristics	A term that refers to a person's chromosomes, anatomy, hormonal structure and reproductive organs. OII Europe (Organisation Intersex International Europe) and its member organisations recommend protecting intersex individuals by including sex characteristics as a protected ground in anti-discrimination legislation. This is because many of the issues that intersex people face are not covered by existing laws that only refer to sexual orientation and gender identity. This is seen as being a more inclusive term than 'intersex status' by many intersex activists, as it refers to a spectrum of possible characteristics instead of a single homogenous status or experience of being intersex.
Sexual orientation	Refers to each person's capacity for profound affection, emotional and sexual attraction to, and intimate and sexual relations with, individuals of a different gender or the same gender or more than one gender.
Trans	Is an inclusive umbrella term referring to those people whose gender identity and/or a gender expression differs from the sex they were assigned at birth. It includes but is not limited to: men and women with transsexual pasts, and people who identify as transsexual, transgender, transvestite/cross-dressing, androgyne, polygender, genderqueer, agender, gender variant or with any other gender identity and/or expression which is not standard male or female and express their gender through their choice of clothes, presentation or body modifications, including undergoing multiple surgical procedures.

SECTION ONE: Background

1.1 Introduction

The passing of the Equality Act (2010) marks the steady progress that has been made in the UK to secure the fundamental rights of gender and sexual minority people. However, following the protection of same sex partnerships and gender change in the UK, USA, and Europe in more recent years (e.g. in the UK 2010), there is now an increasing backlash across the world against what is termed 'gender ideology'. With national resolutions passed in Denmark, Romania and Poland in opposition to excessive activism within academic research and teaching environments (including gender studies, race theory and postcolonial studies), 'gender ideology' associated with progressive cultural and social influences related to gender and sexuality are seen by some to threaten traditional family values, religious beliefs and local cultures (Butler 2021). In these settings, counter ideologies are often perceived as nationalist, homophobic and transphobic, pose a serious risk to legislation protecting the partnerships and lives of lesbian, gay and bisexual, trans, non-binary, queer, asexual and intersex people (LGBT+).

1.1.1 Health inequalities in sexual and gender minorities

There is an increasing awareness of the need to address the health and social inequalities experienced by gender and sexual minority groups both in the UK and internationally (Blosnich et al 2013; Meads et al 2012; McDermott et al 2021; Reisner et al 2016; Zeeman et al 2019; Zeeman & Aranda 2020). Indeed in the UK, a recent analysis of the English GP Patient Survey continues to find considerable mental health inequalities for LGB people compared to heterosexual peers (Saunders et al, 2021), whilst the impact of the Covid-19 pandemic in the UK will have exacerbated health inequalities in these communities (McGowan et al 2021).

1.1.2 Alcohol misuse and associated problems in gender and sexual minorities

Health inequalities regarding substance misuse are more pronounced for LGBT+ people compared to the general population. In a systematic review of international research on substance use amongst LGB young people up to the age of 25, Goldbach et al. (2014), found higher rates of substance use (almost three times) for alcohol, tobacco, marijuana, cocaine and ecstasy by LGB youth compared to heterosexual young people. Whilst research with trans people, consistently indicate a high prevalence of HIV, mental distress and substance use (Reisner et al, 2016), data reporting on alcohol use were found to be variable and heterogeneous.

More recent UK reports by the LGBT Foundation (2020, 2021), the ONS (2021), the Institute of Alcohol Studies (2021) and Bachmann (2018) suggest that alcohol use is significant amongst LGBT+ groups. These findings raise several questions around the impact and prevalence of alcohol use amongst LGBT+ people, and the interventions available to address excessive use of alcohol.

1.1.3 Measuring alcohol misuse

One of the main issues with describing prevalence of alcohol misuse and dependence is that there are numerous different measures of alcohol use. UK Chief Medical Officers use the numbers of units of alcohol drunk, one unit being the alcohol in a single shot of spirits and three units being the alcohol in a pint of beer or cider. The current recommended level is 14 units or less per week, and for binge drinking 6 units per week for women and 8 units per week for men. How these binge drinking levels apply to trans men and women is unclear. The

Alcohol Use Disorder Identification Test (AUDIT) comprises 10 questions measuring an individual's level of risk and/or harm in relation to alcohol consumption patterns. Each item carries a score of 0–4, which gives an overall AUDIT score between 0 and 40 (zone 1: low risk (0–7), zone 2: hazardous and zone 3: harmful (8-14), zone 4: dependency (15+). Continuous measures found in research include the number of drinks containing alcohol per week or per month, AUDIT scores and the number of occasions in a month when an individual has exceeded the recommended alcohol limit. Categorical measures include whether or not an individual has had an alcoholic drink in the previous week, whether or not they have had a binge drinking episode in the previous week or not, and whether or not they have exceeded a specific AUDIT or AUDIT-C score.

When assessing levels of alcohol use in a specific population (such as LGBT+ communities), it is important to have equivalent levels in the comparator population. Through this, one can tell if alcohol use is higher, lower or no different. Where there are no comparators, one is implicitly comparing the figures with what one would consider as normal, but for which population? Implicit comparisons contain a host of presumptions about what is considered to be normal, and normal for one observer might be quite different to normal for another. Therefore it is wisest to base assessment of alcohol misuse on studies where an appropriate comparator population has been assessed. In this situation, alcohol use levels in sexual minorities could be compared to levels in heterosexuals, and alcohol use levels in trans people compared to those in cisgendered people. Where a specific event has occurred (such as the COVID-19 pandemic), it would also be appropriate to compare levels in the same group before, during, and after such an event.

1.1.4. Existing evidence on interventions for alcohol use and UK policy

There are two relevant Cochrane systematic reviews on interventions for alcohol use in the general public. One is on brief alcohol interventions for the general population (Kaner et al 2018), and one is on the effectiveness of Alcoholics Anonymous (AA) and other 12-step programmes for alcohol use disorder for the general population (Kelly et al 2020). Neither include anything on sexual orientation or gender identity. Further details are available in Appendix 1 (p.88).

In 2019, 54% of adults (59% men and 50% women) in England reported drinking alcohol in the previous week. Men drank more frequently than women (13% compared with 8% had drunk on at least five days in the previous week). Adults aged 45-64 were more likely to exceed the weekly limits, with 37% of men and 19% of women drinking over 14 units of alcohol in a week. Younger adults, aged 16-24, were the least likely to drink in excess of 14 units per week (19% of men and 11% of women) (Zambon 2021).

More broadly the impact of the harms caused by alcohol in the UK are considerable, with the most recent figures showing that alcohol-related harm is estimated to cost the NHS £3.5bn annually, whilst alcohol-related crime costs the country £11.4bn per year (Thomas 2021). In England and Wales, 7544 deaths were directly attributable to alcohol during 2019 (Zambon 2021). National, regional and local responses to substance use are shaped by central government policy. The UK Government's existing Alcohol Strategy (2012) is driven by concern about the effects of alcohol use on communities, combined with the crime associated with alcohol abuse. Strategy objectives are to reshape the approach to alcohol and reduce the number of people drinking to excess with; 1) a reduction in the amount of alcohol-fuelled violent crime; 2) a reduction in the number of adults drinking above the NHS guidelines; 3)

a reduction in the number of people "binge drinking"; 4) a reduction in the number of alcohol-related deaths; and 5) a sustained reduction in both the numbers of 11–15 year olds drinking alcohol and the amounts consumed. The strategy names a range of populations such as ex-prisoners, rough sleepers, survivors of childhood abuse, and young drinkers that may be more likely to experience other problems, such as mental illness, drug use, and homelessness.

A report by the Commission on Alcohol Harm (Fernandez et al 2020) called for a comprehensive 'science-led' alcohol strategy where stakeholders work towards systemic change in partnership with industry, policy makers, policing, local government, the NHS, crime prevention services and the voluntary sector to prevent and address alcohol-related harm. The report mentions encouraging progress around the introduction of minimum unit pricing (MUP) for alcohol in Scotland and Wales, where MUP has led to a reduction in alcohol consumption in Scotland. Public Health Scotland found a net reduction in off-trade alcohol sales of 4-5% in the initial twelve months compared to England where MUP has not been implemented. The UK Government proposed measures in the Autumn Budget (UK Gov 2021a) to help people with the cost of living, and to sustain smaller alcohol producers and industries in Scotland, Wales and Northern Ireland by freezing rates of duty on alcohol (for another year). The simplified system is intended to reduce the main duty rates on alcohol from 15% to 6% in direct proportion to the alcohol content of drinks. Beverages will be taxed according to their alcohol content, where higher strength alcoholic drinks attract higher duties, including stronger red wines, fortified wines, and high-strength ciders. Lower strength drinks such as rosé, fruit ciders, and liqueurs will attract a lower tax rate to address the problem of harmful high-strength products being sold too cheaply (UK Gov 2021b). Duty rates on draught beer and cider will be cut by 5% to recognise the importance of pubs. Regarding low strength drinks below 3.5%, manufacturers are encouraged to develop new products with lower alcohol content, giving consumers greater choice and greater options to drink responsibly. Although the lower rates are timely during a period of economic recovery following the Covid-19 pandemic, the impact of an overall reduction in alcohol duty on public health is not yet known.

The UK Parliament's Women and Equalities Select Committee enquiry report on 'Health and Social Care and LGBT Communities' (2019), provided guidance to Public Health England and other stakeholder organisations confirming the need to assess disparities such as alcohol abuse (annually) for LGBT+ people. Measures proposed in this report (UK Gov 2019), combined with the Autumn Budget (UK Gov 2021a), and the existing national Alcohol Strategy (2012), fall short by not taking account of social practices where alcohol is normalised in certain social and cultural contexts, whilst individuals may suffer harm and stigma behind closed doors due to the impact of alcohol. Neither are the practices and contexts for problem drinking considered amongst different groups such as gender and sexual minorities, ethnic minorities, young women and older men. Within a contemporary strategy, much scope exists to address the alcohol-related needs of minority populations including LGBT+ people.

1.1.5 Services

Alcohol services in England have been provided by local authorities rather than the NHS over the past ten years, with significant cuts to budgets. As a result, third sector providers play an increasingly important role in providing these services. Mainstream services and interventions may not always take account of the specific health needs of LGBT+ people. Somerville (2015) reported that frontline staff often did not consider sexual orientation and gender identity as relevant to the care of LGBT+ people. For frontline workers in general services, 61% of care

workers did not consider sexual orientation as relevant to the specific health needs of a person who sought support (see Figure 1).

Figure 1. Practitioner views of sexual orientation relevance to health needs

Source: UK Gov 2019. Health and Social Care and LGBT communities report, from a contribution by Stonewall.

Where service providers considered gender identity or sexual orientation being irrelevant to health needs, specific health needs of LGBT+ people may be overlooked. The Health and Social Care and LGBT communities report stated

> *"…while LGBT-specific services play a vital role in the health and social care landscape at the moment, these services often exist because mainstream services are not yet fully inclusive. These services should continue to be sustained and supported for as long as they are needed. In the meantime, the priority should be for mainstream services to become inclusive to the needs of the LGBT communities".*

The ideal would be for all mainstream service providers to ensure that services are LGBT+ inclusive, however where this is not attainable, services with a specific focus on LGBT+ communities may be needed.

Addiction services in the UK are overstretched, with the Government pledging an increase in expenditure above the baseline to fund a range of high-quality drug and alcohol treatment and recovery services (UK Gov 2021a). The role of digital technologies, messaging apps and online meetings is increasing, particularly during the Covid-19 pandemic where some Alcoholics Anonymous (AA) groups moved online using Zoom instead of having the normal face-to-face meetings (Thomas 2021). As new services and delivery models emerge and interventions change, an assessment is required of the evidence-based to determine the most useful interventions for gender and sexual minority populations.

1.2 About this systematic scoping review

To date there has not been a systematic scoping review on the prevalence of alcohol misuse in LGBT+ communities in the UK or on interventions for LGBT+ people as a whole. Four systematic reviews relevant to LGBT+ people were identified in the project searches, which focused mostly on interventions to reduce harmful alcohol use for specific populations including:

- Alcohol interventions for trans people (Glynn and van den Berg 2017)

- Substance use treatments for sexual minority women (McGeough et al 2021b)
- Covid in LGBT+ people (McGowan et al 2021)
- Alcohol interventions for MSM (Wray et al 2016).

There are also two Cochrane Reviews on alcohol use (Kaner et al 2018, Kelly et al 2020) but neither report any outcomes for LGBT+ people. Therefore, this current systematic scoping review serves to fill that gap in order to promote understanding of these key issues relevant to policy, research and practice.

1.3 Review questions

This present review addressed the following questions:

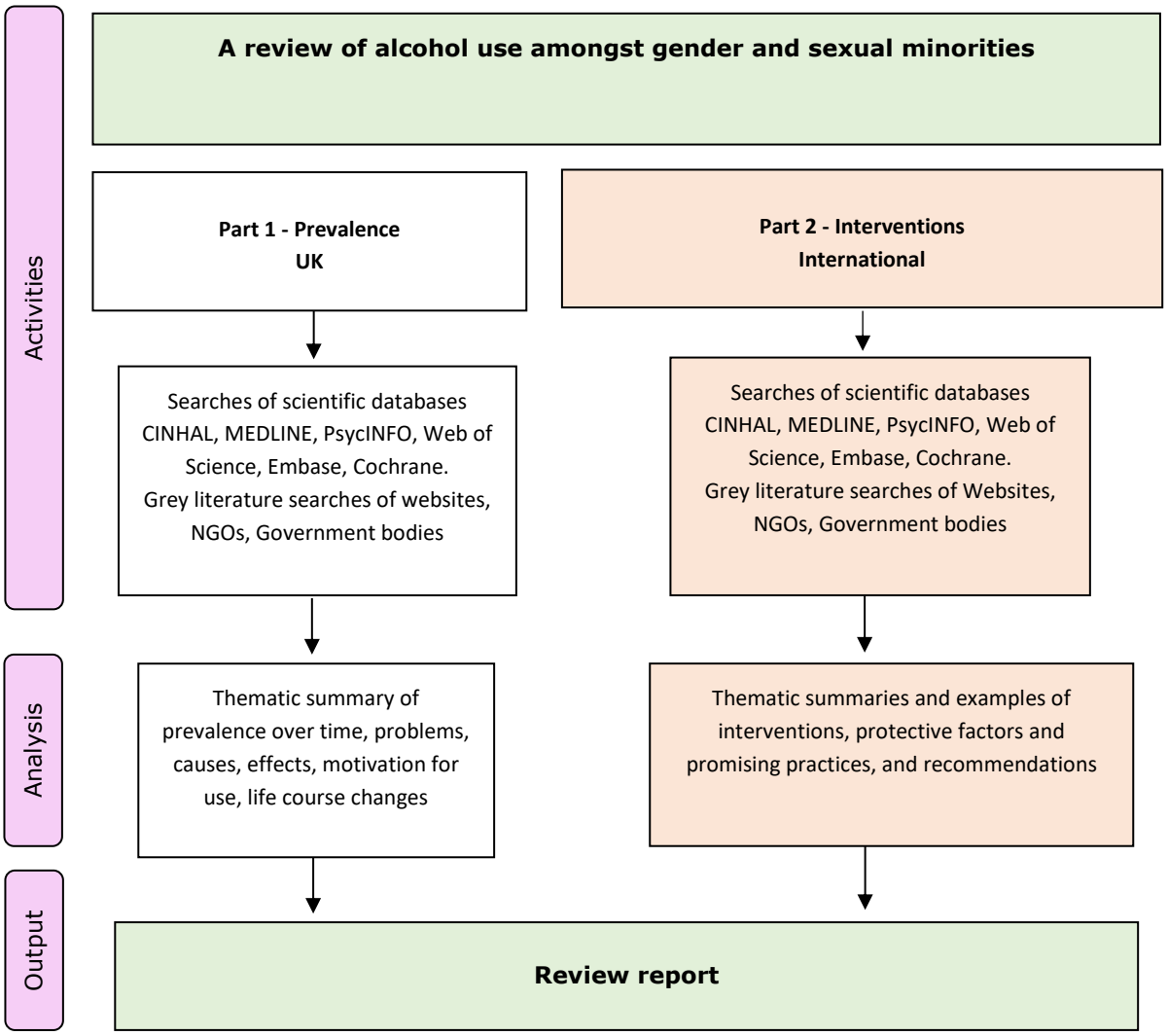
1. What is the prevalence of hazardous/harmful drinking among gender and sexual minority communities in the UK? (Review Part 1)
2. How does alcohol use change among gender and sexual minorities in the UK throughout the life course? (Review Part 1)
3. What are the international interventions or promising practice utilised to address the alcohol related support needs of gender and sexual minority communities? (Review Part 2)

The questions were addressed via the following key activities (see Figure 2, next page):

- A systematic scoping review of relevant UK primary research and grey literature from 2010 to 2021, looking at prevalence among gender and sexual minorities (including during the Covid-19 pandemic) and how alcohol use changes throughout the life course. (Research Question 1 and 2, Review Part 1)
- A systematic scoping review of relevant international research literature on interventions for the alcohol-related support needs of gender and sexual minority communities from 2000 to 2021. (Research Question 3, Review Part 2)

The variation in dates was selected because prevalence is likely to change over time, so the most up to date UK-relevance will be the most useful. Interventions in the UK and beyond, on the other hand, are likely to have consistent effectiveness over time, and as there is less information on interventions a longer time base was selected.

Figure 2. Overview of the systematic scoping review



1.3.1 Terminology

Whilst undertaking this review, it became apparent that in some of the papers used terminology around sexual orientation and gender identity that is not commonly used in the UK. Throughout this report, the term 'sexual orientation' is used in relation to people who identify as lesbian, gay or bisexual and 'gender identity' is used in relation to people who identify as trans, non-binary or queer. These terms are aligned to language reflected in policy directives and third sector recommendations (e.g. see glossary). However, language use regarding sexual orientation and gender identity has changed over time and across continents, and when reviewing research publications and grey literature reports, it is arguably important to stay true to the descriptions used in them. Certain sections in this report refer specifically to LG, LGB or LGBT people instead of LGBT+ people to acknowledge the original research participants in the particular studies. This highlights the lack of research for specific populations such as trans and non-binary+ people compared to LGB people.

Recruitment for research with LGBT+ people can be challenging due to a range of identities people may assume and the language they use to describe themselves as which can include 'heterosexual', 'gay', 'lesbian', 'bisexual', 'trans', 'non-binary', 'queer', 'intersex', 'other', 'pansexual', 'prefer not to say', 'unsure' or 'undecided'. Although these terms may reflect the

diverse ways LGBT+ people identify, terms such as 'queer' or 'non-binary' indicate how some people may resist labels such as lesbian, gay, bisexual or trans that were historically associated with marginalisation. This systematic scoping review is conducted with an awareness of the potential constraints of referring to limiting identity categories as argued in queer theory, poststructuralism, and feminism. However, we acknowledge the usefulness of recognised terms during a review of the prevalence and impact of alcohol use on LGBT+ people's lives. The knowledge gained of alcohol use amongst these communities with the related interventions may inform future research, service delivery, and policy initiatives.

SECTION TWO: Systematic scoping review protocol, methods used, search results and notes on interpretation

2.1 Introduction

This section presents the methods and process used to conduct this systematic scoping review. It includes inclusion/exclusion criteria, details of the search strategies used, quality assessment, data extraction, and synthesis methods. The protocol for this review was contained within the proposal submitted to Drinkaware with the methods from this reproduced in Appendix 2.

2.2 Methods

This systematic scoping review maps and synthesises knowledge of alcohol use amongst gender and sexual minorities. A systematic review or meta-analysis was not conducted (or appropriate) due to heterogeneity of the study questions and range of evidence available (Tricco et al 2015). The methods used here are reported according to the PRISMA statement (Moher, et al, 2009, Page et al 2021).

2.2.1 Inclusion criteria

There are three parts to this review – one on prevalence, and one on interventions and promising practices; each has slightly different methods. The inclusion criteria use the PECOS (participants, exposure, comparator, outcomes, study design) or PICOS (participants, intervention, comparator, outcomes, study design) framework where appropriate.

Review Part 1. The inclusion criteria for the prevalence review are based on the PECOS framework:

- Participants: sexual and gender minority people in the UK, including any intersectional measures such as other protected characteristics (Equalities Act 2010)
- Exposure: harmful alcohol use at any time including during the COVID-19 pandemic
- Comparator: heterosexual/ cisgender people (where available)
- Outcomes: any type of prevalence measure regarding alcohol misuse or problem drinking, qualitative quotes about issues to do with problem alcohol use.
- Study design: primary studies - cross-sectional surveys, cohort studies (where available). Reported in published or grey literature from 2010 onwards.

Review Part 2. The inclusion criteria for the interventions review are based on the PICOS framework:

- Participants: sexual and gender minority people anywhere in the world
- Intervention: interventions and promising practices targeting harmful alcohol use
- Comparator: another intervention, no intervention, the same intervention in heterosexual or cisgender people (where available)
- Outcomes: any relevant outcomes recording alcohol misuse or problem drinking such as AUDIT questionnaire results, qualitative quotes about issues to do with trying to access problem alcohol use interventions. Since there is little research into UK LGBT+ population's alcohol misuse, all measures of alcohol intake have been reported in the results tables.
- Study design: primary studies – any comparative quantitative studies that have measured sexual orientation and/or gender identity (particularly randomised

controlled trials (RCTs), cohort studies) and qualitative or mixed methods studies. Reported in published or grey literature from 2000 onwards.

Excluded were studies where sexual orientation and gender identity were not clearly defined, prevalence and outcomes mixed alcohol and drug use and results could not be clearly separated, or where papers are solely theoretical, opinions, editorials or case reports. For the prevalence review, studies were excluded where there were no clear prevalence statistics recorded. For the interventions review, studies were excluded if reporting the availability of alcohol use interventions for people living outside the UK.

The prevalence evidence for Review Part 1 was limited to 2010 onwards and for the UK only because prevalence can change over time and across different countries. The effectiveness of interventions and promising practices evidence for Review Part 2 is much less likely to change over time, and across different countries when compared to prevalence estimates hence the extended timeframe from 2000 onwards worldwide.

2.2.2 Search strategy

The searches were conducted with the support of a university librarian, where both sensitivity of the search (a broad search scope with a large number of hits) was considered alongside the specificity of the search (a narrow targeted search), and also with an LGBT+ subject expert in order to obtain as much relevant literature as possible within the time frame available.

The prevalence searches were undertaken in six electronic databases (MEDLINE, Embase, Web of Science, PsycINFO, CINAHL) and the Cochrane Library in October 2021. Google Scholar was searched and also Google – with the first 100 hits investigated. Websites of known LGBT+ charities in the UK (such as LGBT Foundation, London Friend, Sigma Research, Stonewall London and Cardiff, GIRES, Brighton Switchboard etc) and mental health and alcohol charities (such as Drinkaware, Mind, Alcoholics Anonymous, Institute of Alcohol Studies etc) and the Office for National Statistics website were searched for includable evidence. Relevant systematic reviews and references of included papers were checked to identify further relevant primary research articles. Hand searching informed by existing knowledge and experience of the team, found information that may be harder to reach, for example in grey literature reports or in reports on government websites.

Search terms and appropriate synonyms (MeSH terms) included gender minorit*, sexual minorit*, LGBT+, LGBT, LGB, lesbian, gay, bisexual, trans, queer, +, intersex, non-binary, alcohol*, harm, hazardous, prevalence, incidence, causes, effects, motivation, age, ethnicity, intersect* etc.

For the interventions review searches were also undertaken in six electronic databases (MEDLINE, Embase, Web of Science, PsycINFO, CINAHL) and the Cochrane Library in October 2021. Google Scholar was searched, and any relevant interventions evidence found during the prevalence searches added to the interventions list. Relevant systematic reviews, other reviews and references of included papers were checked to identify further relevant primary research articles. Hand searching informed by existing knowledge and experience of the team, again found information that may be harder to reach, for example in grey literature reports or in reports on government websites.

Search terms and appropriate synonyms (MeSH terms) included gender minorit*, sexual minorit*, LGBT+, LGB, lesbian, gay, bisexual, trans, queer, non-binary, AND alcohol*, AND treatment, intervention etc.

Due to the broad scope of the review questions, database searches were revisited a number of times to address gaps in the identified papers for specific sub-populations for example trans, non-binary or intersex people. These iterative search measures were used to ensure each of the questions were covered in sufficient depth.

In addition to the database searches for publications, a number of other sources were searched for relevant reports. Websites checked included those for Allsorts, Birmingham LGBT, Brighton LGBT+ organisations, Bristol LGBT, Cardiff LGBT, GIRES, LGBT Consortium, LGBT Foundation Manchester, LGBT Hero, Metro London, Mind Out, Newcastle LGBT, Nottingham LGBT, Opening Doors London, Stonewall and Stonewall Wales. The following systematic reviews were mined for includable primary studies: Kaner et al 2018, Kelly et al 2020; Glynn et al 2017; McGeough 2021; McGowan et al 2021; Wray et al 2016.

2.2.3 Data extraction, quality assessment and synthesis strategy

Once studies were identified via the searches, database management software (EndNote) was used to allow storage of the primary research citations, to keep track of them, to identify included and excluded studies, and to detect duplicates.

A master table was created in Endnote and Word containing key information from each of the selected studies including: health topic, time range of the search, year published, geographical scope, the LGBT+ subpopulation, methods employed, scientific journal or grey literature etc. Quality assessment for prevalence studies was assessed by study design, whether the sample was a random, consecutive or a convenience sample, whether there was a comparator and whether there was any statistical analysis of the results. For intervention studies, quality was assessed by using CASP (Critical Appraisal Skills Programme) criteria, depending on the study design.

Synthesis was principally qualitative and by using tables to present results. Meta-analysis was not appropriate for the prevalence section as so many of the studies reported by different subsections of the sexual orientation population (LGBT+, LGBT, LGB, or gay and bisexual men, or lesbians and bisexual women, or lesbian and gay women and men, or bisexual women and men) and there were insufficient results for the trans, non-binary and intersex population, and also because of a wide variety of both categorical and continuous alcohol outcomes reported. There were insufficient results in the interventions section to conduct meta-analyses.

2.3 Search results

Initial searches generated 8,202 publications. The PRISMA flow diagrams for the prevalence searches and the interventions and promising practices sections are shown in Figure 3 and Figure 4. Note that one study may be reported in more than one publication or grey literature report, and that a single publication or grey literature report may provide details of more than one study.

Figure 3. PRISMA flow diagram for the identification of studies included in the prevalence sections (chapters 3 and 4)

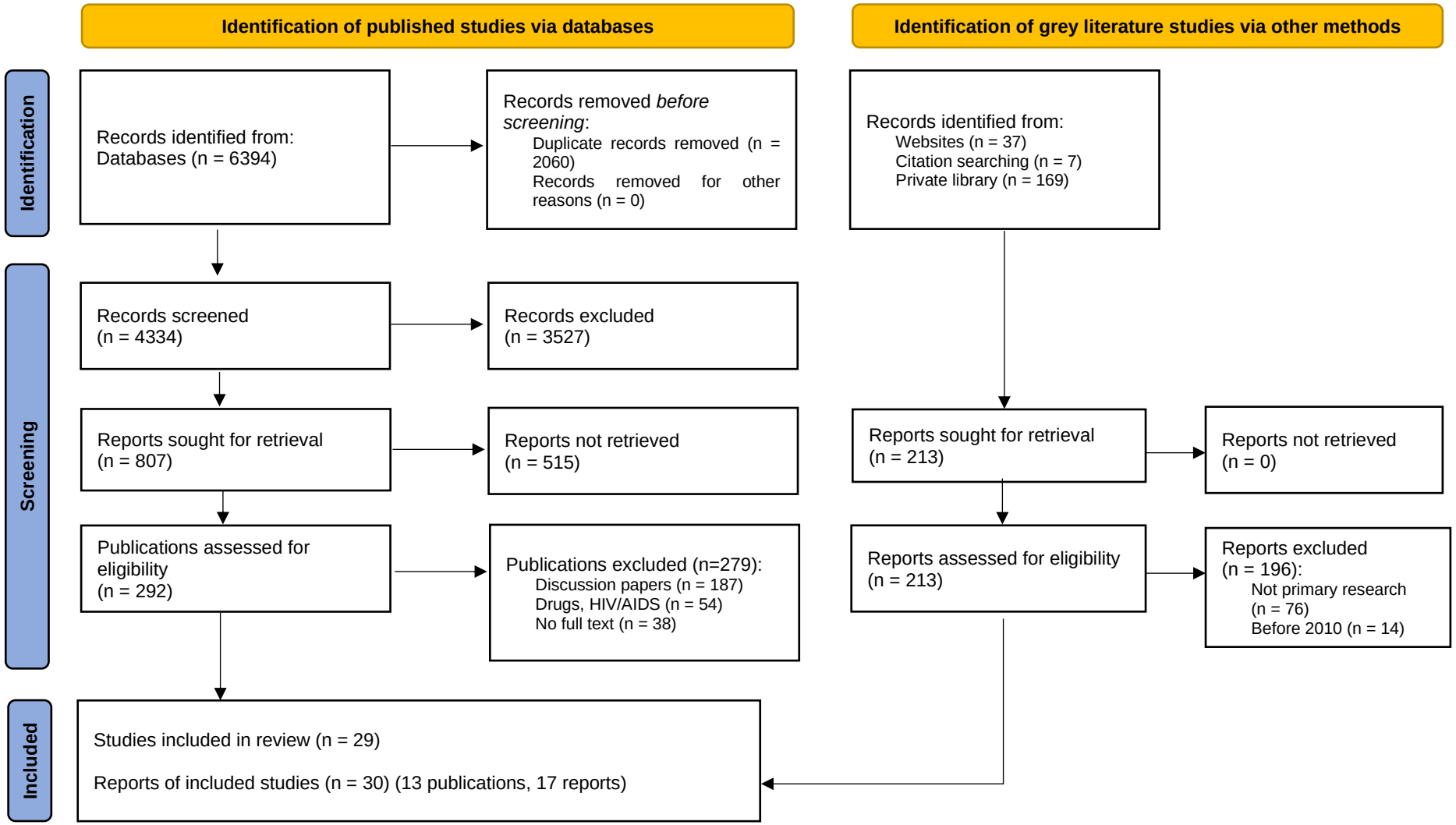
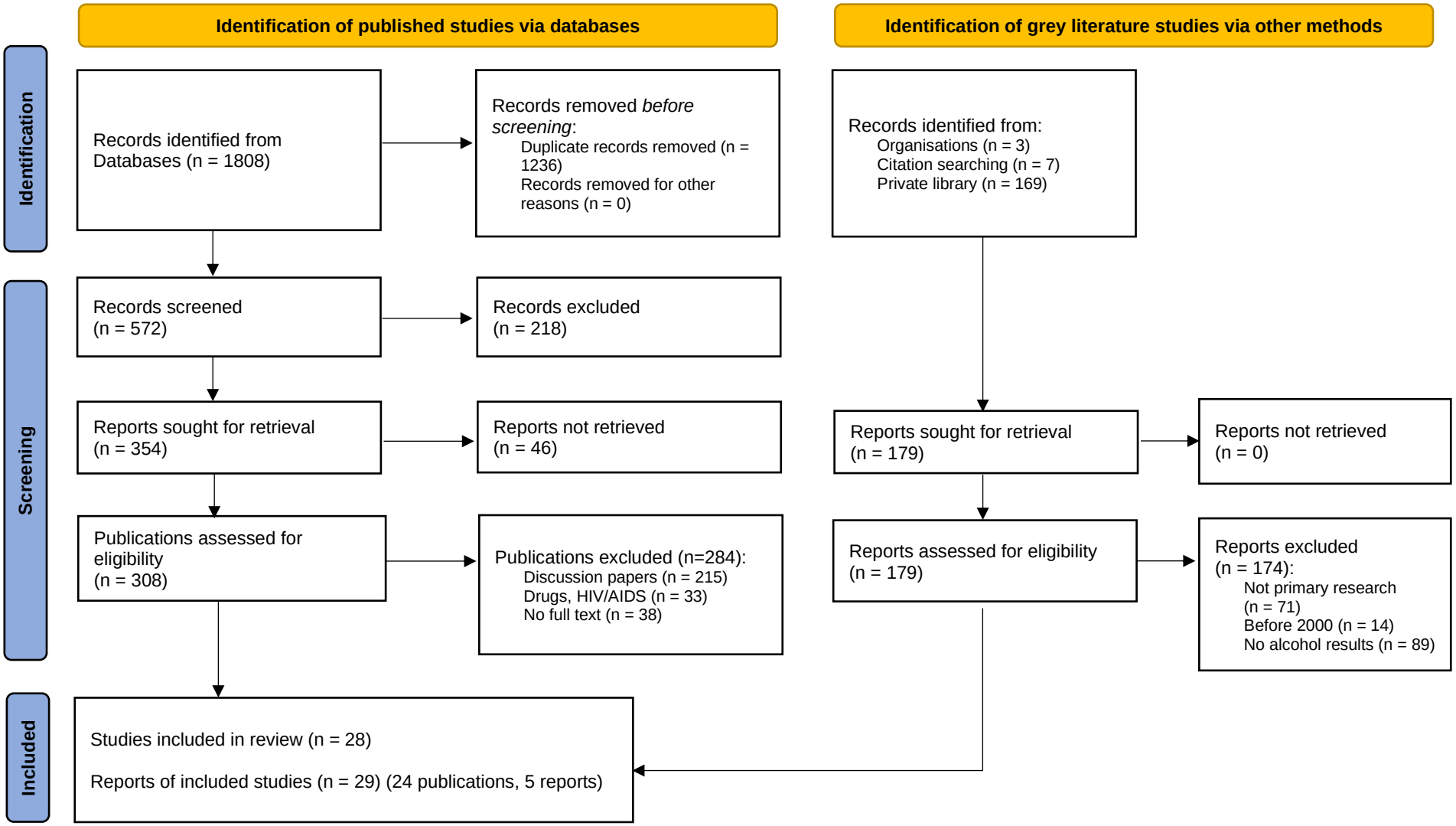


Figure 4. PRISMA flow diagram for the identification of studies included in the interventions and promising practices sections (chapter 5)



2.4 Notes on interpretation of results

Prevalence is the number of individuals with a condition (such as harmful alcohol use) at a given point in time or in a defined time interval and is usual given by percentages. Where you have a small sample size the estimated prevalence may be quite different from the true prevalence of that population, purely by accident. If you had a much bigger sample, it is expected that the estimated prevalence will be much closer to the true population prevalence.

If you have two population groups with a percentage prevalence for each, a measure of spread can be used to define whether the two percentages are statistically significantly different from each other. Measures of spread that can be used to describe a normal distribution include standard deviations and confidence intervals. By convention the most commonly used confidence intervals are 95% confidence intervals (95%CI), defined as the range of values where after repeated sampling, 95% of the estimates lie within that range of values. Significance tests are probabilities that lead the experimenter to reject the null hypothesis of a test between 2 or more samples. By convention p=0.05 (i.e. 5%) is usually used as a cut-off point to accept or reject the null hypothesis. Where 95% confidence intervals of two samples do not intercept, this can also be used to reject the null hypothesis and show that the two samples are statistically significantly different from one another. These can be illustrated in the diagram below. The top of each bell-shaped curve represents the point prevalence, and the width of the curve represents the 95% confidence interval. In general, the larger the group size, the narrower the 95% confidence intervals.

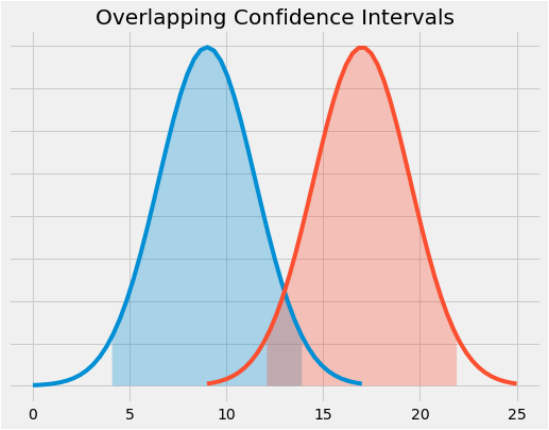


Diagram 1. Demonstrating confidence intervals for two samples

Using 95% confidence intervals is a good way of demonstrating whether the alcohol misuse prevalence in the LGBT+ community is statistically significantly different to that in the heterosexual/cisgender community, or not.

Comparing results from two groups can be done in a variety of ways. The most straightforward is to give the percentages in each of the groups. Another way is to combine the two percentages into one number – called a ratio. The odds ratio (OR) is commonly used to describe relative prevalence and is the odds of the condition in one group divided by the odds of the condition in the other. An OR of 1 means that there is no difference between the two groups (i.e. anything divided by itself=1). When calculating ORs, 95% confidence intervals are also calculated. If these intersect 1, there is statistically significant difference between the two groups. So for example, an OR=1.5 (95%CI 1.2 to 1.7) indicates that the target

group has 1.5 times the rate of harmful drinking and it is statistically significantly higher than the control group.

Rates of drinking and other factors typically vary depending on a number of factors such as age, gender, socioeconomic class, education, etc. When calculating ORs statisticians typically control for one or more of these factors, to give a more realistic comparison of harmful drinking rates. This is known as adjustment and will give an adjusted odds ratio (aOR) and adjusted 95%CIs.

SECTION THREE: The prevalence of hazardous/harmful drinking amongst gender and sexual minority communities

3.1 Introduction

This section presents results of research from 2010 to 2021 on the prevalence of harmful drinking or alcohol misuse for sexual and gender minority people in the UK, and evidence around prevalence over time, including during the COVID-19 pandemic (research question 1). We also review the prevalence of the types of problems that co-exist with alcohol misuse and known risk factors or antecedents and evidence of them in the sexual gender minority communities. Change in alcohol use amongst gender and sexual minorities throughout the life course is presented in Section 4 (research question 2). These two sections give the results of **Review Part One** on prevalence.

The following research on prevalence was included:
Publications: Amos et al 2020, Bauer et al 2020, Becares et al 2021, Bloomfield et al 2011, Booker et al 2017, Bourne 2016, Chakraborty et al 2011, Haggar-Johnson et al 2013, Pesola et al 2014, Pitman 2021, Rimes et al 2019, Shahab et al 2017, Woodhead et al 2016.

Grey Literature reports: Bachmann 2018 (Stonewall LGBT in Britain), Balding 2014, Balding 2018, Buffin 2012 (Part of the Picture), Cleaver 2010 (Changing Times), Guasp 2011 (Stonewall LGB People in Later Life), Guasp 2013 (Stonewall GB Men's Health Survey), ONS Health Survey for England 2021, Macredie 2010 (Challenge for Change), McDermott 2014 (Still out there), McNeil 2012 (Trans mental health study), Nodin et al 2015 (RaRe Report), Whybrow et al 2012 (Scottish Health Survey), Valentine 2017 (SHAAP report), Wood 2011 (Mapping LGBT lives in Birmingham), Youth Chances 2014.

Please note that the What About Youth? (PHE 2014) results are in the population survey table here for completeness but the results are discussed in Section 4.

Full results for sexual orientation and mixed sexual orientation and gender identity are given in the following tables:

Table 1 has the population surveys by sexual orientation,
Table 2 has the publications containing prevalence data by sexual orientation,
Table 3 has the non-population surveys with comparative results by sexual orientation,
Table 4 has the non-population surveys with non-comparative results by mixed sexual orientation and gender identity

There is a separate section on prevalence estimates in gender minority populations which has the results table for gender identity.

Table 1. Population surveys. Sexual orientation

Report	Outcome	Total N	LGB	Lesbian/ gay	Bisexual	Asexual	Grey Asexual	Straight	Allo-sexual
Bauer et al 2020	OR of being a non-drinker of alcohol	N=14,826				0.13 (0.09–0.22)	0.41 (0.35–0.48)		1 (reference case)
Health Survey for England 2021	More than 14, up to 35/50 units per week (increased risk)	N= 56794	25% (n=1,132)	-	-	-		20% (n=55,662)	
	More than 35/50 units per week (higher risk)		7%	-	-	-		4%	
	Mean number of units		17.7	-	-	-		12.7	
Whybrow 2012 (Scottish Health Survey)	Drink at hazardous or harmful levels	Age stand-ardised	-	34%	29%	-		23%	
	Exceed daily limits		-	50% (n=195)	49% (n=227)	-		39% (n=23811)	
What About Youth (via PHE Fingertips) 2014*	Drunk in the last 4 weeks	N = 120,115	-	24.6%	26.5%	-		14.3%	
	Regular drinker (in young people only)		-	10.7%	12.4%	-		6.0%	
* these results summarized in section 4 as they are on young people only									

Note: no results for Lesbian/Bi women and Gay/Bi men

Table 2. Publications containing prevalence data – sexual orientation and mixed sexual orientation and gender identity

Publication	Outcome	LGBT	LGB	Lesbian/gay	Bisexual	Lesbian/bi women	Gay/bi men	Straight	Additional information
Amos 2020	Ever drank alcohol		67.45% (62.52–72.02) n=628					51.51% (50.17–52.84) n=9227	OR=1·85 (1·47 to 2·33) ·p· <0·0001 Adolescents aged 14 years old
	Regular drinking (of those saying yes to drinking alcohol)		1.07% (0.36–3.11) n=385,					1.27% (0.94–1.72) n= 4048	OR 0·50 (95%CI 0·14 to 1·81) p=0·288
Becares 2021	Harmful alcohol use (AUDIT-C)					71.6% (SE=4.8)		59.0% (SE=0.7)	Odds ratio = 1.74 (95%CI =1.09, 2.79, p<0.05)
Bloomfield 2011	High volume drinking			Men 36% (n=14) Women 11% (n=18)				Men 17% (n=210) Women 11% (n=270)	Partnered or recently partnered. Men OR 3.32 (SE 2.07, p=0.055) Women OR 1.04 (SE 0.81, p=0.960)
Booker 2017	Alcohol consumption once per week or more			57% (n=482)	54% (n=407)			57% (n=38,073)	UKHLS total sample
	Alcohol consumption once per week or more			45%	43%			43%	16-21 yr olds in sample (numbers not given)
	Binge drinking in last 4 weeks, 4+ times			15%	14%			11%	16-21 yr olds in sample
Chakraborty 2011	Alcohol dependence in past 6 months	10.4%* (n=650) 7.3% ** (n=667)						5.4%* (n=6811) 5.7%** (n=6794)	*Heterosexual v non-heterosexual identity, **same sex partner v opposite sex partner
Haggar-Johnson 2013	Alcohol drinking >2 days/week (age 18/19)			37.5% (n=33)	26.0% (n=38)			19.7% (n=1467)	
	Risky single occasion drinking (age 18/19)			45.5% (n=40)	32.9% (n=48)			26.6% (n=1985)	

Publication	Outcome	LGBT	LGB	Lesbian/gay	Bisexual	Lesbian/bi women	Gay/bi men	Straight	Additional information
Pesola 2014	Alcohol use in sexual minority compared to heterosexual young people age 18								Total N=3710 Percentages not given (Btotal 0.12 (95%CI 0.04-0.20, p=0.003))
	Alcohol problem use at age 16 (mean, SD)		7.9 (5.5) (n=237)					6.6 (4.8) (n=1628)	
	Alcohol problem use at age 16 (mean, SD)		8.8 (5.9)					8.2 (5.2)	
Pitman 2021	AUDIT score 8 or above			37.4%	31.0%			23.8%	
Shahab 2017	Mean (SD) urge to drink				1.6 (1.2) (n=60)	1.8 (1.2) (n=50)		1.5 (0.9) (n= 3952)	Women
	Mean (SD) Motivation to cut down drinking				1.9 (1.4)	2.1 (1.9)		1.8 (1.6)	
	Mean (SD) spent per week (£)				16.5 (16.6)	19.0 (16.5)		14.6 (14.0)	
	Mean (SD) urge to drink				2.0 (1.3) (n=51)		1.7 (1.2 (n=87)	1.7 (1.0) (n= 4426)	Men
	Mean (SD) Motivation to cut down drinking				1.9 (1.7)		2.1 (1.7)	1.7 (1.4)	
	Mean (SD) spent per week (£)				21.3 (21.5)		25.4 (23.0)	21.6 (20.2)	
Woodhead 2016	Harmful alcohol use	18.8% (n=12)						3.9% (n=41)	

Table 3. Non-population surveys with comparative results. Sexual orientation and mixed sexual orientation and gender identity.

Report	Outcome	LGBT	LGB	Lesbian/ gay	Bisexual	Lesbian/ bi women	Gay/ bi men	Straight	Notes
Balding 2014	Alcoholic drink in the last 7 days		Boys 30% (n=60) Girls 51% (n=92)					Boys 37% (n=2002) Girls 35% (n=1916)	School Yr 10s in Cambridgeshire,
	Drank over 14 units in the last 7 days		Boys 7% Girls 1%					3% 2%	
Balding 2018	Alcoholic drink in the last 7 days	Boys 34% (n=74) Girls 38% (n=139)						Boys 34% (n=1467) Girls 36% (n=1538)	School Yr 10s in Cambridgeshire
	Drank over 14 units in the last 7 days	Boys 8% Girls 6%						Boys 3% Girls 2%	
Nodin 2015 (RaRe Report)	Hazardous alcohol use (AUDIT)					37.1% (n=534)		31.9% (n=470)	
	Hazardous alcohol use					35.8% (n=324) lesbian 40.0% (n=170) (bi women)		31.9% (n=470)	
	Dependent alcohol use					4.5% (n=534)		4.0% (n=470)	
	Dependent alcohol use					4.3% (n=324) lesbian 4.7% (n=170) (bi women)		4.0% (n=470)	
	Drink alcohol to intoxication once per week or more					14.6% (n=587)		13.1% (n=533)	
	Drink alcohol to intoxication once per week or more					15.1% (n=357) lesbian 12.6% (n=189) (bi women)		13.1% (n=533)	

Guasp 2013 (Stonewall GB men's health survey (also Bourne 2016))	Had a drink in the last week						78% (n=6861)	68% (n=???)	
	Drank alcohol on 3 or more days in the last week						42%	35%	
	Drunk or hung over while working/school or other responsibilities in past 6 months						19%		
	Missed or late for work/school or other activities because of the above						13%		
	Drunk alcohol even though doctor suggested they stop drinking						4%		
Guasp 2011 (Stonewall LGB people in later life)	Drink alcohol every day or 5-6 days per wk		Men 35% Women 19%					25% 15%	
Youth Chances 2014	Alcoholic drink 4 or more times per week		8% (n=4332)					6% (n=341)	16-25 year olds only
	Drinking more than 4 units in a typical day		57% (n=3933)					57% (n=300)	Of those that drink
	Drink twice the recommended limit in the last year, monthly or more		51% (n=3930)					45% (n=300)	Of those that drink

Table 4. Non-population surveys with non-comparative results. Sexual orientation and mixed sexual orientation and gender identity.

Report	Outcome	Total N	LGBT	LGB	Lesbian/ gay	Bisexual	Lesbian/ bi women	Gay/ bi men	Straight	Notes
Buffin 2012 (Part of the Picture)	Drunk any alcohol	Total N=2058		83% (n=1678 of 2018)						
	Binge drinking at least once or twice a week			30.5% (n=509 of 1672)						
	Dependent on alcohol			13.9% (n=234 of 1678)						
Macredie 2010 (Challenge for Change)	Regularly exceed recommended levels	Total N=212	-	30% (n=63)	-	-	-	-	-	Bradford district
	Occasionally exceed recommended levels		-	30% (n=63)	-	-	-	-	-	
	Regularly binge drink		-	18% (n=39)	-	-	-	-	-	
	Occasionally binge drink		-	24% (n=51)	-	-	-	-	-	
	Concerned about their drinking		-	33% (n=57)	-	-	-	-	-	
Cleaver 2010 (Metro Changing Times 2010/11)	Drank more than 25 units per week	Total N=419	25%	-	-	-	-	-	-	Has intersex in sample but not separate results
Woods 2011 (Mapping LGBT lives in Birmingham)	Drank above recommended weekly units	Total N=597	9.25%	-	-	-	-	-	-	
	Drank 42 units or more per week		2.3%	-	-	-	-	-	-	
McDermott 2014 (Still out there).	Concerned about their alcohol consumption	Total N=158	50%	-	-	-	-	-	-	London area only
Bachmann 2018 (Stonewall LGBT in Britain)	Drank alcohol almost every day	Total N =5375	16%	-	-	-	-	-	-	

3.2 UK Prevalence in sexual orientation, mixed sexual orientation and gender identity populations

Ideal prevalence evidence for harmful drinking in gender and sexual minority communities would be from an adult national sample selected randomly that measured sexual orientation and gender identity, and presented results for gay men, lesbians, bisexual men and women, and other minority sexual orientations as distinct groups compared to the heterosexual majority, and also presented results for trans men, trans women, non-binary people and other gender identities compared to the cisgender majority. There would be also some calculations presented as to whether any difference in prevalence is statistically significantly different between the different groups. This evidence does not yet exist.

What the systematic scoping review found is some comparative evidence from population surveys by sexual orientation – the NATSAL surveys I, II and III and the Towards Better Sexual Health: A Study of Sexual Attitudes and Lifestyles of Young People in Northern Ireland (Bauer et al 2020), the Health Survey for England, the Scottish Health Survey (Whybrow et al 2012) and the Public Health England Fingertips survey in young people (PHE 2014).

The Health Survey for England results from 2021 showed that there are higher rates of alcohol misuse in LGB (not split by gender or sexuality) compared to heterosexual people. So it cannot be determined whether these rates are statistically significantly worse in men compared to women, or in lesbian/gay compared to bisexual people. The Scottish Health Survey from 2012 (Whybrow et al 2012) does split results by lesbian/gay and bisexual, but not by gender. Again, it shows higher rates in LGB people than heterosexual people. Unlike the Health Survey for England, it gives 95% confidence intervals around the prevalence estimates. These are reproduced in Table 5 below. It can be seen that the 95% confidence intervals do not intersect for the gay and lesbian group compared to the heterosexual group, suggesting that their hazardous or harmful drinking rates are higher than those for the heterosexual group. The 95% confidence intervals for the bisexual group do intersect those for the heterosexual group suggesting no significant differences, but the sample size is relatively small (but larger than the gay/lesbian group) so a larger sample may have shown a significant difference.

Table 5. Scottish Health Survey prevalence results (2012)

Sexual orientation	Hazardous/harmful drinker prevalence (%)	Lower confidence limit (%)	Upper confidence limit (%)
Bisexual (n=229)	29	21	37
Gay or lesbian (n=194)	34	25	43
Heterosexual (n=23851)	23	23	24

Bauer et al, 2020 published results of alcohol consumption (On average, how often do you drink alcohol? and About how many drinks do you have when you have any?) in asexual and grey-asexual people compared to allosexual people in four UK surveys - 1990 (NATSAL I), 2000 (NATSAL II), 2010 (NATSAL III), and a follow-up survey based on these censuses, and the Towards Better Sexual Health: A Study of Sexual Attitudes and Lifestyles of Young People in Northern Ireland (TBSH) survey in 2000. Results for 2010 only are reproduced in Table 2. They also reported odds ratios of drinking by sexual attraction from NATSAL III, adjusted for age, sex, health, and importance of religion only, with opposite sex attraction being the reference case. Results were Mostly opposite-sex attraction OR=1.60, About equal attraction OR=0.87, Mostly same-sex attraction OR=1.69, Only same sex attraction OR=1.55, Grey-asexual OR=0.42 and Asexual OR=0.14.

The publications with comparative samples include Amos 2020, Becares 2021, Bloomfield 2011, Booker 2017, Chakraborty 2011, Haggar-Johnson 2013, Pesola 2014, Pitman 2021, Shahab 2017 and Woodhead 2016, and all show worse alcohol misuse for the LGB groups compared to the heterosexual groups. Amos 2020 investigated adolescents aged 14 in the Millennium Cohort study and statistically significantly more in the sexual minority group had ever tried alcohol compared to the heterosexual group. Becares (2021) looked at lesbians and bisexual women in the UK Household Longitudinal Study and found a statistically significantly higher rate of harmful drinking compared to heterosexual women, as measured by the AUDIT-C questionnaire. Bloomfield 2011 found that in their samples of men (n=14 compared to n=210) and of women (n=18 compared to n=270), there were no significant differences in being high volume drinkers by sexual orientation, but this may be because of small sample sizes. Booker (2017) reported two measures of alcohol use in 16-21 year olds from Understanding Society, The UK Household Longitudinal Study. There was no significant differences in past month alcohol consumption by sexual orientation, but gay/lesbian and bisexual respondents reported significantly more binge drinking 4 or more times in the past month compared to the heterosexual respondents. Chakraborty (2011) analysed results from the Adult Psychiatric Morbidity Survey by sexual orientation and partnership preference. She found that significantly more in the non-heterosexual group (n=650) had alcohol dependence in the past six months than in the heterosexual group (n=6811), but no significant difference between the 'only opposite gender' (n=6794) compared to 'any same gender' (n=667) partnered groups. The unadjusted odds ratio for alcohol dependence was 2.04 (95% CI 1.46-2.86) and adjusted odds ratio was 2.05 (95%CI 1.45-2.80) for non-heterosexual orientation and unadjusted OR for non-heterosexual partnered was 1.31 (95%CI 0.91-1.90).

Haggar-Johnson 2013 analysed results from the Longitudinal Study of Young People in England (aged 18/19) and found significantly higher rates of alcohol drinking more than two days per week and risky single occasion drinking in lesbian or gay group (n=88) compared to the heterosexual group (n=7464) ($p<0.001$ for both outcomes) but not for the bisexual (n=146) compared to the heterosexual group ($p=0.057$ and $p=0.09$ respectively). Pesola (2014) gave means and standard deviations for alcohol problems at age 16 and 18 but no statistical comparisons between sexual minority and heterosexual groups. Pitman 2021 analysed results from two waves of the Adult Psychiatric Morbidity Survey and found that there were significantly higher proportions of alcohol misuse, as measured by having an AUDIT score of 8 and above, in the lesbian/gay (n=163) and bisexual (n=116) groups compared to the heterosexual group (n=10016) ($p=0.006$). Shahab 2017 reported three alcohol-related outcomes – mean urge to drink, mean motivation to cut down drinking, and mean spent per week on alcohol. For both women and men, all outcomes were significantly worse in the lesbian/gay and bisexual groups than the heterosexual groups except no difference in the motivation to cut down in women. Woodhead 2016 reported results from a South East London Community Health Survey and the Adult Psychiatric Morbidity Survey and reported that a significantly higher proportion of the non-heterosexual group (n=63) drank alcohol to cope with unfair treatment than the heterosexual group (n=978) ($p=0.027$).

Regarding grey literature with comparative results – the studies included were Balding 2014 and 18 (schoolchildren in Year 10 only), the Stonewall Gay Men's Health Survey (men only), LGB people in later life (older people aged over 55), and Youth Chances (young people aged 16-25). No matter which metric is used, all of these prevalence estimates show worse alcohol misuse in the lesbian, gay male and bisexual female and male communities. Only the RaRe report (Nodin et al 2015) conducted significance tests and found no significant difference in hazardous drinking as measured by the AUDIT questionnaire between LGB (n=534) and

heterosexual women (n=470) and between lesbians (n=324), bisexual women (n=170) and heterosexual women. There were however, significantly more LGB women who were alcohol dependent and significantly worse patterns for the LGB group in drinking to intoxication.

The remaining sexual orientation and LGBT+ prevalence estimates from grey literature have no heterosexual comparator groups and their prevalence estimates vary considerably by the question asked and the sample in the survey. Because of the lack of comparator it is not possible from these surveys to know whether the pattern of drinking is worse for the LGB or LGBT+ groups or not.

3.3 Prevalence estimates in gender identity and intersex populations

There is far less information around prevalence in the trans and non-binary communities (Table 6, next page). We found no population surveys measuring gender identity, and no comparative data (i.e. compared to the cisgender population) from other reports or publications. The only evidence is from grey literature reports from the Trans and Non-Binary (TNB) community and one publication by Rimes (2019) based on the Youth Chances survey (2014). Assuming that the small heterosexual comparator group was also cisgender, the relative proportions of having an alcoholic drink 4 or more times per week were higher in the trans sample than the heterosexual group. However, the percentages having a higher number of units on a typical day and the frequency of having 6 or more units (if female) and 8 or more units (if male) were lower in the trans sample. Some of the non-comparative surveys show alarmingly high rates of alcohol misuse, but without population samples and comparative data it is very unclear as to the true prevalence of alcohol misuse in the TNB population and whether it is higher than the cisgender population.

No data on alcohol use in people with intersex variance was found. Although intersex people were in some of the samples, their results were not presented separately.

Table 6. Non-population surveys, published and grey literature for gender identity

Report	Outcome	Trans	Non-binary	Cisgender/ comparator	Intersectionality
McNeil 2012 (Trans mental health study)	AUDIT-C cut off scores	62% scored above 3 (62% of n=576), 47% scored between 4 and 12.			(23% non-binary but results not given separately)
Bachmann 2018 (Stonewall LGBT in Britain)	Drank alcohol almost every day		11%		
Youth Chances 2014	Alcoholic drink 4 or more times per week	8% (n=665)			16-25 year olds only
	Drinking more than 4 units in a typical day	44% (n=551)			Of those that drink
	Drink twice the recommended limit in the last year, monthly or more	38% (n=549)			Of those that drink
Rimes 2019 (Youth Chances)	Mean AUDIT score (SD)	Trans female 5.1 (2.6) Trans male 4.3 (2.4)	MAAB 5.2 (2.8) FAAB 4.9 (2.5)		
Valentine 2017 (SHAAP report)	6 or more drinks daily or almost daily	3.5%			Has 14% intersex in the sample but results not split.
	Relative, friend, Doctor or other health care worker expressed concern about your alcohol or other drug use or suggested you should cut down in the last year	15%			

3.4 Summary of prevalence data

In summary – there is a higher rate (in general) of harmful alcohol use in the LGBT+ community, but overall prevalence of harmful drinking through meta-analysis cannot be derived from this data because of the multiple ways that harmful drinking has been measured, the different types of samples, the different ways sexual orientation and gender identity have been reported and the lack of comparator groups. Most meaningful are the percentages and other statistics reported in each of the included studies reproduced in the tables above.

3.5 Prevalence over time

As there is so little good quality information on alcohol misuse prevalence in LGBT+ populations currently, it is very difficult to determine whether these prevalences may have changed over the last 20-30 years. For example, an early Master's degree thesis from 1995 found that 12% of 100 lesbians in the Birmingham area were drinking 35 or more units per week, 18% were drinking 22-34 units and 19% drinking 14-21 units per week. It is unclear whether lesbians with a similar demographic to that sample will be drinking similar amounts in 2021 or not. An early systematic review of LGBT Health in the West Midlands (Meads et al 2009) reviewed alcohol use data from six surveys conducted by the LGBT+ community between 2000 and 2008 (with no heterosexual comparator groups being available) and the results are reproduced in Table 7 below. The results suggest that high rates of alcohol misuse

have been prevalent in the LGB communities for many years. In that report there was no information found on alcohol misuse in trans people.

Table 7. Early alcohol prevalence studies from LGB people in the West Midlands

Study	Question	All	Men	Women
Measure for Measure (2002)	Do you drink?	89.5%	89.0%	90.7%
	Drinking a problem?	Yes – 7.0% Sometimes – 11.2%	Yes – 6.9% Sometimes – 9.3%	Yes – 7.1% Sometimes – 15.6%
A Matter of Trust (2002)	Drink alcohol once a week or more?	76%		81%
	Drink every day?	15%		
	Drunk more than recommended weekly limit?		28%	27%
	Excessive drinking?		13%	14%
	Concerned about it?	30%		
	Sought help about alcohol?	6%		
	Reason for drinking?	Scene focused on pubs and clubs = 24% Friends or partner does = 24%		Scene focused on pubs and clubs = 17% Friends or partner does = 20%
Vital Statistics (2004) West Midlands subset	I sometimes worry about how much I drink?		Agree = 30.9% Unsure = 6.5%	
LGBT Census Wolverhampton (2005)	Excessive drinking?	15%	15%	14%
	Drinking more than recommended limit?		29%	26%
LGBT Census Wolverhampton (2005) (in depth subset)	Concerns about how much they drink?	43%		
Measure for Measure II (2005)	Alcohol in past month		87%	87%
	Binge drink weekly?		40%	37%
	Think you should cut down?	36%		
	Annoyed by others' comments about your drinking?	19%		
	Feel guilty about how much you drink?	18%		
	Drink in morning to relieve hangover?	13%		

Looking at the subgroup analyses in some of these reports, results suggested that the worst drinking was in women and in the younger age groups, for example in the A Matter of Trust report (Limbrick 2002), 55% of women and 40% of men aged 16-24 were drinking more than the recommended 14 and 21 units of alcohol per week respectively. In the LGBT Census Wolverhampton (Limbrick 2005) the equivalent proportions were 39% and 36%.

3.6. Prevalence during COVID-19

During the COVID-19 pandemic several of the UK LGBT+ charities enquired about alcohol use (McGowan et al 2021) and this is summarised below. There were no published studies on alcohol use in LGBT+ communities during this time. The Outlife survey (Outlife 2020) was the

only cross-sectional survey to have any comparative results (see Table 8). In summary they found that 25% of LGBTQ+ people said they were drinking a few times a week during lockdown and 9% of LGBTQ+ people said they were drinking every day. Also 44% of LGBTQ+ people said they drank the same amount as usual during lockdown, 33% of LGBTQ+ people said they were drinking more and 23% of LGBTQ+ people said they were drinking less. Also LGBTQ+ people aged 45-54 reported the highest amount of 'a few times a week' or 'every day' drinking (54%), and White LGBTQ+ people reported drinking more than Black or South Asian LGBTQ+ people (white 33%, South Asian 18%, Black 23%). Less than 1% of LGBTQ+ people said they had accessed drug or alcohol services since lockdown began. The comparative results by sexual orientation and gender identity are reproduced in Table 8 below. Please note that the heterosexual sample was relatively small, and probably had a high proportion of trans people in, so may not be representative of the UK heterosexual cisgender population.

Table 8. Outlife COVID-19 survey comparative results

Group	Every day (%)	Drinking a few times per week (%)	Never drink alcohol (%)
Asexual (n=90)	0	12.2	51.4
Bisexual (n=630)	3.7	16.8	28.1
Gay (n=531)	8.2	24.4	21.0
Lesbian (n=443)	6.1	16.7	30.1
Pansexual (n=315)	6.6	15.8	35.5
Questioning (n=98)	1.3	12.2	40.5
Heterosexual (n=33)	9.1	13.7	40.9
Trans and gender diverse (n=538)	5.0	15.3	36.5
Cis (n=1,781)	5.9	19.3	27.2

The other UK LGBT+ charities' results are:

The Live Through This (2020) report (in LGBT+ people affected by cancer) stated that 19% of respondents were drinking alcohol more often (than before the pandemic).

The Birmingham LGBT COVID-19 report (Viney 2020) stated that:

> "*When asked about alcohol consumption during the lockdown, the majority of respondents who drank reported 'no change'. However, nearly 40% of those who drank reported increased alcohol consumption (n=112)*."

In the report by Barnado's London (2020), drug and alcohol support was combined. Amongst trans young people, alcohol/drug support emerged as a significant response to the question – "what support do you need to improve your mental health?" where 21.9% of trans young people, 3.6% of girls and 8.1% of boys stated that this was an issue for them.

The LGBT Southwest Voices report (2020) stated that 29% of people were concerned the [COVID-19] situation would lead to substance or alcohol misuse or trigger a relapse. Quotes from survey respondents include:

> "*Both parents already drink a lot of alcohol and I find myself leaning more and more towards that and anything else I can get my hands on in order to go numb to everything for a bit*." and "*I am drinking more alcohol and spending more money on drink though less on other things*" and "*I am a recovering alcoholic and I have been*

craving more than usual" and "*I haven't abused substances or alcohol in the past but the lockdown is making me want to*" and "*Initially I was concerned so I limited myself access to alcohol. But have come to realise that it is much less of a temptation than I anticipated.*".

The Lancashire LGBT Report (2020) stated that 21% were concerned about their alcohol or other substance consumption.

The LGBT Foundation report (2020) stated that 18% were concerned that this situation was going to lead to substance or alcohol misuse or trigger a relapse. This rose to 20% of BAME LGBT+ people, 23% of disabled people, 22% of trans people and 24% of non-binary people. Quotes from survey respondents include:

> "*I worry about this affecting my mental health. I was diagnosed with depression before and a symptom of this was not leaving my house for days at a time. I worry that not being able to go out will send me back to unhealthy sleeping habits and am worried about self-medicating with alcohol.*"

And

> "*I am drinking regularly in the evening, by myself. This is not something I have done in the past, and I shouldn't do it as alcohol and one of my medications does not mix well with alcohol. I am using alcohol to deal with the isolation and the stress of having my children all day with no options to do our usual activities*"

And

> "*Sheer boredom will make me slip back into alcohol abuse.*"

From: Pawlowska 2021 (Brighton Switchboard):

> *"40% of LGBTQ people (n=595) used drugs or alcohol to manage their mental health during the pandemic."*

3.7 Causes and associated problems

There are a number of known risk factors or antecedents of alcohol misuse and dependence including binge drinking, having at least one parent with alcoholism, having a mental health problem including anxiety, depression and bipolar disorder, low self-esteem, stress; coming from a culture where alcohol abuse is comparatively common, and lack of family support.
In the LGBT+ community, there are higher rates of many of these factors compared to in the heterosexual/cisgender majority. Examples of research showing these in the UK LGBT+ populations are listed below (where available).

Binge drinking and higher levels of drinking alcohol: This can be seen in the prevalence section above.

Having at least one parent with alcoholism: The research by Pesola et al (2014) reported that 12.8% of the sexual minority sample's parents drank 3 or more glasses every day, compared to 8.9% of the heterosexual sample's parents, when the sample were aged 12. Evidence in the parents of TNB people was not found.

Having a mental health problem including anxiety, depression and bipolar disorder: There are higher rates of mental health problems in the LGBT+ community. For sexual orientation the best evidence on this in the UK comes from Semlyen et al (2016) which showed that rates of common mental disorder and poor wellbeing were approximately twice as high for LGB groups compared to heterosexuals, particularly for young people aged under 35 and for people aged 55+, and for bisexual people (Semlyen et al 2016). Chakraborty (2011) found that there were significantly higher rates of probable psychosis in the non-heterosexual compared to the heterosexual groups (1.4% vs 0.38%) and in the any same gendered partner group compared to the opposite gendered partner group (1.2% vs 0.39%). There is less information around mental health in trans compared to cisgender people in the UK. The Trans Mental health study (McNeil et al 2012) (n=899 total respondents) found that 55% had been diagnosed with depression and 38% with anxiety, and using the CES-D scale, 36% had major depression. In the absence of comparative data for cisgender people in this study, according to the MIND charity, 6% of the general population have generalised anxiety disorder and 8% have mixed anxiety and depression in England in any given week (Mind 2020), so these rates for trans people are much higher compared to the general population. The LGBT Survey (GEO 2018) found that 40.2% of trans men, 29.9% of trans women, 37% of non-binary people and 25.5% of intersex people had accessed mental health services in the 12 months preceding the survey, compared to 21.4% of the cisgender sample (who were lesbian, gay or bisexual).

Low self-esteem: LGBT+ people tend to have lower self-esteem than heterosexual/cisgender people, for example research by Taylor et al (2018) found lower self-esteem in a sample of UK LGB university students compared to heterosexual students. The Balding surveys (Balding 2014, Balding 2018) of Cambridgeshire schoolchildren found that, in 2014 and in 2018, rates of low self-esteem were much higher in LGBT boys and girls compared to Cambridgeshire boys and girls (2014 – LGBT boys 61%, girls 69% vs Cambridgeshire boys 17%, girls 37%, 2018 - LGBT boys 38%, girls 47% vs Cambridgeshire boys 18%, girls 38%).

Stress: Good UK-based evidence on stress rates by sexual orientation was not found, but the impact of heteronormativity and homophobia is well known in the LGB community. The Trans Mental Health Study (McNeil et al 2012) (n=899) found that 27% of respondents had been diagnosed with stress and 53% believed they had it but had not been formally diagnosed.

Lack of family support: One example of lack of family support for LGBT+ people is the high rate of homelessness in LGBT+ people. A survey of trans people (n=542) found that 19% reported having been homeless at some stage and 11% had been homeless more than once. AKT (formerly the Albert Kennedy Trust) supports homeless young LGBT+ people and their recent report details how much rejection from family members occurs because of minority sexual orientation and gender identity (Bhandal and Horwood 2021). A Stonewall survey in people aged over 55 (Guasp 2011) found that LGB people are less likely to see their biological family regularly than heterosexual people, and 13% (compared to 4%) saw them less than once a year.

Homelessness: More than one quarter (29%) of LGBTQ+ young people (n=161) said they started drinking as a way to cope with being homeless (Bhandal and Horwood 2021).

Coming from a culture where alcohol abuse is comparatively common: Because of Section 28 of the Local Government Act (1988) local authorities for many years did not

support the LGBT+ community, so numerous events could not be held in local authority premises (such as dance groups, book clubs, film clubs, bridge groups etc). As a result, many LGBT+ support groups and interest groups were held in pubs and clubs where alcohol was served, which has promoted a general culture of excessive drinking being common for years as seen during celebrations such as Pride events (Spivey et al 2018).

SECTION FOUR: Change in alcohol use amongst gender and sexual minorities throughout the life course

4.1 Introduction

This section reviews how alcohol use varies over the life course and by ethnicity and other protected characteristics listed in the Equality Act (2010) where information is available. It also looks at any information available about why UK LGBT+ people drink alcohol (causes) and the effects of drinking alcohol. This is the second part of **Review Part One.**

4.2 Changes over the life course

In order to determine how alcohol use in a person varies over the course of their lifetime, one would need a cohort study where a random sample of people were recruited and followed up multiple times to determine alcohol consumption specific to sexual orientation and gender identity. Although there are cohort studies of alcohol use over time, none in the UK have measured sexual orientation and/or gender identity. Therefore the only information currently available is how prevalence varies in different age groups.

4.2.1. Children and young people

Research in people over the age of 16 have been included in the general prevalence estimates above. This section only presents results for children and young people aged under 16. For example, the RaRe Report (Nodin et al 2015) described previously looked at hazardous alcohol use (using the AUDIT questionnaire) in lesbians and bisexual women and conducted a logistic regression model to look for predictors. They found that being of a younger age was associated with an increased likelihood of hazardous drinking.

Research with LGBT+ young people suggests that there are substantial health inequalities related to substance misuse, smoking and mental health problems, with a growing awareness of the impact of these factors on educational attainment (Blosnich *et al.,* 2013).

What About Youth? (PHE 2014) was a survey contracted by the Health and Social Care Information Centre on behalf of the Department of Health, and conducted by Ipsos Mori. Participants were 15 years old and were sampled from the Department for Education's National Pupil Database, of which 120,115 responded with usable data, giving an unadjusted response rate of 40 per cent. Sexual orientation was asked in the questionnaire, using the ONS validated questions. The results by sexual orientation have been hosted on the Public Health England Fingertips site since 2015 (currently on the Child and Maternal Health part), but are not in the What About Youth main report (Niblett 2015) or spreadsheets hosted by NHS Digital (NHS Digital 2015). The results for alcohol show that the percentage of regular drinkers and the percentage who have been drunk in the last four weeks was worse in gay/lesbian (24.6%) and in bisexual groups (26.5%) compared to the heterosexual group (14.3%).

The Schools Health Education Unit conducts regular surveys in Cambridgeshire schoolchildren (year 8 and year 10), giving results for 2014 and 2018 for the LGBT pupils compared to the majority population (Balding 2014, Balding 2018), some of which are reproduced in Table 9. These reports also have more detailed information about number of drinks pupils had, which days of the week they drank alcohol, total units drunk, types of alcoholic drink preferred and how the alcoholic drink was obtained. In total 25% of LGBT compared to 13% of the majority population responded in 2014 that they drank alcohol on more than one day in the last seven

days, and 10% compared to 5% said they drank on at least three days. The equivalent rates in 2018 were 18% compared to 14% of pupils responded that they drank alcohol on more than one day in the 7 days before the survey and 7% compared to 5% said they drank on at least three days. In 2014 the most popular drinks were spirits for LGBT boys and alcopops and spirits for LGBT girls. In 2018 spirits were the most popular for both LGBT boys and girls. In 2014, 31% of the LGBT girls said that someone gave them the alcohol and in 2018 this was 25%.

Table 9. Results from the Balding 2014 and Balding 2018 surveys

Report	Outcome	LGBT	Majority
Balding 2014	Alcoholic drink in the last 7 days	Boys 30% (n=60) Girls 51% (n=92)	Boys 37% (n=2002) Girls 35% (n=1916)
	Drank over 14 units in the last 7 days	Boys 7% Girls 1%	3% 2%
Balding 2018	Alcoholic drink in the last 7 days	Boys 34% (n=74) Girls 38% (n=139)	Boys 34% (n=1467) Girls 36% (n=1538)
	Drank over 14 units in the last 7 days	Boys 8% Girls 6%	Boys 3% Girls 2%

4.2.2. Across age groups

The Valentine 2017 (SHAAP report) gives proportions of trans people who had 6 or more drinks on one occasion. Although the sample size is relatively small (total number for this question = 199), the results suggest that high proportions drink heavily across all age groups.

Table 10. Results from Valentine 2017 (SHAAP report)

	16-25	26-35	36-45	46-55	56-65	65+	Total
Never	11.1%	32.3%	30.0%	32.0%	17.4%	63.6%	26.1%
Less than monthly	40.7%	29.0%	33.3%	34.0%	30.4%	9.1%	33.2%
Monthly	24.1%	19.4%	16.7%	20.0%	26.1%	9.1%	20.6%
Weekly	22.2%	19.4%	20.0%	6.0%	17.4%	18.2%	16.6%
Daily or almost daily	1.9%	0.0%	0.0%	8.0%	8.7%	0.0%	3.5%

4.2.3. Older people

The Stonewall survey LGB people in later life (Guasp 2011) surveyed (via YouGov) 2,086 people aged over 55 across England, Scotland and Wales in October 2010, of which there were 1050 heterosexual and 1036 LGB participants. They found that overall 35% of gay men and 19% of lesbian and bisexual women drank alcohol every day or at least 5-6 days per week, compared to 25% of heterosexual men and 15% of heterosexual women.

4.3 Effects of high alcohol intake in the LGB&TNB communities

Evidence for the effects of high alcohol intake specific to UK-based LGBT+ communities (compared to the general population) is sparse. More broadly for general populations, according to the US Centre for Disease Control high alcohol intake can result in a number of physical and mental short- and longer-term problems. Some of these are listed below (CDC 2021).

1. Injuries, including motor vehicle crashes, falls, drowning and burns
2. Violence, including homicide, suicide, sexual assault and intimate partner violence
3. Acute alcohol poisoning treated in hospital
4. Risky sexual behaviours, including unprotected sex or sex with multiple partners, resulting in unintended pregnancy or sexually transmitted infections including HIV

5. Miscarriage, stillbirth and foetal alcohol spectrum disorders among pregnant women
6. High blood pressure, heart disease, stroke, liver disease and digestive problems
7. Cancer of the breast, mouth, throat, oesophagus, larynx, liver, colon and rectum
8. Weakening of the immune system, increasing the chances of getting sick
9. Learning and memory problems, including poor school performance and dementia
10. Mental health problems, including depression and anxiety
11. Social problems, including family problems, job-related problems and unemployment

Even though the evidence for whether there are higher rates of any of these issues in the LGB&TNB communities compared to the heterosexual community are sketchy, there is even less high quality evidence on causality to determine whether these problems are being caused by or are the result of alcohol intake. The review suggests the following:

1. There is no evidence about the incidence of these in the LGBT+ communities in the UK, as Hospital Episode Statistics do not record sexual orientation or gender identity.
2. There are higher rates of suicide attempts by sexual orientation. For example, Beach (2019) combined 24 UK datasets and found that non-heterosexual men aged 50+ were more likely to have attempted suicide in their lifetime.
3. As Hospital Episode Statistics do not record sexual orientation or gender identity, there is no information on acute alcohol poisoning by sexual orientation or gender identity.
4. There are higher rates of HIV amongst gay, bisexual, and other MSM (Martin et al 2021) and trans women (Stutterheim et al 2021). Pregnancy rates in lesbians and bisexual women in the UK are not available, but higher rates of LGBT children have taken risks with sex after drinking alcohol or drug use (in 2014 - 50% LGBT vs 25% Cambridgeshire boys, 27% LGBT girls vs 34% Cambridgeshire Girls (Balding 2014), in 2018 the corresponding percentages were 5% vs 4% in boys and 9% vs 5% in girls (Balding 2018).
5. The Health Survey for England released data on diabetes mellitus and hypertension rates by sexual orientation in 2021. Rates of hypertension in the total sample are lower in LGB people compared to heterosexuals (15% vs 28%) but these rates are not controlled for age, and 34.2% of the heterosexual sample were aged 60+ but only 10.3% of the LGB sample. So in conditions which are much more prevalent in older age groups, the rates need to be controlled for age. In people aged 60+, 61% of LGB compared to 58% of heterosexuals had hypertension, and 16% LGB vs 13% heterosexuals had diabetes mellitus. Hypertension rates seem to be lower in LGB women and diabetes mellitus rates higher in LGB women than LGB men in older age groups. No nationally comparative information on heart disease, stroke, liver disease and digestive problems was found, and no information by gender identity.
6. Regional Cancer Intelligence Units and their umbrella body – the National Disease Registration Service (NDRS), was run by Public Health England and now by NHS Digital. A sexual orientation question set was validated by the Office for National Statistics (ONS) in 2008-9, and sexual orientation was added to the NDRS core data set in 2018 and became mandatory in 2020, but reporting has been delayed by Covid-19 issues (personal communication, Andrew Murphy, Head of Cancer Datasets, NDRS, PHE, July 2020). Cancer registries have yet to report on results by sexual orientation. To our knowledge, there are no plans to incorporate gender identity into the NDRS dataset at the moment. Saunders (2017) combined data from the English GP Patient Database and the Cancer Patient Experience Survey found that there were higher rates of human papilloma virus (HPV)–based cancers in sexual minorities compared to heterosexual people.

7. Chronic illness rates are higher in sexual minority populations. The Health Survey for England data described above suggest that limiting longstanding illness rates are higher in LGB people, particularly young people aged 18-34 (24% vs 11%), but also in ages 35-59 (27% vs 21%) (ONS 2021). Note that the sample has a higher proportion of young LGB than heterosexual people (48.6% vs 23.0%) but not aged 35-59 (41.0 vs 42.7%). The rates are lower in LGB people aged 60+ (31% vs 37%). There were few differences in women compared to men in the different age groups. These rates do not differentiate between physical and mental health limiting long term illnesses. Elliott (2015) analysed the GP Practice database (age-adjusted) and found that LGB people were 2-3 times more likely to report having had a longstanding psychological or emotional problem than heterosexual people (men - 10.9% gay, 15.0% bisexual 5.2% heterosexual; women - 12.3% lesbian, 18.8% bisexual, 6.0% heterosexual, $p < 0.001$ for each). Sexual minority groups were also more likely to report fair or poor health (men - 21.8% gay, 26.4% bisexual 19.6% heterosexual; women - 24.9% lesbian, 31.6% bisexual, 20.5% heterosexual; $p < 0.001$ for each).
8. Shahab (2017) reported that the lesbian/gay participants from the Smoking and Alcohol Toolkit Studies were more likely to have post-16 qualifications compared to heterosexual participants. There are higher rates of dementia in UK sexual minorities – Saunders (2021) analysed results from the GP Practice database and found that the odds ratio of having dementia in sexual minority women (controlled for deprivation, ethnic group, region and age) was 1.6 (95% CI = 1.3 to 1.9) and was also raised in sexual minority men compared to heterosexuals (OR not given).
9. Alcohol misuse can be both the cause of and the result of mental health problems. These for LGB and TNB people have been described in Section 3.2.3 above. The information is not sufficiently detailed to indicate whether these higher rates of common mental disorders are caused by or the result of alcohol misuse, or a mixture of the two.
10. Booker (2017) reports unemployment rates by sexual orientation from the UK Household Longitudinal Study. Proportions who were unemployed were 7% gay/lesbian, 11% bisexual and 5% heterosexual respondents. Far fewer lesbian/gay respondents were economically inactive (25% lesbian/gay, 38% bisexual, 38% heterosexual) and more lesbian/gay and fewer bisexual people were employed (68% lesbian/gay, 50% bisexual, 57% heterosexual).

4.4 Intersectionality

Intersectionality as a concept is the range of intersections of social and cultural differences that people have (Crenshaw 2019; Meads *et al.,* 2012; Zeeman *et al.,* 2019). People carry certain markers based on their felt and social identities and social postions regarding sexual orientation, gender identity, gender expression, sex, age, ethnicity, race, disability and social class (as examples), but each individual has several of these markers. Where markers of difference intersect, these intersections are associated with various health inequalities, for example trans people from a minority ethnic background may have high rates of depression due to (amongst other things) the intersections of their gender identity, sexual orientation, and ethnicity. Their response to these characteristics varies according to a range of legal, political and economic factors, such as legislation that either prohibits LGBTI people from participation in mainstream cultural and social life, or that fully includes LGBTI people (Meads *et al.,* 2012*)*.

Here we describe the evidence available around alcohol misuse and the intersections of sexual orientation and gender identity with the other protected characteristics in the Equality Act (2010) and other relevant factors where we have found evidence.

4.4.1 Disability

No results were found regarding alcohol use in disabled people by sexual orientation or gender identity.

4.4.2 Ethnicity/race

The Health Survey for England 2011-18 (ONS 2021) has results for estimated weekly alcohol consumption by ethnicity and sexual orientation for all aged 16 and over. These results are not controlled for age. They found that a far higher proportion of ethnic minority people are non-drinkers in the heterosexual and LGB groups compared to white people, but of those who do drink a higher proportion in the LGB group drink at increased or higher risk (more than 14 units per week) compared to the heterosexual group (16% vs 8%). The equivalent proportions in white respondents drinking 14+ units per week were 34% (LGB) and 27% (heterosexual).

4.4.3 Gender/sexual orientation

The Health Survey for England 2011-18 (ONS 2021) has results for estimated weekly alcohol consumption by gender and sexual orientation for all aged 16 and over. They found that rates of drinking alcohol at increased and higher risks (more than 14 units per week) were higher in LGB men (39%) vs heterosexual men (33%), and in LGB women (23%) vs heterosexual women (16%).

4.4.4 Marriage and civil partnership

Guasp (2011) investigated alcohol consumption by relationship status in people aged over 55, and found that 34% of LGB people in a relationship drank every day or 5-6 days per week, compared to 22% of heterosexual people in a relationship, and 25% of single LGB people drank every day or 5-6 days per week compared to 15% of single heterosexual people.

4.4.5 Pregnancy and maternity

No results were found regarding alcohol use in pregnancy or maternity by sexual orientation or gender identity.

4.4.6 Religion and belief

Pitman (2020) constructed a series of logistic regression models based on the outcome of current hazardous alcohol use (AUDIT). There was no evidence for an interaction of alcohol misuse with religious identification ($p = 0.731$).

The RaRe Report (Nodin *et al.,* 2015) described in the prevalence section above looked at hazardous alcohol use (using the AUDIT questionnaire) in lesbians and bisexual women and conducted a logistic regression model to look for predictors. They found that increased relevance of faith or belief currently was associated with an increased likelihood of hazardous drinking.

4.4.7 Other relevant factors

Pitman (2021) constructed a series of logistic regression models based on the outcome of current hazardous alcohol use (AUDIT). In the unadjusted model individuals who identified as lesbian or gay were more likely than heterosexuals to report current hazardous alcohol use.

When adjusting for bullying, the probability of alcohol misuse was greater both in the bisexual and the lesbian/ gay group. When adjusting for discrimination, probabilities were attenuated, remaining only for the bisexual group. There was no evidence for an interaction of alcohol misuse with childhood sexual abuse history (p = 0.285).

Woodhead (2016) constructed a series of logistic regression models based on the outcome of harmful alcohol use (AUDIT (Babor *et al.,* 2001) 'harmful alcohol use', corresponding to the scores of 16 or more). The models were Model A adjusted for age (continuous), gender, educational attainment, ethnicity, marital status. Model B as model A, additionally adjusted for major, everyday and anticipated discrimination and childhood and lifetime trauma overall. Model C as model A, additionally adjusted for being discouraged from education, people act as if they are afraid of me, not applying for work and not visiting certain areas for fear of being treated unfairly. Model D as model A, additionally adjusted for childhood sexual abuse and whether ever been a victim of a serious crime. The odds ratios were statistically significantly worse for the non-heterosexual compared to the heterosexual groups in all four models (ORs (95%CIs) = 3.30 (1.62–6.74), 4.14 (1.90–9.02), 3.18 (1.59–6.36) and 2.50 (1.13–5.52) respectively.

Guasp (2011) investigated alcohol consumption by socio-economic categories in people aged over 55, and found that 33% of ABC1 LGB people drank every day or 5-6 days per week, compared to 27% of heterosexual people and 22% of C2DE LGB people drank every day or 5-6 days per week, compared to 15% of heterosexual people.

The RaRe Report (Nodin et al 205) logistic regression model found that living in a small town or suburb as opposed to a city was associated a decrease in the likelihood of hazardous drinking in lesbians and bisexual women.

4.5 Useful quotes from included studies from the UK

Several of the UK grey literature reports included in the sections above have quotes from respondents relevant to alcohol and how they see its use for themselves or as part of the LGBT+ community. Examples are reproduced below:

From Guasp 2013:

> *"Gay men's culture seems to revolve around getting pissed as often as possible which often then seems to lead to increased drug and tobacco use as well as increased risk of sexually transmitted infections and violence."*

> *"I am a trainee doctor and would be considered successful, but I hide the fact that it's a daily struggle. I often deal with depression and alcohol dependence due to absence of self-esteem, both resulting from childhood bullying. I've little support and live a fairly lonely life. Many LGBT people have similar experiences. It's great that things are moving forward, but for many, significant damage of the past remains a factor in the present"*

From Nodin et al 2015 (RaRe Report):

> *"It's difficult to find other gay men unless you go clubbing or pubbing and so much of gay socialising involves alcohol and often drugs."*

"I think I just learned to use it as a crutch to support me when times got emotionally tough and yeah I just woke up to realise what I was doing wasn't healthy. It probably means I'll do it again at some point but I hope not, that is my hope. I do drink still but not to excess, not to oblivion."

"I felt at the time my parents, or my mother, was alive I'd broken her spirit and her hope for me as a young woman because there was a lot of peer pressure surrounding me getting married and having grandkids, so the white wedding and everything like that. So when I did come out there was the disappointment. I'd let my parents down and having to deal with their excuses of why I might be a lesbian. So again it's upsetting and guilt and I didn't live up to their expectations so drink again basically blanked all that out. So I can deal with it as long as I've got a drink. I think that's basically it."

From the Valentine 2017 (SHAAP report):

"Yes, I used alcohol to overcome social anxiety caused by being trans."

"I sought alcohol as a way of escaping the reality of my physical being."

"I feel that for long periods of time I was using alcohol to try and cope with feelings around body dysphoria and being trans. When I was struggling a lot with dysphoria, drinking made me feel sort of 'fuzzy', like the issues I was having with my body weren't so acute or that I cared about them less. When I didn't feel connected to my body because of dysphoria, using alcohol sort of increased that disconnection and made it seem less painful at the time."

SECTION FIVE: Interventions used to address alcohol-related needs of gender and sexual minority communities

5.1 Introduction

This is **Review Part Two** providing (answering research question 3) to provide an overview of the interventions or promising practices available internationally to support LGBT+ people who experience alcohol-related problems. This section presents the findings of primary published and grey literature research to give relevant quantitative and qualitative evidence.

This section is organised in the following way:

- Evaluations of mainstream alcohol interventions such various types of counselling and psychotherapy, the AA and the 12-step programme for their effectiveness or otherwise in LGBT+ populations. This section also includes studies measuring attendance rates for these services in LGBT+ people, and qualitative studies on LGBT+ people's experiences of attending AA and other mainstream services. (see Table 11 and Table 12)
- Interventions for general wellbeing that have been evaluated in LGBT+ people and have measured alcohol use. (see Table 11)
- Protective factors and promising practices that have been evaluated in LGBT+ people where alcohol use outcomes have been measured (see Table 13).

The following research was included:
Publications: Bobbe 2002, Egan 2021, Emslie 2017, Fals-Stewart et al 2009, Hatzenbuehler et al 2012, Hatzenbuehler et al 2015, Heck et al 2011, Ingraham et al 2016, Kahle et al 2020, Konishi et al 2016, Levak et al 2020, McGeough 2021, Morgenstern et al 2007, Morgenstern et al 2012, Nemoto et al 2005, Nemoto et al, 2012 (Results from Glynn and van den Berg 2017), Pachankis et al 2020, Pennay et al 2018, Rowan and Butler 2014, Travers et al 2020, Velasquez et al 2009, Watson et al 2020, Winberg et al 2019, Williams and Fish 2018.

Grey literature reports: Pawlowska 2015 (Brighton Switchboard LGBT Health and Inclusion Project), Keogh et al 2009 (Wasted Opportunities), Moncrieff 2014 Out of your Mind), Nodin et al 2015 (RaRe report), Valentine 2017 (SHAAP report).

The quality assessment of these studies can be found in Appendix 3.

Table 11. Primary research on effectiveness of alcohol-related interventions

Reference, date	Participants (n)	Eligibility	Name of alcohol intervention	Name of other intervention where alcohol use measured	Comparator	Relevant findings
Egan et al 2021	Sexual minority identity (i.e., gay, lesbian, bisexual, or queer) or a gender minority identity (i.e., transgender or nonbinary) (n=240)	14-18 years old who had experienced bullying / cyberbullying victimization in the past year	-	Game-Based Intervention	None	Reduction in binge drinking frequency, cyberbullying, victimisation.
Fals-Stewart et al 2009	One member of each couple of gay and lesbian couples (n=100)	Met current alcohol abuse or dependence criteria	Behavioral couples therapy (BCT) plus individual-based treatment (IBT)		IBT only	Significant heavy drinking reduction in BCT couples compared to IBT individual.
Heck et al 2011	LGBT (n=145)	College youths	-	Attending a high school with a Gay Straight Alliance (GSA)	No GSA	GSA was related to more favourable outcome for alcohol use.
Ingraham et al 2016	Older lesbian/ bisexual women (n=266)	Attending the 'Healthy Weight in Lesbian and Bisexual Women' study' aged 40 and over	-	Mindfulness Interventions	Standard weight loss approaches	Standard intervention showed a reduction in weekly alcohol intake whereas mindfulness did not.
Konishi et al 2016	LGB boys (n=359) LGB girls (364) Heterosexual boys (n=10,408) Heterosexual girls (n=10,577)	Attending grades 8-12	-	Anti-homophobia policy and Gay Straight Alliance (GSA) in school	None	GSAs and anti-homophobia policies may be beneficial in reducing problem alcohol use among all students.
Morgenstern et al 2007	MSM (n=198)	Current alcohol use disorder (AUD) with risk of HIV transmission	MI and CBT		Non-help seeking group	Motivational interviewing yielded better drinking outcomes
Morgenstern et al 2012; and Levak et al 2020	MSM (n=200)	MSM aged 18-62 consuming at least 24 alcoholic drinks / week for 90 days	Moderation-based alcohol treatment Modified behavioural self-control training (MBSCT) and medication (naltrexone)	-	Placebo or no behavioral intervention	Modified behavioural self-control training (MBSCT) showed stronger efficacy compared to Naltrexone (NTX).
Nemoto et al 2005	Trans women (n=109)	Living in the San Francisco area and had completed 10 workshops		TRANS project of health intervention and support	None	Significant reductions in alcohol use and perceived barriers to substance use services

Reference, date	Participants (n)	Eligibility	Name of alcohol intervention	Name of other intervention where alcohol use measured	Comparator	Relevant findings
Nemoto et al 2012	Trans women (n=114)	Trans African American women and Latinas aged >18 who drank alcohol daily	-	Motivational enhancement intervention (MEI) plus brief individualised health promotion education (BI)	Assessment sessions only	Significant decrease in alcohol use at 6-month follow-up.
Panchankis et al 2020	Sexual minority women (n=60)	Depression, anxiety and heavy alcohol use in the past 3 months	EQuIP (Empowering Queer Identities in Psychotherapy),	-	Waiting list	Yielded only small effects on alcohol use.
Velasquez et al 2009	HIV positive MSM with AUD (n=253)	Scored 8 or above on AUDIT, English speaking and not psychotic	Eight-session integrated intervention of motivational interviewing		Resource referrals	Reduction in number of drinks and heavy drinking days per 30-day period, and number of days on which both heavy drinking and unprotected sex occurred

Table 12. Primary research on attendance and experiences of interventions

Reference, date	Participants (n)	Eligibility	Name of alcohol intervention	Comparator	Outcomes	Relevant findings
Bobbe 2002	Lesbian (n=1)	-	Twelve step and AA	-	None	Usefulness of peer involvement.
Pawlowska 2015 (Brighton Switchboard LGBT Health and Inclusion Project)	LGBT, mostly trans. (n=25)	Attending Trans*Pride Brighton July 2015	AA	-	Qualitative comments on their experiences of attending	How to make the service more trans inclusive.
Keogh et al 2009 (Wasted Opportunities)	Gay and bisexual men and other men that have sex with men (n= 6155)	Having a problem with substance abuse	Twelve step and AA	-	Qualitative comments on their experiences of attending	Why they didn't feel that they fitted in
Moncrieff 2014 (Out of your Mind)	LGBT people (number not given)	Using London Friend helpline	Mainstream services	-	Accessibility	Few would use mainstream alcohol services
McGeough et al 2021	LGB (n=7,826)	Attending AA and lifetime alcohol use disorder (AUD)	AA	-	Common predictors of AA attendance across sexual orientations	AA useful for sexual minority women who are older, more religious with less severe AUD
Nodin et al 2015 (RaRe Report)	LGB women (n=534)	Aged 18 or over, live in England,	AA	Heterosexual women (n=470)	Qualitative comments on their experiences of attending	Difficulties with AA attendance and whether it was useful for them
Pennay et al 2018	Lesbians and bisexual women (n=25) (qualitative component of the ALICE (Alcohol and Lesbian/bisexual women: Insights into Culture and Emotions) study (apparently unpublished)	Live in Australia	AA, 12 step and mainstream counselling for alcohol problems	-	Qualitative comments on their experiences of attending	The need for more inclusive language, to acknowledge sexual identity as an important identity component while also not assuming it is the cause of all mental health and alcohol problems, and the need for improved training in LBQ issues and LBQ specialist services
Rowan and Butler 2014	Same sex attracted women (n=20)	Aged 50 and older with self-reported alcoholism and one year sobriety	12-step recovery groups	-	Qualitative outcomes	Mixed experiences of accessing recovery groups with appreciation for culturally sensitive practice.

Reference, date	Participants (n)	Eligibility	Name of alcohol intervention	Comparator	Outcomes	Relevant findings
Williams and Fish 2018	LGBT services in state	USA states	Alcohol and other substance abuse services in state	No LGBT services in state	Proportion of substance abuse programs having specific LGBT programs, and link with proportion of LGBT adults living in that state.	17.6% of substance abuse facilities had LGBT-specific programmes, but no link with proportion of LGBT adults in that state.
Valentine 2017 (SHAAP report)	Trans people (n=202)	Live in Scotland	Alcoholics Anonymous (AA)	-	Qualitative comments on their experiences of attending	Very worried about being outed as trans

Table 13. Research on protective factors and promising practices

Reference, date	Participants (n)	Eligibility	Promising practice described	Comparator	Outcomes	Relevant findings
Emslie et al 2017	LGBT people (n=33)	Live in Scotland	Questioning social norms	-	Drinking contexts and identities	Can provide a sense of connectedness but also difficulties for those who chose not to drink alcohol
Hatzenbuehler et al 2012	LGB students (n=1413)	Participated in Oregon Healthy Teens survey 2006 to 2008	Religious climate supportive of homosexuality or not	High school students (n=30439)	Alcohol abuse	Living a supportive environment linked with less abuse.
Hatzenbuehler et al 2015	Same sex attracted young people (n=151) and both sex attracted young people (n=708)	Participated in USA National Longitudinal Study of Adolescent Health (Add Health).	Social networks	Opposite attracted young people (n = 13353)	Alcohol misuse	Alcohol misuse disparities mediated by social networks.
Kahle 2020	Sexual minority adults (n=534 men, 817 women)	Participated in USA National Epidemiologic Survey on Alcohol and Related Conditions 2012–2013	Structural social support	Heterosexual adults (n=15190 men, 19454 women)	Alcohol use disorder	Significant associations between functional and structural support and AUD which differ by sex and sexual identity status
Travers 2020	LGB students (n = 123)	Live in Northern Ireland	Social support	Heterosexual students (n=993)	Alcohol use disorder	Social support from family has the potential to mitigate risk of AUD
Watson 2020	Sexual minority adolescents (n=2678)	Participants of British Columbia Adolescent Health Survey	Supportive school and community climate, such as more frequent LGBTQ events	-	Alcohol use	Odds of substance abuse lower where there were more LGBTQ events
Winberg 2019	Sexual minority college students (n=574)	Live in USA	Microagressions – hearing "that's so gay" and "no homo" on campus	-	Hazardous alcohol use	Hearing these phrases significantly increased the risk of hazardous drinking

5.2 Standard interventions to reduce alcohol use in LGBT+ people

Standard alcohol use interventions available include specific alcohol counselling or couple therapy, self-help groups such as AA, or working with a counsellor, peer or lay person to undertake the 12-step programme.

5.2.1. Therapy evaluations

Behavioural couple therapy

Behavioural couple therapy treats those who use alcohol to excess with a spouse or live-in partner to build support for abstinence, whilst aiming to improve relationship functioning. Research by Fals-Stewart et al (2009) tested the efficacy of behavioural couple therapy with gay and lesbian alcohol use disorder participants, and their non-substance-abusing partners in an RCT. Outcomes were compared for behavioural couple therapy versus individual-based treatment from before to after treatment over a twelve-month period.

Two separate trials included lesbian couples (n=48) and gay couples (n=52). Participants were randomly assigned to behavioural couple therapy or individual-based treatment with attendance of AA self-help groups. Each treatment included 32 scheduled sessions that lasted 60-minutes over a 20-week period. After the 20-week treatment period, the patients and their partners were contacted and interviewed every three months.

Results indicated the gay and lesbian couples who received behavioural couple therapy reported significantly lower proportions of heavy drinking days at the 12 month follow up after treatment (mean=18.00 (SD=20.48)), compared to couples where the person who drank to excess received individual based therapy only (mean=32.16 (SD=23.47), $p<0.05$.

Post treatment follow-up effects were maintained through one year. In addition, couples who received behavioural couple therapy reported higher levels of relationship adjustment at the end of treatment, and in the year after treatment compared to those who received individual based therapy. These findings provide evidence of long-term effectiveness of couple-based therapy for gay men and lesbian women to reduce heavy drinking days for a year following the intervention (Fals-Stewart et al 2009).

Empowering Queer Identities in Psychotherapy (EQuIP)

An RCT by Pachankis et al (2020) evaluated the EQuIP intervention (see Appendix 4). EQuIP was a 10-session intervention adapted from transdiagnostic cognitive behavioural therapy (CBT) for sexual minority men (the ESTEEM intervention). In consultation with service users the intervention was then tailor-made for treatment of young sexual minority women with a median age of 25, to reduce minority stress in these women (n=60). Participants included 41.7% racial and ethnic minority, and 43.3% transgender and nonbinary women. All participants had experienced heavy alcohol use in the past 90-days plus depression or anxiety. Heavy alcohol use was defined as four or more drinks in one sitting in the past 3 months. They also examined the intervention's ability to reduce cognitive, affective, and behavioural mechanisms underlying the adverse impact of minority stress on health, including both minority-stress- specific processes such as internalized stigma, rejection sensitivity, and concealment; as well as universal risk factors for psychopathology such as rumination, emotion regulation difficulties in addition to social isolation.

In order to adapt the intervention, clinical experts (n=12) and sexual minority women (n=19) completed semi-structured interviews. Qualitative results from interviews were used to inform revisions to vignettes, worksheets, and behavioural experiments for the intervention so they reflected unique minority stress interpersonal contexts, as well as strategies utilised to reduce unhealthy alcohol use. These strategies involved challenging alcohol use norms commonly perceived in sexual minority communities and establishing relationships with other sexual minority women without alcohol, or outside the context of alcohol. After the intervention was revised, the sessions were facilitated by a counselling psychologist and doctoral students. Therapy sessions were video recorded for supervision (Pachankis et al 2020).

The control arm of the RCT was the waiting list. Forty-nine (84%) of the randomised participants in the intervention arm completed all 10 sessions of EQuiIP. Results showed that the treatment significantly reduced symptoms of depression and anxiety compared to the waiting list, and marginally reduced alcohol use compared to the waiting list. Thus, although the trial recruited participants with recent heavy drinking, the EQuIP intervention yielded only small effects on alcohol use (mean unhealthy alcohol use in the intervention arm = 2.16 (SE 0.27) at post intervention, compared to 2.80 (SE 0.64) in the waiting list control).

In support of the intervention's acceptability, an exit survey undertaken by all participants at the 6-month follow-up, showed that the majority of participants indicated that the study somewhat helped them (98.1%), was a positive experience (100%), whilst helping them achieve their goals (96.2%), and helped them cope with minority stress (90.4%), and 98.1% indicated that they would recommend the intervention to a friend. Overall results of the trial showed that the treatment was effective in reducing depression and anxiety, but with only a marginal reduction in alcohol use for participants (Pachankis et al 2020).

Modified behavioural self-control therapy and naltrexone

Morgenstern et al (2012) evaluated modified behavioural self-control therapy versus no therapy and naltrexone versus placebo in an RCT with men who have sex with men (MSM) with problem drinking who were seeking to reduce but not quit drinking. Participants all received a brief medication compliance intervention. Participants (n=200) were treated for 12 weeks and assessed 1 week after treatment completion. Modified behavioural self-control therapy was successful in all three outcomes of number of drinks per week, number of heavy drinking days per week and drinking in a non-hazardous manner. Naltrexone was also more effective than placebo for the negative consequences of drinking.

A second paper on this study (Levak et al 2020) was a secondary analysis using longitudinal panel data. They studied effective goal setting in the moderation-based alcohol intervention to help people curb their alcohol use over time. More specifically they studied which goals yielded the most effective outcomes for reduced alcohol use. Whilst using the principles of goal setting theory, this study explored the relationship between goal difficulty and goal achievement for sexual minority men (n=178). The study tested the effects of goal difficulty defined as the proposed magnitude of change from current drinking in number of drinking days, and number of heavy drinking days on goal achievement at three-month intervals up to nine months.

Research findings yielded a significantly positive relationship between goal difficulty and goal achievement for the number of drinking days. Findings showed a negative relationship between goal difficulty and goal achievement for the number of heavy drinking days.

Individuals who committed to at least one day of abstinence per week were more likely to achieve moderation, compared to those who did not commit to reducing their drinking days. Levak et al (2020) suggested that treatment providers should consider guiding sexual minority men who drink heavily to set challenging goals related to reducing the number of days they drink at treatment initiation, as such goals may be more effective in producing better outcomes.

Motivational interviewing plus coping skills

Morgenstern et al (2007) tested the efficacy of either four sessions of motivational interviewing (MI) or 12 sessions motivational interviewing (MI) combined with coping skills training (delivered by CBT) for alcohol use disorders in MSM (n=198) who were at risk of HIV transmission. A third group were those who refused treatment. Follow up was for 12 months following the end of the 12 week treatment period. MI yielded significantly better drinking outcomes during the 12-week treatment period compared to MI and CBT, but interestingly those who refused treatment reduced mean drinks per day the most at the start of the treatment period. Analysis of alcohol use consequences at 9 and 15 months indicated no significant differences between the motivational interviewing and the combined intervention groups in mean level or rate of change in alcohol use.

Motivational interviewing plus peer group education/support

Velasquez et al (2009) evaluated a counselling and peer-group education support intervention in HIV positive MSM with alcohol use disorders (n= 253). They were allocated randomly to eight sessions of an integrated intervention of motivational interviewing using a transtheoretical model, or referral to resources available via a detailed guide to community-based agencies and programs focused on alcohol issues, HIV and safer sex. Follow-up assessments were at 3, 6, 9, and 12 months after baseline. The intention of the intervention was to reduce HIV transmission through reduction of alcohol intake or abstinence, or reduction of unprotected sex. They found control group increases in the number of standard drinks consumed (OR=1.38, 95%CI 1.02 to 1.86) and number of heavy drinking days per month (OR=1.5, 95% CI 1.08 to 2.10) compared to the intervention group.

5.2.2 Alcoholics Anonymous attendance and experiences

This section summarises what happens when LGBT+ people attend the AA and twelve-step programme (Nodin et al 2015, Moncrieff 2014), with qualitative comments for gay and bi men (Keogh 2009), trans people (Valentine 2017), lesbian women (Rowan and Butler 2014) (see Table 12).

Recovery from excessive drinking, or recovery from 'alcohol use disorder' (AUD), as frequently described in research includes the adoption of a stable non-drinking lifestyle of sobriety or abstinence, with increased health and well-being accompanied by greater social connection. Within the recovery approach, substance use is viewed within a biomedical frame where substance abuse or 'alcoholism' is understood as a chronic-relapsing condition. The difficulty of maintaining abstinence following treatment is commonly recognised within the recovery approach (Rowan and Butler 2014). Research by Pennay et al, 2018 found that, of their 25 qualitative research participants of a study exploring alcohol and mental health difficulties in same sex attracted women, four had accessed mainstream alcohol services, and 17 had accessed treatment from counsellors, psychologists or psychiatrists.

Research in the UK (Nodin et al 2015) with LGB+ people (n=1,320), including interviews with LGB women (n=23), found that recovery from alcohol abuse was a complex and prolonged process, marked by sometimes repeated periods of trying to reduce or control their alcohol consumption, with some people attempting to stop drinking entirely. During this process of creating a way of life that is free from alcohol, or socialising without alcohol, support from partners, family, friends, self-help groups and professionals were key to their recovery. With support of family and friends not drinking became an option where social activities occurred in settings such as cafes instead of pubs or clubs where alcohol was accessible. An integral part of the recovery programme consisted of peer support groups to help people develop a non-drinking lifestyle and related identity.

The twelve-step programme is a key part of the AA recovery approach. The Nodin et al (2015) UK study with LGB+ people (n=1,320) included interviews with participants who accessed this programme. Participants' experiences of accessing it were varied, ranging from appreciation for alternative forms of social support that some people needed during the recovery process, to finding the religious component challenging.

> *"Marian: I have a love-hate relationship with AA to be honest. It has been amazing in that there is somewhere to go and great people. It is just wonderful to have all these meetings where people are so supportive and all round lovely and if you live in London it's brilliant but I do find some of them – I don't find the spirituality hard, but they say it is about spirituality rather than God but actually God is a big part of AA and I am an atheist and I still struggle with that."*

Other studies found twelve-step programmes to be less effective for sexual minority LGB people due to the roots in spiritual or religious doctrine that may be less acceptable to this group. Keogh et al (2009) in their study with gay and bisexual men (n=679), found that some men had tried 12-step programmes based on abstinence. The sense of complete personal surrender involved in AA interventions was considered by some to be inappropriate, whereas others were suspicious of their quasi-religious connotations.

From: Keogh et al 2009

> *"I don't know much about [12-step] actually but what I do know about it I think is a bit too rigid [...] almost militaristic sort of, spiritual stuff so its, its that kind of, its got some connotations of strict religious stuff somehow for me [...] I don't really like that kind of cut and dry, black and white approach to things really."*

The twelve-step programme and related groups did provide opportunities to gain support from others who were attending the same programme, however some perceived the rigidity of the programme as challenging and the underlying spiritual component as contentious, whereas older people who were religious, were less inclined to comment on the religious undertone.

A user satisfaction survey of the London Friend service (Moncrieff 2014) found that 53% of service users would not feel comfortable accessing mainstream services, and 35% unsure. Only 12% reported they would have felt comfortable accessing mainstream treatment.

Alcoholics Anonymous

During recovery from alcohol, groups such as Alcoholics Anonymous (AA) or Adult Children of Alcoholics (ACOA) help people to deal with stressors that may have contributed to alcohol abuse, whilst gaining valuable social support to help develop a way of life that is free from alcohol.

Along these lines, research by McGeough et al (2021), examined rates of AA attendance in the USA for people (n=7862). Study participants included heterosexual men (n=4576), heterosexual women (n=2919), bisexual men (n=56), bisexual women (n=94), gay men (n=130), and lesbian woman (n=87), from the American National Alcohol Survey. The study found that lesbian and bisexual women (but not gay and bisexual men), had greater odds of attending the AA, whilst controlling for lifetime alcohol use disorder severity, gender, race or ethnicity, age, religiosity, and current income. Lesbian and bisexual women's results showed a strong association between older age and AA attendance, and between religiosity and AA attendance. Sexual minority women were found to seek support for needs such as social connection in addition to alcohol-related problems. They concluded that the AA may offer a source of social support to compensate for overall lower levels of social support in sexual minority women, and that it may serve as a promising resource for sexual minority women who experience alcohol-related problems, particularly for sexual minority women who are older, more religious, and for those who have less severe alcohol use disorder (McGeough et al 2021).

Due to the severity of substance use reported by some members of the AA, the groups were not perceived as suitable for everyone. In the Keogh et al (2009) study with gay and bisexual men (n=679), all gay and bisexual participants except one felt that the AA was not suited to them, with some men reporting that their level of dependency did not merit such an intervention.

From: Keogh et al 2009.

> *"I've been to [AA] meetings and things [but they weren't useful] because I weren't as bad as a lot of them [...] living on whiskey and they were saying I usually drink 4 bottles of vodka a day and [...] I mean I've never been like that [and] some of them haven't had a drink for 18 years and we stand up and we all clap."*

The experience of attending AA varied across populations groups. A survey with trans people (n=212), some feared being out or that their gender identity would be accidentally revealed during AA groups as they transitioned (Valentine 2017)

From Pawlowska 2015 (Brighton Switchboard)

> *"Having experienced transphobia and bigotry in (AA) meetings. More should/could be done to help others understand diversity better within support groups".*

From: Valentine 2017 (SHAAP report)

> *"When I started in AA, before my transition I was sometimes misgendered and people thought that they misheard my masculine name. After I transitioned, I also had fear that I would be outed somehow and rejected from the group which would mean that I*

lost my support in recovery. To be honest, I still have that fear... And the fear that if I got outed in AA, that I might get outed in the wider community outside of AA."

The Rowan and Butler (2014) study with older lesbian women (n=20) spoke about the importance of peer support where a participant told how a group of lesbians at AA helped her when she was struggling.

From: Rowan and Butler 2014

> *"They were the ones that really came through for me. These lesbians, I mean, I don't know what I would've done without them. I really don't. They cemented me in AA, these people are gonna show up and they're gonna help. They walk their talk. That's what really got me involved with AA in a much stronger way."*

During recovery self-help groups, some of which were LGBT+ specific, were found to provide a valuable sense of community support (Nodin et al 2015).

From: Nodin et al 2015 (RaRe report)

> *"[I]t was really important to go to a lesbian and gay [AA meeting]because I realised, I carried some shame about my own sexuality –internalised homophobia – and needed to be with other gay people before I mentioned relationships or mention[ed] a girlfriend in a straight or mainstream meeting of Alcoholics Anonymous. It took me a couple of years to get to the point where I could mention my girlfriend".*

Research indicates the importance of AA groups run by LGBT+ people, or where this form of provision was not available, for service providers to have understanding of the challenges faced by LGBT+ people such as homophobia or internalised homophobia.

5.3 Accessibility of programmes to LGBT+ people and availability of LGBT+ specific programmes

A scoping study by London Friend (Moncrieff 2014) examined how drug and alcohol treatment services in London could meet the needs of LGBT people more effectively. The study found poor assessment of LGBT treatment needs in local alcohol and drug services. They suggest that generic services should take steps towards becoming more inclusive, even where providers do not offer LGBT-specific services. The study provides practical toolkits to assess LGBT competence.

From: Moncrieff 2014 (Out of your Mind)

> *"It was very important for me, I felt intimidated in mainstream services. I couldn't express who I am. I never disclosed my sexuality. You can feel more relaxed in LGBT services."*

Pennay et al (2018) asked about how services could become more inclusive, and one of the issues highlighted was how mainstream services tended to assume that all LGBT+ people's problems are due to sexual orientation.

> *"Often if someone goes to a mainstream service and comes out as gay, there's sometimes a tendency to think that that's what the issue is. But it actually might not*

be the issue. It just happens to be who you are, and the issue can be around anything. So – although it's important, I guess, to look at that relationship between sexuality and mental health – it doesn't mean that there's a direct relationship all the time."

Keogh et al (2009) asked gay and bisexual men whether, if they were to access a service, would it be important to them that the service was gay–run or gay-friendly? The majority of those who gave an opinion said that they would prefer any service they used to be gay-run or gay-friendly as some participants feared heterosexist attitudes from mainstream services.

From: Keogh et al 2009 (Wasted Opportunities)

"I think also there's an experience of being gay which people have if they're gay. And that the language you're speaking is the same. So a doctor isn't talking to you constantly about how is it affecting your family life. And will it impact on the kids? [...] I think it would be more efficient. More effective. And more pleasant."

Bobbe (2002) found in her case study research with a lesbian woman (n=1) who used alcohol to excess, that the AA offered limited opportunity to discuss sexuality and the challenges around internalised homophobia. For the participant, internalised homophobia came about due to heterosexual norms in her family of origin, where she experienced marginalisation and left home unexpectedly at the age of 16. The understanding of these issues by a lesbian sponsor and fellow AA peer meant that she could 'come out' and open up more easily about her emotional challenges associated with internalised homophobia.

Further research with older lesbian women (n=20), aged 50 and above reported the importance of a therapist being a lesbian so that the participant felt safe and understood whilst dealing with her history of abuse (Rowan and Butler 2014).

From: Rowan and Butler 2014

"I think it [seeing my therapist] made all the difference in the world. Without it I wouldn't have stayed sober because I needed to address a lot of the reasons why I drank. We did a lot of work primarily at the beginning with my sexual abuse from when I was a child and then also at the same time we did some work with keeping me sober."

Participants in the Keogh et al (2009) study with gay and bisexual men (n=679), talked about the importance of any service provider having to understand underlying societal or structural factors such as homophobia that may increase gay men's tendency towards problematic substance use.

From: Keogh et al 2009.

"If I were to decide that I wanted to go and start seeking help in whatever form, it would be important for me that that therapist be gay. I'd prefer that, and I'd prefer if the service was gay-related. You know it was geared towards particular needs. Gay-led. [...] because I think there are particular issues, like homophobia for instance which may have an influence in that person's drinking."

Similarly Pennay et al (2018) investigated the importance of mainstream service providers understanding the issues in the LGB community.

> *"It's lovely if you accept and are willing to work with sexual minorities. But if you haven't got the training for this minority group, then get it first … You can always display the rainbow flag … but it's more important that you've got the skills to be working in this field."*

Because drug or alcohol use (and the control of it) was bound up with social norms relevant to sexual orientation, it was seen as important that service providers were familiar with these norms as they presented in LGBT+ communities.

From: Keogh et al 2009.

> *"I think it would be [important to have a gay or gay-friendly service] in the sense that because I find myself more inclined to drinking with my gay friends. And because my gay friends tend to drink more [...] than my straight friends."*

In summary, LGBT+ professionals and peers played an important part in helping LGBT+ people feel understood, where they could 'come out' and open up whilst accessing support to help them tackle excessive use of alcohol. An understanding of the norms relevant to LGBT+ people, their lives and their use of alcohol went a long way in helping people feel understood.

Non-UK research

Williams and Fish (2018) conducted research on the availability of LGBT specific substance abuse treatment options in the United States of America. They suggest that structural barriers may prevent people from engaging in substance use treatment. These barriers included cost, the stigma people may encounter around substance misuse disorders, and the availability of services. LGBT people faced additional barriers in accessing quality treatment such as negative attitudes of service providers towards LGBT people, or a lack of knowledge about their specific health needs, with heteronormative treatment practices potentially overlooking the unique experiences of LGBT people. As a result of these barriers encountered, LGBT people may seek service providers with LGBT affirmative practice. In this study service providers with LGBT specific treatment options, offered a means of providing culturally sensitive and culturally competent care.

The research examined the availability and characteristics of the facilities that offered LGBT-specific programmes. The results indicated that between 10% of government facilities, to 21% of private substance abuse facilities reported LGBT-specific programmes. Fewer than one in five substance abuse facilities offered LGBT-specific programmes, suggesting that many facilities may not be equipped to meet the specific needs of LGBT people (Williams and Fish 2018). A range of facility characteristics were associated with the likelihood of substance abuse facilities providing LGBT-specific programmes. The characteristics include offering outpatient or residential treatment, facilities that are under private ownership and facilities with a religious affiliation. As the research reported scarce substance abuse facilities offering programmes specifically designed for LGBT people, despite the well-documented need, the study substantiates the necessity of further culturally competent treatment options for LGBT people (Williams and Fish 2018).

5.4 Other interventions in LGBT+ people where alcohol use was measured

In the absence of 'ideal evidence' evaluating alcohol use interventions in LGBT+ people compared to heterosexual/cisgender people, the next best evidence are interventions evaluating a change in alcohol use in LGBT+ groups following more generic interventions intended to boost wellbeing. These are listed in Table 11.

Anti-homophobia policy

Konishi, et al (2013), conducted a population-level evaluation of school-based interventions in Canada to prevent problem substance use amongst LGB adolescents. They examined whether students' odds of recent substance use (including alcohol), were lower in the presence of explicit anti-homophobia policy at their school. The anti-homophobia policy had to be established within the last three years. The study analysed a population sample of 8-12 grade students (n=21,708), to test the effects of policies on substance use outcomes for both LGB and heterosexual students. The research results indicated that among both boys and girls, LGB young people were more likely than their heterosexual peers to report frequent binge drinking in the past month (6 days or more). Both LGB boys and girls were more likely compared to their heterosexual peers to report multiple consequences of their alcohol use in the past year.

Findings suggested that anti-homophobic bullying policies were linked to significantly lower odds for some but not all types of recent risky alcohol use. Anti-homophobic polices were also linked to significantly lower odds of past year harms related to alcohol for LGB young people. These were predominantly among girls and almost exclusively in schools where the policies had been established for at least three years. Thus, the research findings support school-based strategies to reduce homophobia and to foster school inclusion. These strategies may be beneficial in reducing alcohol use among all students, not only for sexual minority students. Given that as many as half of students who were harassed for being thought to be gay, lesbian or bisexual may actually identify as heterosexual, an intervention that improves school safety and climate for sexual minority young people, may reduce harassment and its effects for both heterosexual as well as gender/sexual minority students (Konishi, et al 2013). Anti-homophobia policy intervention in schools showed promising results for reducing alcohol use in general populations, with anti-homophobia policy change benefitting heterosexual young people as well as LGB young people.

Game-based web intervention

Digital technologies such as game-based interventions accessed via the web are increasing in popularity. Feasibility of a game-based intervention was tested by Egan et al (2021), for increasing help seeking and coping skills, as well as the resources used and wellbeing among LGBT young people in the USA. An RCT tested a community informed and web-accessible computer role-playing game intervention with LGBT young people aged 14-18 (n=240). Participants were randomised into intervention (n=120) and control (n=120) groups, and completed a baseline survey (100%), a one-month follow-up (73%), and a two-month follow-up (64%). For the intervention group, 55.8% downloaded and played the game. Results indicated that of those participants who played, 46.2% reported a desire to play again, and 50.8% would recommend the game to others. The game acceptability exceeded hypothesised benchmarks and improved affect, tension and feelings of competence. Intervention participants reported significantly larger reductions in binge drinking frequency compared to control participants.

The game-based intervention was feasible and acceptable to LGBT young people, with preliminary results showing the intervention improved several health-related behaviours, including a significant reduction in binge drinking frequency. Participants appreciated the diverse identities where they had the opportunity to develop a character, they enjoyed the tasks, the battles and the pace of the game. A LGBT specific game-based intervention was shown to overcome barriers to traditional face-to-face interventions, such as unintentionally revealing the sexual or gender identity of LGBT young people by unintentionally 'outing' them, or difficulties in recruiting participants in rural settings, or unforeseen discontinuation of in-person intervention programmes during the Covid-19 pandemic. Given the positive results for the game-based intervention showing a reduction in binge drinking frequency, the authors suggested that a larger scale trial is needed to test whether the intervention could reduce health inequalities for LGBT young people (Egan et al 2021).

Gay-straight alliance

Heck et al (2011) examined the specific benefits of attending a college with a gay-straight alliance (GSA), where LGBT young people could access school-based clubs that aimed to improve the school, college or university climate for LGBT young people whilst educating the school community about sexual minority issues. This contributed to a safer atmosphere for LGBT young people by opposing hate speech, homophobia and victimisation. Research participants included LGBT (n=145) young people recruited from settings with and without a GSA and measured mental health outcomes including alcohol use. Findings show that young people who attended a school or college with a GSA reported significantly more favourable outcomes related to school experiences, alcohol use and a reduction in psychological distress. LGBT young people attending college with a positive gay-straight alliance (GSA+) showed significantly lower alcohol use (AUDIT) scores compared to their peers who attended college with no GSA, when controlling for covariates. In addition, young people where there was a GSA not only reported more favourable outcomes related to alcohol use, but also more favourable outcomes for depression and general psychological distress. The research concluded that GSA acted as a protective factor against problematic substance use, depression and psychological distress amongst LGBT young people.

Health education and generic public health intervention

Nemoto et al (2005) evaluated a generic health education and public health intervention for trans people, called the TRANS programme (for further details see Appendix 4). Participants were trans African American women and Latinas aged 18 and older (n=114) in the San Francisco area. In this case series, 359 eligible participants completed the pre-test risk assessment interview, 206 enrolled in the health education workshop program, and 109 completed 10 workshops and provided post-test data. The intervention was 18 workshops, specifically for trans people, on a variety of topics including sex, relationships and health, reducing drug use and improving coping skills, and general life needs. Sessions were facilitated by health educators (all of whom were trans women).They found that the proportion drinking any alcohol in the previous 30 days dropped from 57% before the workshops to 48% at post-intervention follow up.

Mindfulness

Mindfulness-based interventions use methodical procedures to develop greater awareness of moment-to-moment experiences of affective states, physical sensations and thoughts. During these interventions, participants are encouraged to approach this raised awareness and the related sensations, thoughts and feelings without judgement. Research conducted by

Ingraham et al (2016), examined the effects of a mindfulness-based intervention on the health behaviour and quality of life outcomes in older (>40) lesbian or bisexual women (n=266). The mindfulness programme involved 12 weekly sessions lasting 2-hours each. For alcohol consumption a questionnaire measured the frequency and the quantity of alcohol intake and binge drinking. Questions assessed consumption in the past 30 days, and a variable was constructed to measure average number of drinks per week, and average number of binge drinking episodes (four or more drinks in one sitting) per month. The research findings did not confirm mindfulness as effective against excessive alcohol use. The objective was a 50% reduction in alcohol drinks consumed. The participants having the standard intervention had significant reductions in weekly alcohol intake, whereas the mindfulness sites did not, which could be owing to the higher baseline drinking levels in the standard intervention participants. The subset of those reporting >2 drinks consumed at the start (n=45) showed that the programme resulted in 46% reporting low change, 28% reporting medium change and 44% reporting high change, which was not statistically significant (p=0.57).

Motivational enhancement

Nemoto et al 2012 evaluated a TEAM-I intervention as an RCT with a 3 and 6-month follow-up. Participants were randomly assigned to Brief Intervention (two 2-hour counselling sessions), Motivational Enhancement Intervention (six 2-hour counselling sessions) or a control group. The motivational interviewing intervention was based on stages of change, with the objective to reduce substance use and sexual risk, to develop supportive social networks and to engage in healthier or prosocial community activities, and to increase self-esteem and pride in being a trans woman. The brief individualised health promotion education was to provide brief information and guidance about substance abuse and HIV risk reduction, to provide information about hazardous substance use and HIV risk behavioural patterns without confrontation, and to appraise ideas for substance use and HIV prevention. Findings suggested that both intervention groups had reduced alcohol intake from the start of the programme to the 6 month follow up, but the motivational interviewing intervention participants showed a highly significant decrease in alcohol use (p=<0.01) compared to the brief intervention and control groups (Glynn and van den Berg 2017).

5.5 Protective factors and promising practices

During the searches, a number of papers reporting protective factors were also found (see Table 13). These factors act as a defence in reducing the harmful use of alcohol over the lives of LGBT+ people. They included social support, resilience and maintaining dignity, questioning social norms, a supportive religious climate, and imagining a future without alcohol.

Social support

Social support is particularly important for LGBT+ people as they may experience minority stress or marginalisation due to their sexual orientation or gender identity. As the literature indicates, more so for those who are young and in school, or those who are at college or in university settings. Research indicates that the availability of, or lack of social support is intricately linked to the way LGBT+ people use alcohol.

Research with university students in Northern Ireland (n=1,116) by Travers et al (2020), included those identifying as heterosexual (n=993) and LGB (n=123). They assessed whether LGB status was associated with more trauma exposure and poorer mental health, and whether social support mediated these associations. The research found that the LGB status of

students was significantly associated with increased trauma exposure and symptoms of PTSD, depression and anxiety, but not with problematic alcohol use. Alcohol use for heterosexual students (M=7.93 (SD 5.26)) varied only marginally compared to LGB students (M=8.83, (SD 6.32), p=0.21).

The research indicated that social support from family had the potential to mitigate risk and thus acted as a protective factor. It was thought likely that political and societal change in Northern Ireland, such as legalisation of same-sex marriage and further liberalisation of social and cultural norms, would increase levels of support and acceptance for LGB young people. They considered that educational initiatives should raise awareness of the importance social support for LGB young people who may experience symptoms of anxiety, depression or PTSD (Travers et al 2020).

A Canadian study by Watson et al (2020), investigated the associations between community-level LGBTQ supportive factors and substance use among sexual minority young people (n=2,678). The study considered how environmental factors such as school and community climate might protect in substance use behaviours amongst LGBTQ young people. The study found that LGBTQ young people living in supportive communities with more frequent LGBTQ events such as Pride had lower odds of substance use compared to those living in communities with fewer opportunities for support. A large population size was related to lower odds of lifetime alcohol use for boys, but overall community supportiveness was found to be unrelated to alcohol use in this study. The authors suggested that alcohol use was more normative among young people in general, the availability of LGBTQ community organisations, events and programmes may serve as a protective factor against them accessing illegal drugs. An overall safe and supportive climate was associated with positive outcomes for LGBTQ young people (Watson et al 2020).

A US study with LGBTQ+ university students (n=574) included 50.7% gay and lesbian participants (n=287) with an average age of 22.7 years (Winberg et al 2019). The study investigated the impact of micro aggressions on substance use. Associations between hearing phrases such as "that's so gay" and "no homo" as illustrations of micro aggressions on campus and hazardous alcohol use and the frequency of illicit drug use was examined. These micro aggressions conveyed negative messages of being gay or lesbian or having same-sex attractions as inferior to being heterosexual. In this university setting, "that's so gay" is commonly used as a negative reference to something but has become a preferred "slang" term amongst students. These sayings distanced the speaker from anything that could be associated with being gay, whilst supporting the notion that being gay or having same-sex attractions was unacceptable.

Results were collected via an online survey identifying both personal and environmental factors that promoted academic success and personal wellbeing for LGBTQ+ college students in the USA. The research found a significant association between hearing phrases such as "no homo" and hazardous alcohol consumption (aOR = 1.22, (95% CI 1.06 to 1.41)). Lesbian and gay students may have been negatively affected by hearing these phrases on campus, showing a significant association with greater likelihood of hazardous drinking. The authors suggested that frequent use of these terms on campus promoted a heterosexist environment that may have marginalised non-heterosexual identities, behaviours and attractions. These results correspond with minority stress theory research indicating that subtle discrimination reflected in derogatory terms can negatively affect sexual minority students. Minority stress theory illuminates the reported relationship between micro aggressions and hazardous alcohol

use. Winberg et al (2019) suggested that increased alcohol use may be a coping mechanism for the minority stress that gay and lesbian students encountered. Although heterosexist phrases were frequently used without the intention of harm, they have negative consequences for gender and sexual minority groups. They considered that efforts should be made to reduce use of micro aggressions and any harmful effects by creating a more welcoming campus environment, including university support systems, and safe spaces for LGBTQ+ students.

A US study by Kahle et al (2020) used a cross-sectional design to evaluate the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III) by sexual orientation and social support. They included a nationally representative cross-sectional sample of adults (n=36,309), of whom 3.7% identified as being from sexual minority communities and measured structural support by the frequency and type of past two-week social contact with kin and non-kin, and functional social support using a Social Provision Scale. They found that higher social provision was associated with lower rates of alcohol use disorder (adjOR 0.77, 95%CI 0.71–0.84). Also, they found that higher sexual orientation discrimination scores were positively associated with an alcohol use disorder in the past-year.

Hatzenbuehler et al (2015) examined whether the composition of social networks contributed to sexual orientation differences in substance use and misuse, including alcohol misuse, using the USA National Longitudinal Study of Adolescent Health (Add Health) cohort study. Social networks were measured using respondents' five best male and five best female friends who were uniquely identifiable students from the in-school questionnaire. They found that, in the social networks of both-sex attracted young people, the frequency and quantity of drinking and drinking to intoxication was significantly higher than among the social networks of opposite-attracted young people, but there was no difference between same sex attracted and opposite attracted young people's networks regarding these alcohol use outcomes.

Resilience and dignity

Although resilience is often perceived at structural and systems level instead of a characteristic inherent in people, Rowan and Butler (2014) associated resilience with the ability to bounce back from adversity. For the older lesbian research participants in their study (n=20), their ability to abstain from alcohol required an understanding of the function of alcohol in helping people to cope with the discrimination and pervasive heterosexism they experienced earlier in life. The ability to be resilient during abstinence was tied to an understanding the historic context in which sexual minority people lived. Participants reported how LGBT people socialising in a gay bar were reportedly arrested and charged for disorderly conduct. The quote reflected the discrimination and pervasive heteronormativity one participant had experienced in earlier life.

From: Rowan and Butler 2014

> *"It was like a thing that they did back then. We knew that they [the police] raided gay bars and it was just part of the culture. They took everybody [from the gay bar]. They used to bring the paddy wagons around and they would raid the [gay] bars and take everybody to jail. We were having a good time (laughs) [because] they took us all at the same time and we were all drunk. It was a big joke. There were at least 20 women and we were all in a holding cell. I worked in a bar so I didn't think much about it."*

The quote illustrates the resilience required to deal with adverse life situations such as minority stress based on the discrimination she experienced. The research indicated the importance of respecting the inherent dignity of older lesbians and the way they used alcohol to cope with their difficult environment at the time, and to deal with pervasive or overt heteronormativity and homophobia that they encountered. Those who provided support required an understanding of individual and social factors that may be at work when people drink alcohol to excess. This research pointed to the importance of culturally sensitive treatment that maintains dignity as part of any intervention for older lesbians with alcohol-related problems.

Questioning social norms

Research by Emslie et al (2017) explored the relationship LGBT people (n=33) had with alcohol in Scotland. They were interested in how LGBT people used alcohol and how their related drinking practices may have contributed to constructing their gender and sexual identities. Participants perceived heavy drinking as key to the commercial gay scene (Emslie et al 2017). The use of alcohol was associated with social relationships and a sense of connectedness in friendship groups, also pertaining to consumption rituals in what people drink (e.g. cocktails, shots, alcopops or beer), as well as habits like clubbing on Saturdays, with awareness of the function of alcohol in helping people to gain acceptance or to fit in. The use of alcohol reflected a normative undertone in the association between drinking and LGBT identity. Some participants who chose not to drink may encounter resistance from LGBT peers including reactions such as people that may be 'alarmed', or non-drinking ended conversations or could lead to hostility. The choice of drink and drinking vessel was important to some LGBT participants in what gay men and lesbians drink (alcopops, spirits, cocktails, beer, ale etc.)

From: Emslie et al 2017

> *"'The obvious kind of stereotype is that straight men drink beer and that gay men drink cocktails. By and large, I think it's more or less accurate. But I think there is a certain pressure to drink what you're expected to drink. I've got a male straight friend who doesn't like beer, he asks for like a vodka lemonade, he gets teased about it and it's a joke. I mean, it's nothing serious but I always find that quite ridiculous just cause I think why does it matter?"*

The study suggested that drinking is a social practice through which people demonstrate complex LGBT identities such as lesbian (butch or femme) as well a gay (lad, twink or bear). They considered that an understanding of the central role of identity in drinking practice was required when developing interventions to reduce alcohol-related harm (Emslie et al 2017). Any intervention should support people to develop strategies where they assert themselves against alcohol-related norms amongst LGBT+ people (Emslie et al 2017; Pachankis et al 2020).

Integration of religious beliefs and sexual orientation

Hatzenbuehler et al (2012) conducted research on the US Oregon Healthy Teens study, which included 31,852 young people, of which 1,413 where LGB, to examine whether health risk behaviour including alcohol abuse symptoms for LGB young people were partly determined by the religious composition of the communities in which they lived. The research found that alcohol abuse symptoms were significantly higher amongst LGB young people living in highly

religious climates compared to heterosexual youth living in highly religious climates. In addition, LGB young people living in settings with the religious climate that was less supportive of homosexuality had higher levels of alcohol abuse symptoms, compared to LGB young people living in supportive religious climates. For those living in a setting where the religious climate was supportive of homosexuality, this support of diverse sexual orientations was associated with significantly fewer alcohol abuse symptoms amongst LGB young people (OR=0.58; 95% CI 0.40 to 0.85, p=0.005) compared to heterosexual young people (OR=0.83 (95%CI 0.77 to 0.89, p<0.001). The effect of religious climate on health behaviour was stronger among LGB compared to heterosexual young people (Hatzenbuehler et al 2012).

Imagining a future without alcohol

Rowan and Butler (2014) in their research with lesbian women (n=20) aged 50 and over reported the impact of people not being able to see a future due to alcohol. A participant noticed that several drinking friends had committed suicide and that she did not want to end up like them.

From: Rowan and Butler 2014

> *"How did I talk myself into it? What can I say? I was sick and tired of being the person I was. I didn't see any future. I saw hopelessness; really I saw that I was going down the same road as my friends were that committed suicide and I heard a lot about AA and listened to some of my friends who had been in AA."*

> *"I ran into a couple of really cool lesbians at a lesbian AA meeting and they talked about, ah, therapy and how much it helped them so that's why I did that and what I mean about cool lesbians is they had a lot of fun without drinking and they just seemed to be happy and somehow I saw differently."*

This participant wanted a different future that did not revolve around alcohol. Her peers managed to put measures in place to achieve a life free from alcohol. For her as she attended AA, this future gradually came within reach with peer support as she progressed through recovery. For her a future without alcohol became viable (Rowan and Butler 2014), where they established relationships with other sexual minority women outside the context of alcohol (Pachankis et al 2020). Additionally, for those wanting a life without alcohol or a non-drinking lifestyle where the future looked different (Wagner and Baldwin 2020), the need for social spaces and places that are free from alcohol or social activities that did not include or revolve around alcohol are paramount.

From: Pawlowska 2021 (Brighton Switchboard)

> *"There is an identified need for non-alcoholic LGBTQ space such as cafes, accessible spaces and family space."*

> *"Spaces that are accessible and appropriate for LGBTQ disabled people for socialising. Wholesome daytime activities that don't involve alcohol and loud noise. I've developed a long-term health condition this year and I'm struggling to see a place for myself in the LGBTQ community now that bars and clubs are too overwhelming and I know a lot of people who feel the same – whether they be neurodivergent, chronically ill or in other ways disabled."*

SECTION SIX: Discussion and recommendations

This systematic scoping review investigated the prevalence of hazardous or harmful drinking among gender and sexual minority communities in the UK, how alcohol use may change through the life course, and interventions used to address the alcohol-related support needs of gender and sexual minority communities. This section provides a summary of the results, strengths and weaknesses of the systematic scoping review, implications for service delivery and research, and overall conclusions.

6.1 Summary of findings

In the prevalence section, 13 publications and 17 grey literature reports (29 studies in total) from the UK and produced between 2010 and 2021 were included. As alcohol misuse was reported in a wide variety of ways, no meta-analyses could be conducted to give an overall estimate of the higher use of alcohol in minority sexual and gender identity populations. Using a vote-counting approach in the 19 studies in sexual orientation or LGBT+ populations compared to heterosexual populations, all had higher rates of alcohol use in sexual minority and LGBT+ populations. In the one study looking at drinking in asexual people (Bauer et al 2020) found that they drank less than allosexual people. Of the five included studies looking at trans and non-binary populations and their drinking, none had cisgender comparisons but the rates of alcohol misuse in these studies was apparently high when compared to average rates of drinking in the UK population (Zambon 2021). There was no information available on UK intersex people.

Evidence from younger and older age groups suggests higher rates of drinking alcohol across the range of age groups. There is very little information regarding intersectional protected characteristics and alcohol use. Evidence from before 2008 suggests that high rates of alcohol misuse have been prevalent in the LGB communities for many years and results suggested that the worst drinking was in women and in the younger age groups, but there is no early evidence on alcohol use in the trans, intersex or asexual communities in the UK.

During the COVID-19 pandemic several UK LGBT+ charities enquired about alcohol use but there were no published studies on alcohol use in LGBT+ communities during this time. The relatively low quality data suggest more problems with alcohol misuse during the pandemic than beforehand.

There are a number of known risk factors or antecedents of alcohol misuse and dependence including binge drinking, having at least one parent with alcoholism, having a mental health problem including anxiety, depression and bipolar disorder, low self-esteem, stress; coming from a culture where alcohol abuse is comparatively common, and lack of family support. In the LGBT+ community, there are higher rates of many of these factors compared to in the heterosexual/cisgender majority. High alcohol intake can result in a number of physical and mental short- and longer-term problems and there is some evidence that these are worse in LGBT+ people compared to heterosexual/cisgender people.

In the interventions section, 24 publications and 5 grey literature reports were included (28 studies in total) from 2000 to 2022. There was some evidence on the effectiveness of various types of counselling specifically for alcohol misuse in sexual minority women and men, such as behavioural couple therapy and CBT combined with motivational interviewing. Several of these interventions showed some success. The studies reviewed provided preliminary support for the use of motivational interviewing (MI) or motivational enhancement-based

interventions and hybrid motivational interviewing with CBT treatments or components such as behavioural control training. The behavioural couple-based therapy intervention provided evidence of long-term effectiveness for gay men and lesbian women to reduce heavy drinking days for a period of a year following the intervention. Moderation-based alcohol treatment for sexual minority men showed those who committed to at least one day of abstinence per week, were more likely to achieve moderation, compared to those who did not commit to reducing their drinking days. Motivational interviewing and other 'goal choice' interventions may be effective in reducing alcohol use for a couple of months post treatment, but motivational interviewing combined with CBT showed more promising results for MSM. Interventions showing an awareness how, for some LGBT+ people, alcohol may be key to their socialisation, as well as interventions designed with involvement of LGBT+ people themselves as either practitioners or as peers, were perceived as more effective.

Whereas research was available on LGBT+ people in the UK attending AA groups, there was no evidence on their effectiveness in reducing alcohol intake. There were several qualitative studies about LGBT+ people's experiences of attending these services which showed some difficulties, with people anticipating homophobia, biphobia and transphobia or actual experiences of these in meetings. Also, presumptions were that alcohol or mental difficulties stemmed from sexual orientation or gender identity, with LGBT+ people finding the religious overtones of the AA challenging and feeling intimidated by mainstream services. Some people found AA useful, particularly if it was an LGBT+ specific AA meeting.

Half of the England and Wales population do not regard themselves as belonging to a particular religion (Anon 2011), rising to 64% of those aged 18–24, and 28% of those aged 65 and above. Within the LGBT+ community, there is a higher proportion who have no religion compared to the general population. For example in the Youth Chances (2014) report, 51% of LGBQ and 53% of trans people had no religion compared to 49% of heterosexuals. In Woods 2011 (Mapping LGBT lives in Birmingham), 66.3% were not practicing any formal religion. So where an alcohol intervention is based on religious ideas, fewer LGBT+ people may engage.

There were several studies on the effectiveness of interventions for general wellbeing that have been evaluated in LGBT+ people and have measured alcohol use. Some of these were novel, such as a game-based intervention for young people (Egan et al, 2021), and some were more well-known interventions such as mindfulness and motivational enhancement. Some of these interventions were successful in reducing alcohol consumption, particularly gay-straight alliances and ant-homophobia policies in schools. The web-based gaming intervention with LGBT young people (Egan et al, 2021) also showed promising results, with improved health-related behaviour, including a reduction in the frequency of binge drinking. A number of the interventions showed only a marginal reduction in alcohol use such as mindfulness.

Protective factors and promising practices that have been evaluated in LGBT+ people where alcohol use outcomes have been measured, included social support, resilience and maintaining dignity, questioning social norms, having a supportive religious climate, and imagining a future without alcohol. These factors were found to be relatively successful in that they acted as defences in reducing the influence of alcohol over the lives of LGBT+ people. These research findings contribute to a growing body of literature underlining the importance of community context and social support for sexual and gender minority people. For example, in university or college settings where alcohol use was perceived as the norm

among young people, no significant differences in alcohol use were identified between heterosexual and LGB (Travers et al 2020) or LGBTQ (Watson et al 2020) students. The alcohol-related findings were unexpected, although longitudinal research by Hatzenbuehler et al (2008) suggested that detection of significant differences in alcohol consumption between LGB and heterosexual students may be less likely during university years where alcohol use was perceived as the norm.

However, in campus settings where LG students experienced minority stress due to micro aggressions, and where terms were used such "no homo" there was significantly greater likelihood of hazardous alcohol use (Winberg et al 2019). Travers et al (2020) confirmed the importance of family and social support for LGB young people. Where this is lacking or in settings where young people experience minority stress, the availability of LGBTQ community organisations, events and programmes may serve as a protective factor against problematic alcohol use for LGBTQ youth (Watson et al 2020). For example, gay-straight alliances and advocating for Pride Parades and LGBTQ-related events in local communities may create places where young people can gain support and where they experience a sense of belonging. An overall safe and supportive social environment may be associated with more positive outcomes for LGBTQ young people.

Advocating for LGBTQ-specific community organisations, events, and places of worship can offer new avenues for improved health among these young people (Watson et al 2020; Winberg et al 2019). The religious climate surrounding LGB young people may serve as a determinant of their health risk behaviour, including alcohol abuse. Findings suggest that LGB young people who live in unsupportive religious climates can potentially be protected by psychosocial services aimed at facilitating an effective integration of sexual orientation and religious beliefs, or by affirmative school climates that include gay-straight alliances.

6.2 Strengths and weaknesses of this systematic scoping review

A major strength of this systematic scoping review is the comprehensiveness of the search strategies designed to ensure all relevant evidence could be retrieved on alcohol use in sexual and gender minorities. We have included grey literature as well as fully published research for several reasons. Firstly, government reports on prevalence from population samples are rarely published and are usually available as grey literature reports from the Office for National Statistics or other official bodies. Secondly, it tends to be harder to publish sexual orientation and gender identity research, so many university projects may not make it into the published literature. There is very little funding for LGBT+ research so many of these projects are unfunded so researchers may not have access to open-access publishing fees, for example. Much of the research in this area is conducted by the LGBT charities in the UK, and these research reports give considerable insights into the experiences of LGBT+ people when they try to access mainstream alcohol services. However, one limitation is that some of these reports were only available on the internet for a limited amount of time, so if they were not downloaded at the time, they were no longer available for inclusion in a systematic scoping review such as this. Finding these reports with any consistency and reproducibility proved challenging. An advantage of this systematic scoping review is that one of us (Meads) keeps a private library of research reports from LGBT+ charities and this was searched, as part of this project, for relevant reports that are no longer available electronically.

Another major strength in this project is the inclusive nature of the gender identity and sexual orientation labels we have used when presenting results. Most of the studies reported gender identity and sexual orientation identity in a variety of ways, such as LGB, LGBT, LGBT+,

lesbian and bisexual women plus gay and bisexual men, lesbian and gay vs bisexual men and women, trans men and women, etc. We also looked extensively for research on intersex and asexual people.

Ideal prevalence evidence for harmful drinking in gender and sexual minority communities would be from an adult national sample selected randomly that measured sexual orientation and gender identity, and presented results for gay men, lesbian women, bisexual men and women, and other minority sexual orientations as distinct groups compared to the heterosexual majority, and also presented results for trans men, trans women, non-binary people and other gender identities compared to the cisgender majority. There would be also some calculations presented as to whether any difference in prevalence is statistically significantly different between the various groups. This evidence does not yet exist. Therefore we have summarised evidence that does exist, in the full knowledge that the quality of it may be less than ideal, and the estimates of prevalence, for example, may not be completely accurate. However, a considerable strength is the number of alcohol misuse estimates that have been presented.

A range of different ways of measuring alcohol misuse is currently used in research. Also a range of different sexual orientation and gender identity descriptors. Because of this we were unable to conduct any meta-analyses of prevalence, so were unable to generate any overall prevalence estimates. Similarly the interventions were so diverse that it did not seem sensible to meta-analyse their results.

However, we acknowledge a number of limitations of this review. We were not able to access grey literature reports from other countries that might have added useful information on interventions. The use of a private library means that the full search results are not replicable by other researchers. We have not formally quality assessed any of the prevalence studies using a critical appraisal tool, and have used the study design only. We chose to do this because we decided that using a checklist such as the Newcastle-Ottawa Scale adapted for cross-sectional surveys (Herzog et al, 2013) would not give any additional information. For example, almost all included studies gave no description of sampling strategy, no justification of sample size, no description of response rate, and no justification of alcohol measurement used. These factors, if present, were made clear in the text. The quality assessment of the interventions studies also did not give sufficient information to critique the likelihood of success of the interventions in LGBT+ populations in the UK.

6.3 Implications and recommendations for practice

It would be unwise to assume that the current delivery of alcohol services in the UK are sufficient and appropriate to the needs of LGBT+ people. Evidence presented in this systematic scoping review has demonstrated that many UK LGBT+ people may be reluctant to attend AA services, if they do attend they may have difficulties engaging in the services, and they may encounter homophobia, biphobia or transphobia from staff or other service users. Programmes that are not LGBT+ specific should make every effort to foster an environment and treatment experience of affirmation and inclusivity (Williams and Fish 2018; Glyn and van den Berg 2017). Service providers should adopt more inclusive language, and seek opportunities for professional development and training on harmful drinking specifically in sexual and gender minority communities (Pennay et al 2018). Even government policies around safe drinking limits need some attention. For example, the recommended alcohol daily/weekly limits are gendered – 6 for women, 8 for men etc., but what about the limits for trans and non-binary people?

An understanding of the key role of personal and social identity in drinking practices in the LGBT+ community is required by those who provide support, as well as the individual and social factors that may be at work when LGBT+ people drink alcohol to excess. A non-pathologising approach to alcohol use and mental health support is needed where LGBT+ people continue to live in a heteronormative and cisgendered world. Any intervention with LGBT+ people, particularly with trans people should be culturally sensitive around LGBT+ issues in order to maintain their resilience and dignity as well as providing support for service users to question engrained social norms around alcohol use amongst LGBT+ communities. Interventions should support LGBT+ people to develop strategies to be assertive in order to challenge those alcohol related norms (Pachankis et al 2020), as these are commonly found around alcohol use among UK LGBT+ people (Emslie et al 2017). Pride events frequently struggle for financial sponsorship so when an alcohol manufacturer offers sponsorship the organisers may find it hard to refuse. However, the targeting of alcohol advertising on minority groups can put those struggling with alcohol misuse issues in a difficult position where the positive nature of Pride in the LGBT+ community can also seem like a negative alcohol binge (Spivey et al 2018).

Some may desire a different future that includes alcohol, and some may desire a future without alcohol, with accessible social spaces and places that are free from alcohol, and social activities that occur without alcohol (Pachankis et al 2020; Rowan and Butler 2014; Wagner and Baldwin 2020). Whether people choose to drink within moderation or abstain from alcohol entirely, services should be available to support them. As mainstream services work to become more inclusive of the needs for LGBT+ communities, distinct interventions will need to be developed to address specific alcohol-related needs of LGBT+ people. Service providers require an understanding of the marginalisation that older LG people may have experienced earlier in life as part of any culturally sensitive intervention (Rowan and Butler 2014; Nodin et al 2015). Knowledge of LGBT lives and the underlying societal or structural factors that may have increased reliance on substances is required by service providers to create safe and supportive interventions that are sensitive to LGBT+ people particularly for older adults (Bobbe 2002; Keogh et al 2009; Rowan and Butler 2014). From the prevalence section it can be seen that the higher prevalence of alcohol misuse could possibly lead to a higher prevalence of alcohol-related illness, but the evidence on hospital admissions on LGB or TNB vs heterosexual/cisgender people is not available.

This systematic scoping review has demonstrated that wider wellbeing policies can be effective in reducing alcohol misuse. These protective practices have the potential to reduce homophobia as an important public health priority (Hatzenbuehler et al 2012). Thus service providers may need to lobby for more widespread policies around the provision of a more supportive environment. In young people family support is very important.

Service providers should support LGBT+ community organisations, events and programmes in local communities that may act as a protective factor against problematic alcohol use for LGBTQ young people (Watson et al 2020; Winberg et al 2019) should their family environment be less than supportive. Service providers should also publish their stance on gay-straight alliances and promote anti-bullying policies to prevent bullying based on sexual orientation and gender identity.

6.4 Recommendations for research

This systematic scoping review has identified a number of gaps in UK-relevant research to understand prevalence of alcohol misuse, and the scope of specific programmes to reduce harmful drinking in LGBT+ people. Some of the research recommendations are more generic and some are specific to LGBT+ people.

Regarding general research into alcohol misuse, ways of measuring needs to be standardised across research and generally agreed by alcohol researchers, charities and any other interested parties. The agreed methods should be clearly described and available to anyone wishing to conduct alcohol research.

Regarding prevalence, although there are UK-based cohort studies of alcohol use over time, none in the UK have measured sexual orientation and/or gender identity. The ONS validated a measure of sexual orientation in 2008, and the 2021 Census measured sexual orientation and gender identity, so these tools are readily available to researchers. We recommend that UK-based cohort studies of alcohol use incorporate these measures into their data collection. It is also essential that they report the results by sexual orientation *and* by gender identity.

Regarding standard interventions, research is needed to measure their effectiveness in sexual and gender minorities. It would be extremely useful to know whether mainstream AA and the 12-step programme is effective in UK LGBT+ populations, and whether LGBT+ people would be willing to participate. This could be ascertained using RCTs or other suitable experimental studies. If UK LGBT+ people attend in limited numbers, it would be useful to know why, for example if the religious undertones are proving to be problematic for some, and what factors could be tailored into LGBT+ specific AA and 12-step programmes that would make them more acceptable and effective. Although research is available on the epidemiology of specific populations, little research is available that directly examines experiences of recovery amongst LGBT+ people (Wagner and Baldwin 2020).

With mainstream generic counselling interventions, the limited evidence available (Rimes et al 2018) suggests that UK lesbians and bisexual women in particular fare worse than heterosexual women, but that there are few differences in effectiveness between gay, bisexual and heterosexual men. Counselling research in LGB people presented in this systematic scoping review was principally conducted in USA and showed some promise in reducing harmful alcohol behaviours. Further research with UK participants is needed to see whether any of these types of counselling methods would be effective here. Research to reduce harmful drinking in LGBT+ people should be co-produced and delivered with LGBT+ peers and should promote positive identification with these communities. In particular, well-designed and theoretically informed culturally sensitive research focused on rigorously tested interventions for substance use amongst trans people is scarce (Glynn et al 2017).

Regarding the more innovative general wellbeing interventions, some of these that were evaluated in USA could be similarly evaluated in the UK, for their effectiveness in reducing harmful alcohol use in LGBT+ populations. These include game-based interventions, gay-straight alliances, public health education and support, and improving social networks. This research should include LGBT+ community participation, and participatory or co-production intervention design methods.

6.5 Conclusions

This systematic scoping review found good evidence to show that prevalence of hazardous/harmful drinking amongst gender and sexual minority communities in the UK is

higher than heterosexual/cisgender people across all ages and over a number of years, and that the COVID-19 pandemic probably made the situation worse (although there is much less evidence on this). High alcohol intake can result in a number of physical and mental short- and longer-term problems and there is some evidence that these are more pronounced in LGBT+ people. There is some evidence that mainstream counselling interventions may be effective in reducing harmful alcohol behaviours, but very little of this research is in trans people. LGBT+ people may experience difficulties with accessing AA and the 12-step programme, and research is needed to assess the suitability of these interventions for UK LGBT+ people with alcohol misuse problems. Service providers should make every effort to foster an environment and treatment experience of affirmation and inclusivity, by consulting with their local LGBT+ populations and by learning about LGBT+ people's lives, with greater awareness of the underlying societal or structural factors that may have increased reliance on alcohol. UK-based cohort studies of alcohol use and RCTs of alcohol misuse interventions should incorporate sexual orientation and by gender identity measures into their data collection and report the results.

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Appendix 1: Relevant systematic reviews on interventions

Two Cochrane library systematic reviews were identified on effectiveness alcohol interventions to reduce harmful alcohol consumption in general populations.

1) Alcoholics Anonymous (AA) and other 12-step programmes for alcohol use disorder (Kelly et al 2020). This review included general populations (n=10,565) and randomised controlled trials (n-27) to evaluate the effectiveness of peer-led AA and twelve-step facilitation (TSF) interventions achieved abstinence, reduced drinking intensity, reduced alcohol-related consequences etc. Findings revealed AA/TSF compared to CBT showed AA/TSF improved rates of continuous abstinence at 12 months risk ratio 1.21, 95% confidence interval (CI) 1.03 to 1.42 with high certainty of evidence. In terms of days abstinent, AA/TSF performed as well as other clinical interventions at 12 months. For alcohol addiction severity one study found evidence of a difference in favour of AA/TSF at 12 months (p=0.05). Thus manualised AA/TSF interventions are more effective compared to other interventions such as CBT for increasing abstinence and AA/TSF probably produces significant healthcare cost savings amongst people with alcohol use disorder.

2) Brief intervention in primary care populations (Kaner 2018). This review included general populations (n=15,197) in general practice settings including randomised controlled trials (n=69). Brief interventions were trailed in multiple countries to reduce harmful alcohol consumption in people attending general practice, emergency care or other primary care settings. Brief intervention was defined as a conversation comprising five or less sessions of brief advice or brief lifestyle counselling, with a total duration of less than 60 minutes. Although short in duration, sessions were designed to be delivered in regular consultations, that often last 5–15 minutes with doctors, and around 20-30 minutes with nurses. These interventions typically include feedback on alcohol use and health-related harms, the identification of high-risk situations for heavy drinking, and simple advice about how to cut down drinking, with a discussion of strategies that can increase motivation to change drinking behaviour. Sessions ended in the development of a personal plan to reduce drinking. Studies included in the review compared brief intervention to minimal or no intervention for participants with a baseline alcohol consumption of 244 g/week (30.5 standard UK units). The primary meta-analysis included 34 studies with general populations (n=15,197) that provided evidence to show participants who received brief intervention consumed less alcohol than minimal or no intervention participants after one year. The follow-up at one year showed that people who received the brief intervention drank less compared to the control group participants. The quality of the evidence was ranked at moderate-quality evidence. The reduction was around a pint of beer (475 ml) or a third of a bottle of wine (250 ml) less each week. Both men and women reduced their alcohol consumption after receiving a brief intervention. The review concluded that extended intervention with a longer counselling duration probably had no greater impact on alcohol consumption, compared to brief intervention (Kaner et al 2018). Thus, brief intervention in regular consultations of 5-15 minutes with a doctor or 20-30 minutes with a nurse, were found to be effective in a small reduction of alcohol consumption per week.

Appendix 2: Methods from protocol

Literature search strategy
The search strategy will define where to search, which terms to use, which sources are to be searched, time span, and language(s). Example sources will include electronic databases, reference lists, hand searching of organisations, and websites. Although breadth and practicalities of the search are important, we propose clear parameters upfront to define viable search parameters, with clear inclusion and exclusion criteria (Arksey and O'Malley 2005). The search will be conducted with the support of a university librarian. Targeted searching will ensure each search is specific with a smaller number of hits but a higher likelihood of relevant papers. However sensitivity of the search (broad search scope with a large number of hits) will be balanced with specificity (narrow targeted search).

There will be two database searches for published literature.

Search 1 (called **the prevalence** search), will look for UK evidence published in peer reviewed journals in English between 2010 – 2021 on:
• Types of problems that exist
• Causes and effects
• Motivation for alcohol use
• Prevalence over time (including during the Covid-19 pandemic)
• Change throughout the life course (including at the intersections of age, ethnicity, gender and sexuality

Inclusion criteria based on the PICOS framework are, 1) population - gender and sexual minority people, 2) intervention – alcohol use, 3) comparator - compared to heterosexual and cisgender peers, 4) outcome - any relevant health and well-being outcome related to the list above, 5) setting - living in any UK setting, 6) design - primary qualitative, quantitative or mixed methods studies. Studies will be excluded where sexual orientation and gender identity is not clearly defined, where there are no meaningful outcomes or where papers are solely theoretical, opinions, editorials or case reports.

Searches will be undertaken in six electronic databases (Medline, Embase, Web of Science, PsycInfo, CINAHL and Cochrane). In addition, Google Scholar will be searched accompanied by hand searching informed by existing knowledge and experience of the team, to find information that may be harder to reach, for example in grey literature reports or on government websites. We plan to limit the search to recent evidence because prevalence changes over time. However, to get a true estimate of prevalence it is important to use random population sampling, recording sexual orientation as well as alcohol use, and none of these types of studies were conducted in the UK until after 2010.

Search terms and appropriate synonyms (MeSH terms) will include gender minorit*, sexual minorit*, LGBT+, LGB, lesbian, gay, bisexual, trans, queer, +, non-binary, alcohol*, harm, hazardous, prevalence, incidence, causes, effects, motivation, age, ethnicity, intersect* etc.

Search 2 (called **the intervention** search), will look for international evidence published in peer reviewed journals between 2000 – 2021 on:

• Interventions or promising practice targeting LGB & TNB alcohol use and support

The effectiveness of interventions is much less likely to change over time, when compared to prevalence estimates.

Search terms and appropriate synonyms (MeSH terms) will include gender minorit*, sexual minorit*, LGBT+, LGB, lesbian, gay, bisexual, trans, queer, non-binary, AND alcohol*, AND treatment, intervention, promising practice etc.

Proposed inclusion criteria are, 1) population - gender and sexual minority people, setting - any international setting, 2) intervention – alcohol related support, 3) any relevant comparator or none 4) outcome - any outcome relevant health and well-being, 5) any relevant study design, such as randomised controlled trials, cohort studies, case-control studies, case series, controlled time series, and can be quantitative, qualitative or mixed methods research and can be published or grey literature. Studies will be excluded where sexual orientation and gender identity is not clearly defined, where there are no meaningful outcomes or where papers are solely theoretical, opinions, or editorials.

The Grey literature search will be in addition to the database searches. They will be much more targeted to UK-based research found in survey or questionnaire results, reports, studies and research undertaken by e.g., non-governmental organisations (NGOs) and government bodies. In addition websites of alcohol or LGBT+ charities and other organisations will be screened for reports e.g., LGBT foundation, Office for National Statistics (ONS, Institute of Alcohol Studies, Regional Healthwatch, Mindout, Alcohol Concern, Alcoholics Anonymous).

The results of these searches may well supplement the published evidence found in Search 1 and Search 2.

3.2 Data extraction, synthesis, and ethics

Citation selection, data extraction and quality assessment

The searches will export citations from databases in .ris files that will be saved to the Endnote reference management software package with the overall process reflected in a PRISMA diagram (Moher 2009). All titles and abstracts will be assessed for inclusion. One reviewer will conduct the literature search, screening and extraction. The screened data will be verified and agreed by a second reviewer.

- For **Prevalence studies** quality will be assessed by study design.
- For **Intervention studies** quality will be assessed by using a CASP (Critical Appraisal Skills Programme) questionnaire, depending on the study design used.

Charting the data

Quality will be recorded, and a data-charting form will be developed to extract data from each study. A 'narrative review' or 'descriptive analytical' method is used to extract contextual or process-oriented information from each study. Themes identified from both data sets will be summarised in Excel format by one reviewer and will be checked by a second team member. Quotes will be extracted from the literature to reflect specific aspects emerging across the data to inform the overall narrative synthesis.

Synthesis

An analytic framework or thematic construction is used to provide an overview of the breadth of the literature. A thematic analysis is then presented as a narrative synthesis. The results will be enhanced by the team's previous research and review experience in this area. In the

final stage, review findings will be used to propose recommendations for evidence-based interventions to inform practice, further research and future policy directives. It is likely that these recommendations will be structured within the three review questions.

Data storage and ethics

All review data generated will be stored at the School of Sport and Health Sciences, University of Brighton securely against unauthorised access using a password protected network and in compliance with data protection legislation. Only the review team will have access to this data. To mitigate against the unlikely loss of data, copies of the digital files are backed up daily to university external (secured) servers. No ethical approval will be required as primary research data will not be collected.

Appendix 3. Quality assessment of intervention studies

The intervention studies were quality assessed using the Critical Appraisal Skills Programme (CASP) checklists appropriate to their study design (CASP 2018).

Table 14. Quality assessment of RCTs

No	Study	1	2a, b	2c	3	4	5	6	7	8	9	10
1	Egan et al (2021)	y	y	n	y	y	y	y	y	y	ct	ct
2	Fals-Stewart et al (2009)	y	y	ct	y	y	y	y	y	y	y	y
3	Morgenstern et al (2007)	y	y	ct	y	y	y	y	y	y	ct	ct
4	Morgenstern et al (2012) and Levak et al (2020)	y	y	ct	cy	y	y	y	y	y	ct	ct
5	Nemoto et al (2013)	y	y	ct	ct	ct	ct	ct	ct	y	ct	ct
6	Pachankis et al (2020)	y	y	ct	y	y	y	y	y	y	ct	ct
7	Velasquez et al (2009)	y	y	y	y	y	y	y	y	y	ct	ct
Abbreviations: Y—yes; CT—cannot tell; N—no; N/A—not applicable.												

Checklist questions were: 1. Did the study address a clearly focused research question? 2a. Was the assignment of participants to interventions randomised? 2b. Was randomisation sufficient to eliminate bias? 2c. Was the allocation sequence concealed from investigators and participants? 3.Were all participants who entered the study accounted for at its conclusion? 4. Were the study groups similar at the start of the RCT? 5. Apart from the experimental intervention, were study groups treated equally? 6. Where the effects of intervention reported comprehensively? 7. Was the precision of the estimate of the intervention effect reported? 8. Do the benefits of the intervention outweigh the harms and costs? 9. Can results be applied to your local population? 10. Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?

Table 15. Quality assessment of cohort studies

No	Study	1	2	3	4	5a	5b	6a	6b	10	11
1	Heck (2011)	y	y	y	y	y	y	n/a	n/a	ct	y
2	Ingraham et al (2016)	y	y	y	y	y	y	y	ct	ct	y
3	Konishi et al (2016)	y	y	n/a	y	n/a	n/a	n/a	ct	y	y
4	Nemoto (2005)	y	ct	ct	ct	ct	ct	y	ct	ct	y
Abbreviations: Y—yes; CT—cannot tell; N—no; N/A—not applicable. (Note that questions on the results (8 and 9) and their accuracy are reported in the text)											

Checklist questions were: 1. Did the study address a clearly focused issue? 2. Was the cohort recruited in an acceptable way? 3. Was the exposure accurately measured to minimise bias? 4. Was the outcome accurately measured to minimise bias? 5a. Have the authors identified all important confounding factors? 5b) Have they taken account of the confounding factors in the design and/or analysis? 6a. Was the follow up of subjects complete enough? 6b. Was the follow up of subjects long enough? 10. Can the results be applied to the local population? 11. Do the results of this study fit with other available evidence?

Appendix 4: Intervention example content

1. **EQuIP (Empowering Queer Identities in Psychotherapy) treatment modules**

(from Pachankis et al, 2020)

Introduction to Minority Stress Framework

Session 1: Introduction to EQuIP

- Introduce client to the concept of minority stress as it relates to coping with symptoms of anxiety and depression
- Instil motivation, highlight resiliency, and set specific goals related to mitigating the impact of minority stress.

Session2: Impact of Minority Stress

- Explore the client's past and current experiences of sexism and minority stress as they relate to mental and behavioural health symptoms.
- Introduce the concepts of tracking ongoing minority stressors to link them to symptoms of anxiety and depression
- Normalise some of the client's experiences by contextualising them within research on minority stress.

Cognitive Restructuring, Emotional Awareness and Emotional Regulation

Session 3: Tracking emotional Experiences

- Introduce main components of emotional experience
- Explore ways in which minority stress may be maintaining maladaptive patterns of emotional responding

Session 4: Mindfulness & Minority Stress

- Introduce in-session behavioural experiments with the goal of identifying emotional responses to minority stress in a mindful, present-focused way.

Session 5: Appraisal & Reappraisal

- Cultivate awareness of the impact of minority stress on client's negative, maladaptive thinking patterns
- Encourage the explicit articulation of cognitions driven by minority stress.

Session 6: Emotion Avoidance

- Identify emotion avoidance strategies and discuss their possible origin in minority stress experiences
- Highlight connection between emotion avoidance strategies and maintenance of negative emotions.

Building Behavioural Skills to Mitigate Effects of Minority Stress

Session 7: Emotion-Driven Behaviours

- Identify behavioural outcomes of minority stress (e.g. avoidance)
- Work to change current patterns of emotional responding with the goal of fostering healthy behaviour

Session 8: Behavioural Skills Training

- Impart the cognitive and behavioural skills necessary for managing minority stress and reducing emotion-driven behaviours
- Participate in assertiveness training to develop effective communication skills.

Session 9: Behavioural Experiments

- Increase tolerance of emotions by confronting both internal and external emotional triggers

- Teach skills to gradually challenge and change thoughts and behaviours associated with minority stress situations

Session 10: Relapse Prevention

- General review of treatment concepts and discussion of clients' progress
- Identify ways to maintain treatment gains and anticipate future experiences with minority stress
- Brief self-affirmation exercise.

2. Curriculum for Transgender Resources and Neighbourhood Space (TRANS) Project

(from Nemoto et al, 2005)

Domain - Sex, relationships, and health
Specific Topics Addressed AIDS knowledge and AIDS-related health services

- Relationships with private partners Commercial sex
- Drug use and sex
- Protection from violence
- Culture, gender identity, and sex

Domain - Reducing drug use and improving coping skills
Specific Topics Addressed

- Drug abuse assessment
- Information about drug treatment programs Positive forms of self-expression Self-presentation skills
- Enhancing self-esteem
- Handling daily life skills

Domain - General life needs
Specific Topics Addressed

- Relaxation and meditation
- Acculturation
- Hormones, gender-related medical procedures Community networking and empowerment
- Job searching, going to work
- Basic legal issues related to gender identity