

Are reviews of alcohol control interventions targeting affordability, availability and marketing sex- and gender-responsive? A scoping review protocol

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Abstract

Introduction: Sex and gender are important determinants of alcohol consumption and its impact on health. Therefore, there is a need to understand if and how alcohol control interventions work differently for people of different sexes and genders. **Objective:** To assess the extent to which research on alcohol control interventions targeting affordability, availability and marketing is sex- and gender-responsive. **Inclusion criteria:** With no restriction on the population, study context, intervention outcome and publication year, review-type articles exploring alcohol control interventions targeting affordability, availability and marketing will be included. Only peer-reviewed papers published in the English language will be considered. Review articles with no intervention outcome, primary research articles and non-peer-reviewed publications will be excluded. **Methods:** At the time of publication, the review is at the data extraction stage. A systematic search strategy using Ovid MEDLINE, Web of Science, Scopus and Web of Science was conducted. This was supplemented by forward and backward citation chasing and Google Scholar searches. All retrieved records were uploaded to Covidence, deduplicated and screened for relevance. Title and abstract screening was conducted using a dual screening approach. Full-text screening was undertaken by one researcher, with 40% of the records double-screened. Data extraction is being conducted pro forma using a piloted instrument adapted from the Sex and Gender Appraisal Tool-Systematic Reviews-2 tool. It is anticipated that 10% of the records will be independently checked by another researcher. Data analysis will take the form of narrative interpretation, supported by appropriate descriptive statistics and visualisation tools such as tables and graphs.

Introduction

Alcohol poses significant global public health challenges. In 2019, alcohol consumption is the 9th leading risk factor for the global burden of disease (Murray et al., 2020). It is associated with more than 200 causes of morbidity and mortality (Rehm et al., 2017), 3 million deaths (5.3% of all deaths) and 131.4 million disability-adjusted life years (DALYs) (5.0% of all DALYs) (Shield et al., 2020). Examples of alcohol-related harms include injuries, self-harm and interpersonal violence, substance use disorders, cancers and other non-communicable diseases affecting the cardiovascular, digestive, respiratory and neurological systems (Murray et al., 2020).

As important determinants of health, sex and gender are associated with differences in alcohol consumption and risk exposure. While sex refers to different biological characteristics – such as chromosomes, hormones and reproductive anatomy – of females, males and intersex people, gender refers to the “socially constructed roles, behaviours, expressions and identities of girls, women, boys, men, and gender diverse people[, which] influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society” (CIHR, 2020). Notably, sex and gender are often conflated in health research (Heidari et al., 2016). Historically, males/men drink more than females/women and the former are more likely to die from alcohol-attributable deaths, particularly due to injuries (Babor et al., 2022; Bryazka et al., 2022; Murray et al., 2020). Due to shifting gender norms and targeted marketing (Hill and Friel, 2020), more women now consume alcohol and experience alcohol-related harm (Grant et al., 2017; Grucza et al., 2018; WHO, 2018). The types of harms men and women experience can also differ, e.g. more men die from alcohol-related traffic deaths (Babor et al., 2022). Biologically, alcohol can also affect different sexes differently due to factors like alcohol pharmacokinetics, (sex) hormone levels and neurobiological pathways (Erol and Karpyak, 2015; Flores-Bonilla and Richardson, 2020). For instance, females are more likely to experience alcohol-related physiological harms as they tend to have a lower alcohol dehydrogenase level and water-to-fat ratio, resulting in a higher blood alcohol concentration that persists for longer (Erol and Karpyak, 2015; Zakhari, 2006).

Thus, it is crucial to assess if and how alcohol control interventions work differently for different sexes and genders to address – and prevent the perpetuation of – gender inequalities. Alcohol control interventions “serve the interests of public health and social well-being through their impact on determinants of problems from alcohol” (Babor et al., 2022, p. 6). Among a heterogeneous mix of public health strategies to control alcohol use (Martineau et al., 2013), there are three important clusters of interventions that target the affordability (pricing and taxing strategies), availability and marketing of alcohol; (see Table 1 in Methods). These interventions, by targeting different facets of alcohol use, aspire to reduce alcohol-related harm differently: 1) reducing affordability: to increase the costs of alcohol to decrease demand and raise avenues for societal costs compensation; 2) reducing availability: to

decrease the convenience of accessing alcohol to reduce usage; and 3) restricting marketing: to reduce exposure to disrupt the normalisation and promotion of drinking (Babor et al., 2022). Generally, analyses do not report or disaggregate outcomes by gender and/or sex in the health research literature (Heidari et al., 2016) but some evidence does exist for the differential effects of alcohol control interventions, e.g. increased alcohol prices may be more effective in decreasing female drinking (Jackson et al., 2010).

A scoping review was deemed appropriate to assess if and how sex and gender – as two interlinked yet distinct concepts – are considered in the literature on alcohol control interventions. This is due to its indication for 1) mapping the extent of literature; 2) understanding how research is undertaken on a topic; 3) revealing research gaps; and 4) providing recommendations on future research directions (Peters et al., 2020). Due to the extensive body of research on alcohol control interventions, review-type articles, rather than primary research studies, can be scoped to ensure feasibility. There are numerous systematic and umbrella reviews would qualify for such a review (for instance, see Martineau et al. (2013), Siegfried and Parry (2019), Bryden et al. (2012), Siegfried et al. (2014) and Wagenaar, Tobler and Komro (2010)).

To the best of the authors' knowledge, this will be the first review that seeks to comprehensively assess the ways in which sex and gender are defined, articulated and analysed in reviews of alcohol control interventions. However, two studies similar to this proposed work are acknowledged: 1) An umbrella review by Fitzgerald et al. (2016) explored if and how sex and gender analyses were considered in systematic reviews of alcohol control interventions, and the extent to which the effectiveness of these interventions differ by sex and gender; and 2) An ongoing systematic review by Cook et al. (2022) that aims to explore how men and women (as well as gender diverse populations) are studied in alcohol research.

This proposed work differs from these two reviews in several aspects. A comprehensive analysis of sex and gender as two distinct concepts across all sections of review articles – from abstract to conclusions – based on other similar analyses (e.g. Antequeral et al., 2022; Doull et al., 2010; López-Alcalde et al., 2019) will be conducted. This differs from Fitzgerald et al. (2016) and Cook et al. (2022) whose assessment primarily concerns gender in the methodological design of alcohol research studies. This work also seeks to explore if and how analyses of sex and gender intersect with other social positions, e.g. race, ethnicity and socio-economic status. Compared to Fitzgerald et al. (2016), a narrower scope of interventions under examination as well as the methodological limitations of a scoping review for a rigorous appraisal of intervention outcomes in the current proposed study are noted. Nevertheless, this review will capture a broader scope of review-type articles (beyond just systematic reviews) and more recent articles that may have been published since the work of Fitzgerald et al. (2016).

Objective and Research Questions

This scoping review protocol is developed based on the Joanna Briggs Institute (JBI) methodology for scoping reviews (Peters et al., 2020) and Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping reviews (PRISMA-ScR) checklist (Tricco et al., 2018). The objective of this study is to explore the extent to which the research literature on alcohol control interventions targeting affordability, availability and marketing is sex- and gender-responsive. To achieve the objective, the following two review questions will be addressed:

1. How are sex and gender reported in reviews on alcohol control interventions targeting affordability, availability and marketing interventions?
2. What are the reported outcome differences by sex and/or gender, if any, in reviews on alcohol control interventions targeting affordability, availability and marketing interventions?

Keywords

Alcohol; sex; gender; advertising; accessibility; pricing; tax

Eligibility Criteria

Using the Population-Concept-Context (PCC) framework (Peters et al., 2020), the eligibility criteria are designed to reflect the objective of the scoping review.

Population

Due to the main interest of the scoping review being the intervention characteristics (see Concept below), no restriction on participant characteristics will be applied.

Of note, the mention of the sex and gender of participants in reviews, or the lack thereof, will not constitute an eligibility criterion. This is because the goal of the scoping review is to explore the extent to which reviews studying alcohol control interventions consider and report sex and gender.

Concept

The overarching concept of the scoping review is the consideration of sex and gender in alcohol control interventions targeting affordability, availability and/or marketing.

The scope of eligible interventions is guided by a framework shown in Table 1 (adapted from Babor et al., 2022). Although there is no restriction on intervention outcomes, a review should at least assess an outcome to be deemed eligible. As with the participant eligibility criteria, the lack of mention of sex and gender will not be an exclusion criterion given the goal of this work to assess the extent to which these dimensions are explored and reported.

Table 1. Alcohol control interventions targeting affordability, availability and marketing (adapted from Babor et al., 2022).

Alcohol control target	Intervention examples
Affordability	Alcohol taxes
	Minimum price policies
	Bans on price discounts and promotions
	Differential price per unit of alcohol by beverage
	Special or additional taxation on youth-oriented beverages
Availability ¹	Total bans (prohibition)
	Restricting days of sale
	Restricting hours of sale for bars, pubs etc.
	Restricting hours of sale for off-premises outlets
	Policies affecting alcohol outlet density
	Minimum alcohol purchasing age laws
	Sales restrictions in particular settings (e.g. sports stadium)
Marketing	Complete ban on alcohol marketing
	Partial ban on alcohol marketing
	Co-regulation and voluntary self-regulation codes

Context

No restriction on study context will be applied. Given the focus of the scoping review is on review-type articles, the contextual boundaries of the reviews, *e.g.* geographical coverage, will be reported where appropriate.

¹ Interventions targeting availability as conceptualised by Babor et al. (2022) cover a broad range of interventions, including policies on government monopolies, low alcohol content beverages and modifications of alcohol package size. For the purpose of the review, a more focused and narrow conceptualisation is taken; only interventions targeting outlets, duration of sales and drinking age are considered relevant (see Table 1 for examples).

Types of Sources

Due to the volume of publications on alcohol control interventions, this scoping review will only include peer-reviewed review-type articles published in academic journals. The types of review articles that will be eligible for inclusion include systematic, scoping, rapid, realist, umbrella and mapping reviews (Grant and Booth, 2009). Based on a relevant umbrella review of alcohol control policies (Martineau et al., 2013), review-type articles will be considered 'systematic reviews' if they meet the following three criteria: 1) reporting a comprehensive search strategy; 2) outlining inclusion and exclusion criteria; and 3) identifying all included studies. Of note, narrative and systematised reviews will be excluded. The review will also only focus on studies published in the English language.

Primary research articles will be excluded. All non-peer-reviewed publications, pre-prints, books, editorials, opinion papers and grey literature will also be excluded.

Methods

The conduct of the scoping review will be guided by the JBI methodology for scoping reviews (Peters et al., 2020). The data extraction, analysis and presentation phases, in particular, will also be guided by the more recent JBI recommendations (Pollock et al., 2022).

Of note, the review was initiated prior to the protocol publication due to the limited time the team has to complete the review. Nevertheless, the review has been undertaken in a rigorous manner in accordance with the JBI scoping review guidance (Peters et al., 2020) and PRISMA-ScR checklist (Tricco et al., 2018). At the time of publication, data extraction is underway.

Search Strategy

The design of the search strategy is guided by the JBI three-step search strategy (Peters et al., 2020).

Firstly, an initial limited search was carried out. Using a combination of keywords and synonyms, a search strategy based on the eligibility criteria was developed and adapted for four electronic bibliographic databases of interest, i.e. Ovid MEDLINE, Web of Science, Scopus and Cochrane Library. The search strategy was then iteratively tested and refined. Of note, advice was sought from a subject librarian with expertise in systematic searching to support the design of the search strategy.

Next, a comprehensive search using the developed search strategy (Appendix A) was undertaken across the four electronic bibliographic databases. This was completed on 27th Jan 2023.

Finally, the search was supplemented by forward and backward citation chaining using the retrieved records as well as searching in Google Scholar.

Study Selection

All retrieved records from the search strategy were uploaded to Covidence for duplicate removal. Next, the studies underwent title and abstract screening using an independent dual screening approach, where potentially eligible studies were qualified for subsequent full-text screening. Of note, a pilot with twenty-five records had been conducted beforehand to ensure screening validity. For full-text screening, a single screening approach with 40% of the records independently screened by another researcher was taken. Reasons for exclusion were recorded. For both stages, all screening discrepancies between two independent researchers were resolved by AKo.

The screening and inclusion process will be described narratively and illustrated using a PRISMA-ScR flow diagram (Tricco et al., 2018).

Data Extraction

The data will be extracted pro forma using Microsoft Excel. A data extraction instrument (Appendix B) – adapted from the Sex and Gender Appraisal Tool-Systematic Reviews-2 (SGAT-SR2) developed by Antequera et al. (2022) – will be used to capture information to answer the questions posed by the review.

The form has been trialled and further adapted by two researchers using three records. The form will also be revised as necessary during the data extraction process.

Data extraction will be completed by a single researcher, with at least 10% of the records independently extracted by a different researcher. Any discrepancies will be resolved by discussion, and a third researcher sought for arbitration if necessary.

Of note, critical appraisal of the records will not be performed. Critical appraisal is generally not required in the scoping review process (Peters et al., 2020). Although critical appraisal would be beneficial in the assessment of validity, risk of bias and validity of the study methods and results, it does not correspond to the research questions of this scoping review.

Data Analysis and Presentation

The analysis will be narratively presented and interpreted in response to the review questions (Pollock et al., 2022). This will be appropriately supported by basic descriptive statistical analyses and data visualisation tools such as tables, graphs and figures.

Reporting

The reporting of the scoping review will follow the PRISMA-ScR checklist (Tricco et al., 2018).

Dissemination

The scoping review itself will be published in a peer-reviewed academic journal for dissemination. It is anticipated that the output of this work will also be reported in the upcoming Lancet Commission Report on Gender and Global Health.

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Author Roles

AKo: Conceptualisation, Methodology, Writing – Original Draft, Writing – Review & Editing and Project Administration. **NK**: Conceptualisation, Methodology and Writing – Review & Editing. **MvS**: Conceptualisation, Methodology and Writing – Review & Editing. **BH**: Conceptualisation, Methodology and Writing – Review & Editing. **MP**: Conceptualisation, Methodology and Writing – Review & Editing. **PWS**: Conceptualisation, Methodology and Writing – Review & Editing. **AKe**: Methodology and Writing – Review & Editing. **CR**: Writing – Review & Editing. **SH**: Conceptualisation, Methodology, Writing – Review & Editing, Supervision and Funding Acquisition. All authors have reviewed and approved the protocol for publication.

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Conflicts of Interest

MP is a member of the SPECTRUM consortium, funded through the UK Prevention Research Partnership. Other authors declare no conflict of interest.

References

Antequera, A., et al. (2022) "Sex and Gender Appraisal Tool-Systematic Reviews-2 and Participation-To-Prevalence Ratio assessed to whom the evidence applies in sepsis reviews", *Journal of Clinical Epidemiology*, 142, pp. 119-132. doi.org/10.1016/j.jclinepi.2021.11.006

Babor, T. F. et al. (2022) *Alcohol: no ordinary commodity: research and public policy*. Oxford: Oxford University Press.

Bryazka, D. et al. (2022) "Population-level risks of alcohol consumption by amount, geography, age, sex, and year: a systematic analysis for the Global Burden of Disease Study 2020", *Lancet*, 400(10347), pp. 185-235. doi:10.1016/S0140-6736(22)00847-9

Bryden, A. et al. (2012) "A systematic review of the influence on alcohol use of community level availability and marketing of alcohol", *Health & Place*, 18(2), pp. 349-357. <https://doi.org/10.1016/j.healthplace.2011.11.003>

CIHR (2020) What is gender? What is sex? Available from <https://cihr-irsc.gc.ca/e/48642.html> (Accessed 14th March 2023).

Cook, M. et al. (2022) Differences in how men and women are studied in alcohol research: a systematic review. PROSPERO 2022 CRD42022359103. Available at: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42022359103 (Accessed 14th March 2023).

Doull, M. et al. (2010) "Appraising the evidence: applying sex- and gender-based analysis (SGBA) to Cochrane systematic reviews on cardiovascular diseases", *Journal of Women's Health*, 19(5), pp. 997-1003. <https://doi.org/10.1089/jwh.2009.1626>

Erol, A., Karpyak, V. M. (2015) "Sex and gender-related differences in alcohol use and its consequences: contemporary knowledge and future research considerations", *Drug and Alcohol Dependence*, 156, pp. 1-13. <https://doi.org/10.1016/j.drugalcdep.2015.08.023>

Fitzgerald, N. et al. (2016) "Gender differences in the impact of population-level alcohol policy interventions: evidence synthesis of systematic reviews", *Addiction*, 111(10), pp. 1735-1747. <https://doi.org/10.1111/add.13452>

Flores-Bonilla, A., Richardson, H. N. (2020) "Sex differences in the neurobiology of alcohol use disorder", *Alcohol Research: Current Reviews*, 40(2), 04. doi.org/10.35946/arcr.v40.2.04

Grant, B. F. et al. (2017) "Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001-2002 to 2012-2013: results from the national epidemiologic survey on alcohol and related conditions", *JAMA Psychiatry*, 74(9), pp. 911-923. <https://doi.org/10.1001/jamapsychiatry.2017.2161>

Grant, M. J., & Booth, A. (2009) "A typology of reviews: an analysis of 14 review types and associated methodologies", *Health Information and Libraries Journal*, 26(2), pp. 91-108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>

Gruza, R. A. et al. (2018) "Trends in adult alcohol use and binge drinking in the early 21st-century United States: a meta-analysis of 6 national survey series", *Alcoholism, Clinical And Experimental Research*, 42(10), pp. 1939-1950. <https://doi.org/10.1111/acer.13859>

Heidari, S., et al. (2016) "Sex and gender equity in research: rationale for the SAGER guidelines and recommended use", *Research Integrity and Peer Review*, 1, 2. doi.org/10.1186/s41073-016-0007-6

Hill, S. E., Friel, S. (2020) "'As long as it comes off as a cigarette ad, not a civil rights message': gender, inequality and the commercial determinants of health", *International Journal of Environmental Research and Public Health*, 17(21), 7902. doi.org/10.3390/ijerph17217902

Jackson, R. et al. (2010) Interventions on control of alcohol price, promotion and availability for prevention of alcohol use disorders in adults and young people. Available from <https://www.healthevidence.org/view-article.aspx?a=interventions-control-alcohol-price-promotion-availability-prevention-alcohol-32755> (Accessed 14th Mar 2023).

López-Alcalde, J. et al. (2019) "Consideration of sex and gender in Cochrane reviews of interventions for preventing healthcare-associated infections: a methodology study", *BMC Health Services Research*, 19(1), 169. <https://doi.org/10.1186/s12913-019-4001-9>

Martineau, F. et al. (2013) "Population-level interventions to reduce alcohol-related harm: an overview of systematic reviews", *Preventive medicine*, 57(4), pp. 278-296. <https://doi.org/10.1016/j.ypmed.2013.06.019>

Murray, C. J. L. et al. (2020) "Global burden of 87 risk factors in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019", *Lancet*, 396(10258), pp. 1223-1249. [https://doi.org/10.1016/S0140-6736\(20\)30752-2](https://doi.org/10.1016/S0140-6736(20)30752-2)

Peters, M. D. J., et al. (2020) 'Chapter 11: Scoping Reviews (2020 version)', in: Aromataris, E., Munn, Z. (ed.) *JBI manual for evidence synthesis*. Available from <https://synthesismanual.jbi.global>. doi.org/10.46658/JBIMES-20-12 (Accessed 5th Jan 2023).

Pollock, D., et al. (2022) “Recommendations for the extraction, analysis, and presentation of results in scoping reviews, *JB I Evidence Synthesis*”, 10.11124/JBIES-22-00123. <https://doi.org/10.11124/JBIES-22-00123>

Rehm, J., et al. (2017) “The relationship between different dimensions of alcohol use and the burden of disease – an update”, *Addiction*, 112(6), pp. 968–1001. <https://doi.org/10.1111/add.13757>

Shield, K. et al. (2020) “National, regional, and global burdens of disease from 2000 to 2016 attributable to alcohol use: a comparative risk assessment study”, *Lancet Public Health*, 5(1), pp. e51–e61. [https://doi.org/10.1016/S2468-2667\(19\)30231-2](https://doi.org/10.1016/S2468-2667(19)30231-2)

Siegfried, N. et al. (2014) “Restricting or banning alcohol advertising to reduce alcohol consumption in adults and adolescents”, *The Cochrane Database of Systematic Reviews*, 2014(11), CD010704. <https://doi.org/10.1002/14651858.CD010704.pub2>

Siegfried, N. and Parry, C. (2019) “Do alcohol control policies work? An umbrella review and quality assessment of systematic reviews of alcohol control interventions (2006 - 2017)”, *PloS one*, 14(4), e0214865. <https://doi.org/10.1371/journal.pone.0214865>

Tricco, A. C., et al. (2018) “PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation”, *Annals of Internal Medicine*, 169(7), pp. 467–473. <https://doi.org/10.7326/M18-0850>

Wagenaar, A. C., Tobler, A. L., and Komro, K. A. (2010) “Effects of alcohol tax and price policies on morbidity and mortality: a systematic review”, *American Journal of Public Health*, 100(11), pp. 2270-2278. <https://doi.org/10.2105/AJPH.2009.186007>

WHO (2018) Global status report on alcohol and health 2018. Available from <https://www.who.int/publications/i/item/9789241565639> (Accessed 14th Mar 2023).

Zakhari S. (2006) “Overview: how is alcohol metabolized by the body?”, *Alcohol Research & Health*, 29(4), pp. 245–254.

Appendix

[Appendix A: Search Strategy](#)

Ovid MEDLINE

Database:

Ovid MEDLINE(R) ALL <1946 to January 26, 2023>

#	Query	Results from 27 Jan 2023
1	(alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*).ti,ab,kf,kw.	631,518
2	(media or social media or TV or television or radio or advert* or market* or promot* or film or films or movie* or lyrics or event sponsorship).ti,ab,kf,kw.	2,011,988
3	(availab* or access* or density or densities or proximity or opening times or times of opening or opening days or days of opening or opening hours or hours of opening or trading hours or hours of trading or trading days or days of trading or sale hours or hours of sales or sale days or days of sales).ti,ab,kf,kw.	2,807,364
4	(tax or taxes or taxation or cost* or price* or pricing).ti,ab,kf,kw.	802,839
5	(intervention* or law or laws or legislation* or constitution* or act or acts or statute* or decree* or by-law* or bylaw* or regulat* or directive* or rule or rules or mandate* or bill or bills or policy or policies or strategy or strategies or action plan or action plans or guideline* or guidance* or standard or standards or program or programs or programme or programmes or trial or trials or implement*).ti,ab,kf,kw.	8,248,502
6	(review* or synthes* or meta-analysis or meta-analyses or metaanalysis or metaanalyses or meta-synthesis or meta-syntheses or metasynthesis or metasyntheses or meta-stud* or metastud* or scoping stud* or evidence assessment* or evidence map* or systematic map* or systematic literature map* or evidence gap map* or systematic narrative or systematic assessment* or meta-evidence or metaevidence or pool* analysis or pool* analyses).ti,ab,kf,kw.	3,883,671

7	((alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*) adj5 (media or social media or TV or television or radio or advert* or market* or promot* or film or films or movie* or lyrics or event sponsorship or (availab* or access* or density or densities or proximity or opening times or times of opening or opening days or days of opening or opening hours or hours of opening or trading hours or hours of trading or trading days or days of trading or sale hours or hours of sales or sale days or days of sales) or (tax or taxes or taxation or cost* or price* or pricing))).ti,ab,kf,kw.	21,260
8	((alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*) adj8 (intervention* or law or laws or legislation* or constitution* or act or acts or statute* or decree* or by-law* or bylaw* or regulat* or directive* or rule or rules or mandate* or bill or bills or policy or policies or strategy or strategies or action plan or action plans or guideline* or guidance* or standard or standards or program or programs or programme or programmes or trial or trials or implement*)).ti,ab,kf,kw.	45,005
9	7 and 8 and 6	720
10	exp alcohol drinking/ or exp alcoholic beverages/	95,306
11	exp marketing/ or exp communications media/ or exp music/	428,560
12	exp taxes/ or exp "costs and cost analysis"/	272,224
13	exp legislation as topic/ or exp government regulation/ or exp policy/ or exp epidemiologic study characteristics/ or exp health planning/ or exp program evaluation/ or exp guidelines as topic/	4,335,945
14	exp review literature as topic/ or exp meta-analysis as topic/	42,656
15	10 and (11 or 12) and 13 and 14	18
16	9 or 15	736
17	limit 16 to english language	715

Embase

Database:

Embase Classic+Embase <1947 to 2023 January 26>

#	Query	Results from 27 Jan 2023
1	(alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*).ti,ab,kf,kw.	882,365
2	(media or social media or TV or television or radio or advert* or market* or promot* or film or films or movie* or lyrics or event sponsorship).ti,ab,kf,kw.	2,658,524
3	(availab* or access* or density or densities or proximity or opening times or times of opening or opening days or days of opening or opening hours or hours of opening or trading hours or hours of trading or trading days or days of trading or sale hours or hours of sales or sale days or days of sales).ti,ab,kf,kw.	3,697,785
4	(tax or taxes or taxation or cost* or price* or pricing).ti,ab,kf,kw.	1,084,763
5	(intervention* or law or laws or legislation* or constitution* or act or acts or statute* or decree* or by-law* or bylaw* or regulat* or directive* or rule or rules or mandate* or bill or bills or policy or policies or strategy or strategies or action plan or action plans or guideline* or guidance* or standard or standards or program or programs or programme or programmes or trial or trials or implement*).ti,ab,kf,kw.	11,020,847
6	(review* or synthes* or meta-analysis or meta-analyses or metaanalysis or metaanalyses or meta-synthesis or meta-syntheses or metasynthesis or metasyntheses or meta-stud* or metastud* or scoping stud* or evidence assessment* or evidence map* or systematic map* or systematic literature map* or evidence gap map* or systematic narrative or systematic assessment* or meta-evidence or metaevidence or pool* analysis or pool* analyses).ti,ab,kf,kw.	5,029,827

7	((alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*) adj5 (media or social media or TV or television or radio or advert* or market* or promot* or film or films or movie* or lyrics or event sponsorship or (availab* or access* or density or densities or proximity or opening times or times of opening or opening days or days of opening or opening hours or hours of opening or trading hours or hours of trading or trading days or days of trading or sale hours or hours of sales or sale days or days of sales) or (tax or taxes or taxation or cost* or price* or pricing))).ti,ab,kf,kw.	27,968
8	((alcohol* or drink* or liquor or ethanol or beer or spirit or spirits or wine or malt beverage*) adj8 (intervention* or law or laws or legislation* or constitution* or act or acts or statute* or decree* or by-law* or bylaw* or regulat* or directive* or rule or rules or mandate* or bill or bills or policy or policies or strategy or strategies or action plan or action plans or guideline* or guidance* or standard or standards or program or programs or programme or programmes or trial or trials or implement*)).ti,ab,kf,kw.	62,827
9	7 and 8 and 6	851
10	exp alcohol drinking/ or exp alcoholic beverage/	90,192
11	exp advertising/ or exp marketing/ or exp social marketing/ or exp mass communication/ or exp movie/ or exp music/	749,265
12	exp retail outlet/	1,886
13	exp tax/ or exp cost/	409,699
14	(exp clinical study/ or exp epidemiology/ or exp law/ or exp government regulation/ or exp health program/ or exp evaluation study/ or exp types of study/ or exp practice guideline/ or exp health care planning/ or exp policy/) not (exp in vitro study/ or exp human versus nonhuman data/ or exp veterinary study/)	3,603,398
15	exp review/ or exp meta analysis/	3,212,422
16	10 and (11 or 12 or 13) and 14 and 15	12

17	9 or 16	861
18	limit 17 to (english language and embase)	453

Web of Science

TS=(((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") NEAR/5 ((media OR "social media" OR TV OR television OR radio OR advert* OR market* OR promot* OR film OR films OR movie* OR lyrics OR "event sponsorship" OR "event sponsorships") OR (availab* OR access* OR density OR densities OR proximity OR "opening times" OR "times of opening" OR "opening days" OR "days of opening" OR "opening hours" OR "hours of opening" OR "trading hours" OR "hours of trading" OR "trading days" OR "days of trading" OR "sale hours" OR "hours of sales" OR "sale days" OR "days of sales") OR (tax OR taxes OR taxation OR cost* OR price* OR pricing))) AND ((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") NEAR/8 (intervention* OR law OR laws OR legislation* OR constitution* OR act OR acts OR statute* OR decree* OR by-law* OR bylaw* OR regulat* OR directive* OR rule OR rules OR mandate* OR bill OR bills OR policy OR policies OR strategy OR strategies OR "action plan" OR "action plans" OR guideline* OR guidance* OR standard OR standards OR program OR programs OR programme OR programmes OR trial OR trials OR implement*)) AND (review* OR synthes* OR meta-analysis OR meta-analyses OR metaanalysis OR metaanalyses OR meta-synthesis OR meta-syntheses OR metasynthesis OR metasyntheses OR meta-stud* OR metastud* OR "scoping stud*" OR "evidence assessment*" OR "evidence map*" OR "systematic map*" OR "systematic literature map*" OR "evidence gap map*" OR "systematic narrative" OR "systematic assessment*" OR meta-evidence OR metaevidence OR "pool* analysis" OR "pool* analyses"))

Scopus

TITLE-ABS-KEY(((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") W/5 ((media OR "social media" OR TV OR television OR radio OR advert* OR market* OR promot* OR film OR films OR movie* OR lyrics OR "event sponsorship" OR "event sponsorships") OR (availab* OR access* OR density OR densities OR proximity OR "opening times" OR "times of opening" OR "opening days" OR "days of opening" OR "opening hours" OR "hours of opening" OR "trading hours" OR "hours of trading" OR "trading days" OR "days of trading" OR "sale hours" OR "hours of sales" OR "sale days" OR "days of sales") OR (tax OR taxes OR taxation OR cost* OR price* OR pricing))) AND ((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") W/8 (intervention* OR law OR laws OR legislation* OR constitution* OR act OR acts OR statute* OR decree* OR by-law* OR bylaw* OR regulat* OR directive* OR rule OR rules OR mandate* OR bill OR bills OR policy OR policies OR strategy OR strategies OR "action plan" OR "action plans" OR guideline* OR guidance* OR standard OR standards OR

program OR programs OR programme OR programmes OR trial OR trials OR implement*) AND (review* OR syntheses* OR meta-analysis OR meta-analyses OR metaanalysis OR metaanalyses OR meta-synthesis OR meta-syntheses OR metasynthesis OR metasyntheses OR meta-stud* OR metastud* OR "scoping stud*" OR "evidence assessment*" OR "evidence map*" OR "systematic map*" OR "systematic literature map*" OR "evidence gap map*" OR "systematic narrative" OR "systematic assessment*" OR meta-evidence OR metaevidence OR "pool* analysis" OR "pool* analyses"))

Cochrane Library

(((((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") NEAR/5 ((media OR "social media" OR TV OR television OR radio OR advert* OR market* OR promot* OR film OR films OR movie* OR lyrics OR "event sponsorship" OR "event sponsorships") OR (availab* OR access* OR density OR densities OR proximity OR "opening times" OR "times of opening" OR "opening days" OR "days of opening" OR "opening hours" OR "hours of opening" OR "trading hours" OR "hours of trading" OR "trading days" OR "days of trading" OR "sale hours" OR "hours of sales" OR "sale days" OR "days of sales") OR (tax OR taxes OR taxation OR cost* OR price* OR pricing)))) AND ((alcohol* OR drink* OR liquor OR ethanol OR beer OR spirit OR spirits OR wine OR "malt beverage" OR "malt beverages") NEAR/8 (intervention* OR law OR laws OR legislation* OR constitution* OR act OR acts OR statute* OR decree* OR by-law* OR bylaw* OR regulat* OR directive* OR rule OR rules OR mandate* OR bill OR bills OR policy OR policies OR strategy OR strategies OR "action plan" OR "action plans" OR guideline* OR guidance* OR standard OR standards OR program OR programs OR programme OR programmes OR trial OR trials OR implement*)) AND (review* OR syntheses* OR meta-analysis OR meta-analyses OR metaanalysis OR metaanalyses OR meta-synthesis OR meta-syntheses OR metasynthesis OR metasyntheses OR meta-stud* OR metastud* OR "scoping stud*" OR "evidence assessment*" OR "evidence map*" OR "systematic map*" OR "systematic literature map*" OR "evidence gap map*" OR "systematic narrative" OR "systematic assessment*" OR meta-evidence OR metaevidence OR "pool* analysis" OR "pool* analyses")):ti,ab,kw) OR (([mh "alcohol drinking"] OR [mh "alcoholic beverages"]) AND (([mh marketing] OR [mh "communications media"] OR [mh music]) OR ([mh taxes] OR [mh "costs and cost analysis"]))) AND ([mh "legislation as topic"] OR [mh "government regulation"] OR [mh policy] OR [mh "epidemiologic study characteristics"] OR [mh "health planning"] OR [mh "feasibility studies"] OR [mh "pilot projects"] OR [mh "program evaluation"] OR [mh "guidelines as topic"]) AND ([mh "review literature as topic"] OR [mh "meta-analysis as topic"])))

[Appendix B: Data Extraction Form](#)

This draft data extraction form is adapted from the SGAT-SR2 developed by Antequera et al. (2022).

General	Section	Data extracts
Study details	1. Authors	
	2. Year	
	3. Countries of authors' affiliations	
	4. Title	
	5a. Review type	
	5b. Method(s) of synthesis	
	6. Aim/Objectives	
	7. Populations	
	8a. Intervention - Type (Affordability, Availability or Marketing)	
	8b. Intervention details	
	9a. Primary outcomes	
	9b. Primary outcomes - Indicators/measures	
	10a. Other outcomes	
	10b. Other outcomes - Indicators/measures	
	11a. Inclusion criteria	
	11b. Exclusion criteria	
12a. Total number of included articles		
12b. Publication year range of		

	articles		
	12c. Geographical coverage (if mentioned)		
<u>Review Question 1 (Adapted from SGAT-SR2 by Antequera et al., 2022)</u>			
Review section	Question	Yes, Probably Yes, Probably No, N/A	No, Data extracts/Justification
Abstract	1. Did the abstract report on sex or gender?		
Background	2a. Did the background discuss the relevance of sex or gender to the review question?		
	2b. If 2a. "Yes" or "Probably yes", Did the background discuss if sex or gender interacts with other PROGRESS-Plus characteristics in the context of the review question?		
	*2c. Did the background discuss the relevance of other PROGRESS-Plus characteristics to the review question?		
Objectives	3a. Were sex, gender or related terms used in objectives?‡ ‡ <i>[Sex or gender] Related terms refer to female, male, individuals with differences of sex development girls, women, boys, men, transgender, and other gender diverse people</i>		
Methods	4a. Did the review's eligibility criteria consider sex or gender differences?		

	4b. If 4a. “Yes” or “Probably yes”, Did the review’s eligibility criteria consider any other PROGRESS-Plus characteristics interacting with sex or gender?		
	*4c. Did the review’s eligibility criteria consider other PROGRESS-Plus characteristics apart from sex or gender?		
	5. Did the review plan to collect characteristics of participants by sex or gender at the study-level?		
	6. Did the review plan to collect missing participant data by sex or gender at the study-level (<i>e.g.</i> , attrition from the study)?		
	7a. Did the review plan to analyse or report results across sex or gender for the most important outcomes (<i>e.g.</i> , analyses to investigate heterogeneity, such as subgroup analysis)?		
	7b. If 7a. “Yes” or “Probably yes”, Did the review plan to analyse or report results accounting for any other PROGRESS-Plus characteristics interacting with sex or gender?		
	*7c. Did the review plan to analyse or report results accounting for any other PROGRESS-Plus characteristics apart from sex or gender?		
	8. Did the review report characteristics of participants by		

Results (Review Question 2)	sex or gender at the study-level (or state that no data were available)?		
	9. Did the review report missing participant data by sex or gender at the study-level (or state that no data were available)?		
	10. Did the review report characteristics of participants by sex or gender at the review-level (or state that no data were available)?		
	11a. Did the review analyse or report results across sex or gender for the most important outcomes (e.g., analyses to investigate heterogeneity, such as subgroup analysis)?		
	11b. If 11.a. "Yes" or "Probably yes", Did the review analyse or report results accounting for any other PROGRESS-Plus characteristics interacting with sex or gender?		
	*11c. Did the review analyse or report results accounting for any other PROGRESS-Plus characteristics apart from sex or gender?		
	*12a. Did the review use a quality assessment tool (e.g. GRADE)?		
	12b. [If 12a is Yes - GRADE] Did the review consider the characteristics of participants by sex or gender to assess the certainty of the body of the		

	evidence for review outcome (i.e., indirectness)?		
Discussion and Authors' conclusions	13. Did the review discuss the limitations related to sex or gender of the population of interest?		
	14. Did the review discuss the implications of evidence for practice or research related to sex or gender of the population of interest?		
	15. Did the review discuss the applicability of evidence related to sex or gender of the population of interest?		
Appropriate use of terms	*16a. Did the authors define what they meant by sex? (can be just one line or even one word)		
	*16b. Did the authors define what they meant by gender? (can be just one line or even one word)		
	*17a. Did the authors use the term sex appropriately? (free text mention of interchangeable use, if any)		
	*17b. Did the authors use the term gender appropriately? (free text mention of interchangeable use, if any)		
	*18. Did the authors recognise or examine any sex/gender categories beyond the binary? (e.g. people with DSD, non-binary, transgender)		

Notes	
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**: Added questions*