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The Commercial Determinants of Mental Health

Professor Mark Petticrew and Dr Alice Tompson

London School of Hygiene & Tropical Medicine

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Session Overview

1. What are the Commercial Determinants of Health (Mark)

2. The Commercial Determinants of Mental Health (Alice)

Findings from our 3 Schools-funded evidence synthesis

3. Discussion (All) - *Please put any questions in the chat(?)*

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The Commercial Determinants of Health

Professor Mark Petticrew

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SPECTRUM

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https://gtr.ukri.org/projects?ref=MC_PC_18003

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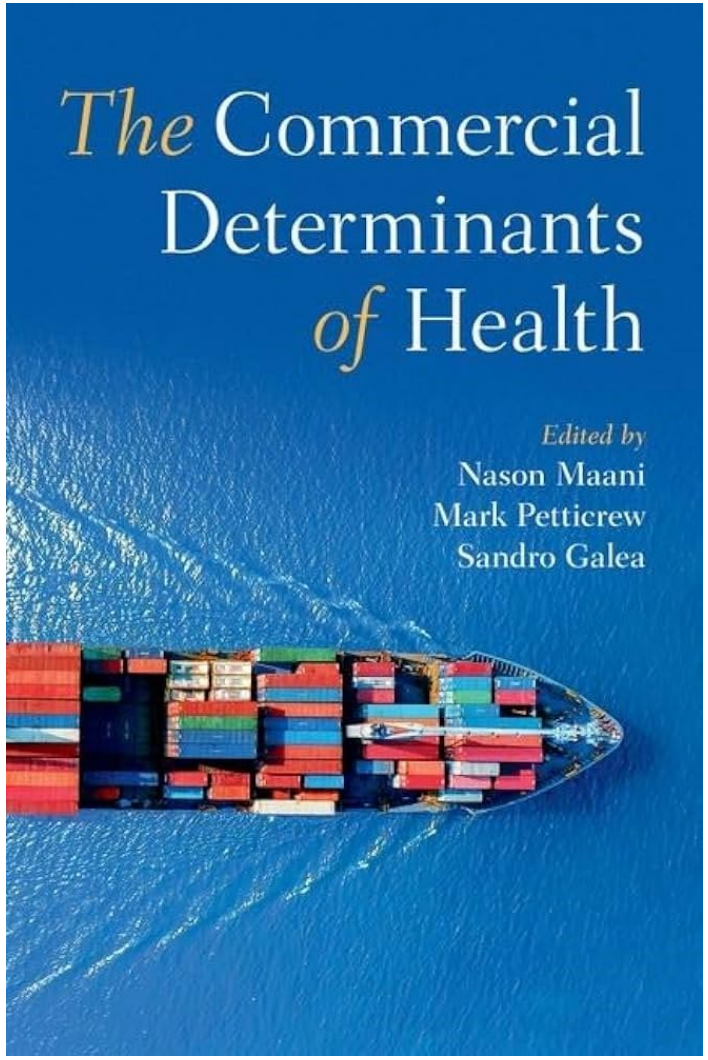
Commercial Determinants Research Group

THE UNIVERSITY of EDINBURGH

What we do:

- Research on tobacco, alcohol, gambling, firearms, opioid, healthcare, social media industries (among others)
- …and their front groups and organisations, including industry-funded CSR organisations and charities (e.g. Drinkaware, (UK and Ireland) Gambleaware, Drinkwise (Aus), Educ' Alcool (Quebec) etc)
- Work with policymakers, and public health practitioners, and the public
- Training in CDOH research methods (online short course, Nov 2024)
- Policy evaluation/evidence-based policymaking



Lancet Commission on CDOH (2023)

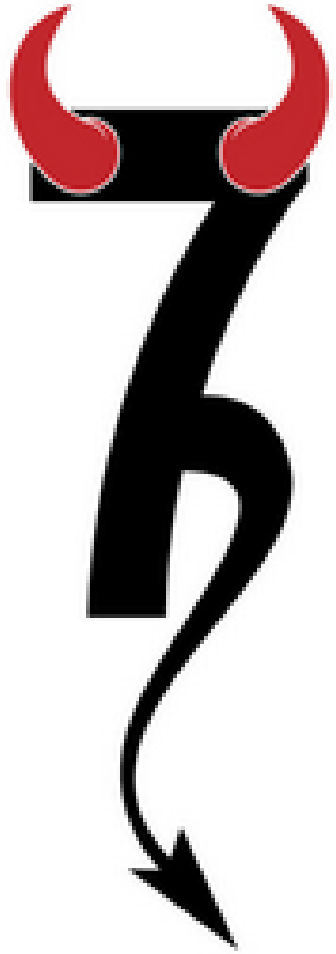
"The **systems, practices, and pathways*** through which commercial actors drive health and equity…."

https://www.thelancet.com/series/commercial-determinants-health

*** Not just products**

Seven commercial sector practices that negatively affect health and equity (*Lancet Commission on CDOH*)

- Political practices *(e.g. lobbying, policy substitution)*
- Scientific practices *(from evidence production to dissemination)*
- Marketing practices *(driving demand and consumption)*
- Supply-chain and waste practices *(that negatively affect human and planetary health)*
- Labour and employment practices *(e.g. outsourcing, weakening regulation)*
- Financial practices *(e.g. tax avoidance)*
- Reputation management practices *(e.g. Corporate Social Responsibility (CSR)*



https://www.vecteezy.com/vector-art/6721590-number-7-with-devil-s-horns-and-tail-icon-logo-design-vec

Unhealthy commodity industry

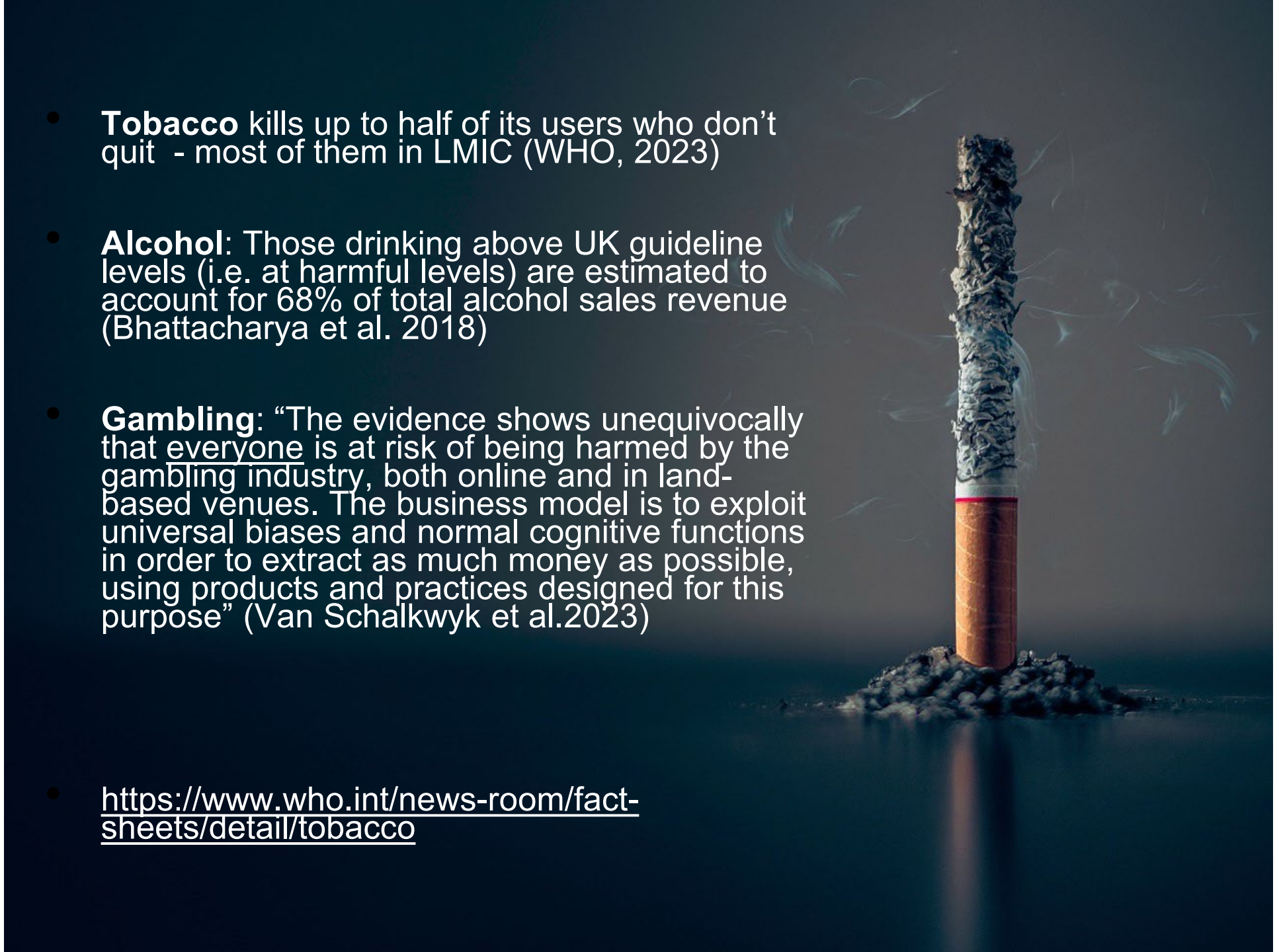
An industry whose primary product is considered an unhealthy commodity (ie, one that causes significant health damage). Some definitions include only tobacco, alcohol, and ultra-processed foods,[12] whereas others also include breast milk substitute, gambling, palm oil, fossil fuel, automobile, and mining industries.[13]

Gilmore et al. (2023) **Defining and conceptualising the commercial determinants of health** *Lancet March 23, 2023 https://doi.org/10.1016/ S0140-6736(23)00013-2*

Tobacco exceptionalism

- **Food: “Yes, but everyone needs to eat…”**

- **Ultra Processed Foods**: A substantial proportion of income from the corporate food system is generated by UPF manufacturing; high levels of consumption of UPFs damage human and planetary health (Wood et al. 2023)



- **Tobacco** kills up to half of its users who don't quit - most of them in LMIC (WHO, 2023)
- **Alcohol**: Those drinking above UK guideline levels (i.e. at harmful levels) are estimated to account for 68% of total alcohol sales revenue (Bhattacharya et al. 2018)
- **Gambling**: "The evidence shows unequivocally that everyone is at risk of being harmed by the gambling industry, both online and in land-based venues. The business model is to exploit universal biases and normal cognitive functions in order to extract as much money as possible, using products and practices designed for this purpose" (Van Schalkwyk et al.2023)
- https://www.who.int/news-room/fact-sheets/detail/tobacco

Why this matters

- The most common NCDs that are responsible for **70%** of deaths globally are driven by four main risk factors: tobacco use, physical inactivity, the harmful use of alcohol, and unhealthy diets;
- **All** of these factors are strongly commercially-influenced
- Almost three quarters of all NCD deaths occur in low- and middle-income countries
- **Commercial determinants of poor mental health**: alcohol, obesity, gambling, tobacco, social media use, pesticides – good evidence that all are drivers of (variously) anxiety, depression, suicide, self-harm
- There is no “good mental health” *without addressing the commercial determinants of mental health*

Why this matters (ii)

The Social Determinants of Health are strongly influenced by the CDOH

…an often invisible additional layer

Commercial Determinants of Health

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Commercial Determinants of Mental Health:
An overview of the evidence

Dr Alice Tompson

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Acknowledgements

Funders: NIHR Three Schools Mental Health Programme.

Research Team: Kate Dun-Campbell

Greg Hartwell, Nason Maani, May CI van Schalkwyk, Muhammed Alkasaby, Tahrima Choudhury, Katherine Körner.

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Project Aims

To synthesise the evidence regarding:

- the association between commercial determinants and mental health outcomes.
- the mental health impacts of using population-level interventions to address the commercial determinants of health.

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Methods

We conducted a pair of umbrella reviews (systematic reviews of systematic reviews).

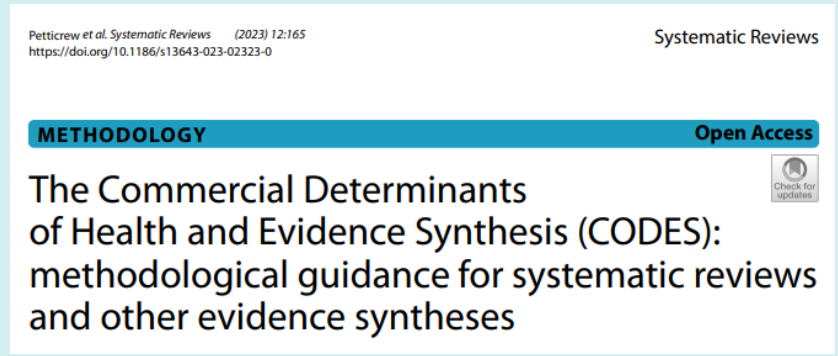
Searches
- Five databases (Medline, PubMed, PsychInfo, Scopus and the Cochrane databases).

Screening
- Organised in Covidence.
- Abstract/ full text screening by 2 researchers.

Data extraction
- Review characteristics and findings collated

Quality appraisal
- SIGN/ AMSTAR2 checklists used.
- Industry involvement (funding, Conflicts of Interest)

Synthesis
- Narrative, industry-by-industry approach.


Petticrew et al. Systematic Reviews (2023) 12:165
https://doi.org/10.1186/s13643-023-02323-0

Systematic Reviews

METHODOLOGY Open Access

The Commercial Determinants of Health and Evidence Synthesis (CODES): methodological guidance for systematic reviews and other evidence syntheses

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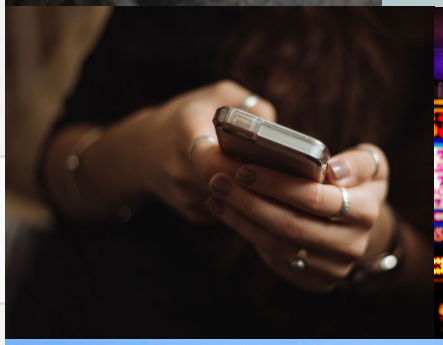
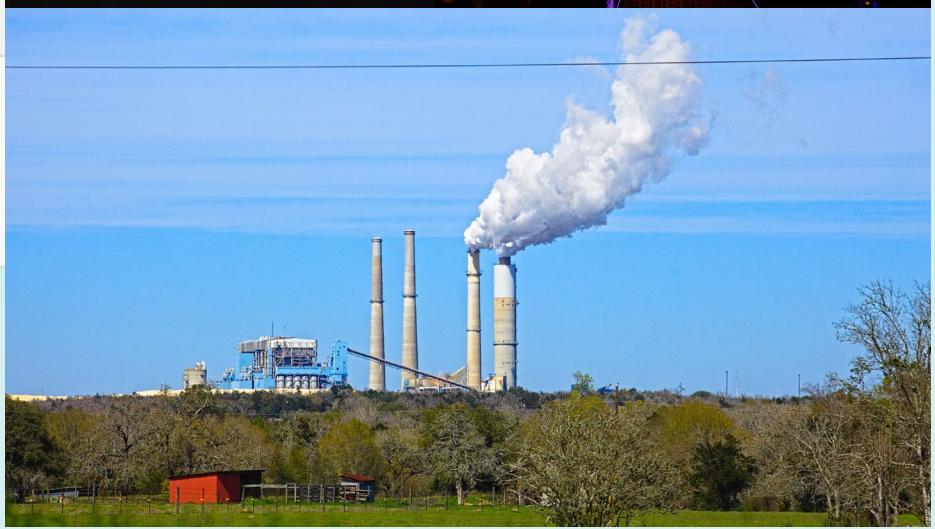
Methods - Review 1 (Associations)

Population	Any age and in any geographical setting.
Exposure	Commercial Determinants of Mental Health: Six unhealthy commodities Tobacco, ultra-processed foods, alcohol, social media, gambling, fossil fuels (including climate change and air pollution)
Outcomes	Anxiety, depression, suicide Any measurement type
Interventions	Not applicable
Study design	Systematic reviews or reviews with a systematic search strategy. Full text articles, in English, published 2012-2023.





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Methods - Review 2 (Interventions)

Population	Any age and in any geographical setting.
Exposure	Commercial Determinants of Mental Health: Five unhealthy commodities Tobacco, ultra-processed foods, alcohol, social media, gambling.
Outcomes	**Primary**: Anxiety, depression, suicide Any measurement type **Surrogate:** Product consumption
Interventions	**Included:** Population-level interventions targeting corporate behaviour/ their products **Excluded:** Those targeting clinical groups, delivered in clinical settings or focused on changing consumer behaviour
Study design	Systematic reviews or reviews with a systematic search strategy. Full text articles, in English, published 2012-2023.

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Methods - Review 2 (Interventions)

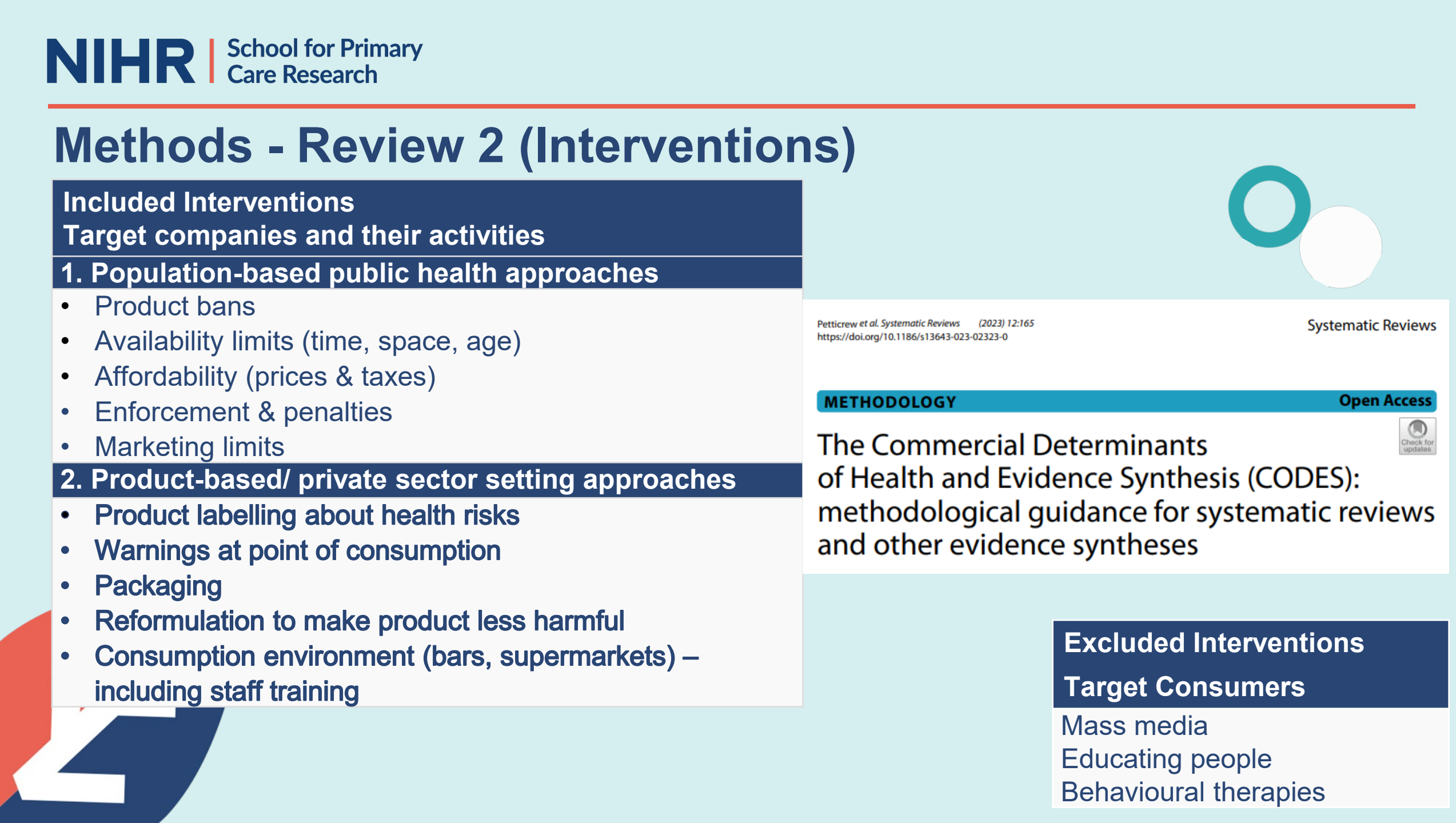
Included Interventions
Target companies and their activities

1. Population-based public health approaches

- Product bans
- Availability limits (time, space, age)
- Affordability (prices & taxes)
- Enforcement & penalties
- Marketing limits

2. Product-based/ private sector setting approaches

- **Product labelling about health risks**
- **Warnings at point of consumption**
- **Packaging**
- **Reformulation to make product less harmful**
- **Consumption environment (bars, supermarkets) – including staff training**



Excluded Interventions
Target Consumers

Mass media
Educating people
Behavioural therapies

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Results – Review 1

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Review 1 - Associations (n = 65)

Included reviews by industry and their quality

	Tobacco	Alcohol	UPF	Gambling	Social media	Fossil fuels
N	14	11	5	3	11	21
Quality Appraisal findings						
High	8	4	3	1	5	10
Acceptable	6	4	2	2	5	9
Low		3			1	2

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Review 1 - Associations (n = 65)

High quality reviews showing an association between industry & outcome

Outcomes	Tobacco	Alcohol	UPF	Gambling	Social media	Fossil fuels: Climate change	Fossil fuels: Air pollution
Anxiety							
Depression							
Suicide							

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Review 1 - Associations (n = 65)

How to present the findings of 65 reviews?!

- Focus on high quality reviews.
- All results presented are statistically significant.
- Tried to give a flavour of the direction and magnitude of the association, and the type of evidence.

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Review 1: Tobacco (n = 14, high quality = 8)

Outcomes	Smoking	2nd hand smoke exposure	Smoking in pregnancy	Smoking Cessation
Anxiety				
Depression		Children/YP Postnatal Depression	Postnatal Depression	
Suicide			Ideation	

Depression: A review found a dose-response relationship between 2nd hand smoke exposure and depressive symptoms in children and young people.

Suicide: A review of **prospective cohort studies** found current smokers experienced 2.4 times the risk of death by suicide compared with never smokers (RR 2.41; 95%CI 2.08- 2.80).

Cessation: Two reviews reported reductions in risk of anxiety, mixed anxiety and depression, and depression from baseline smoking to follow-up after cessation.

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Review 1: Alcohol (n = 11, high quality = 4)

Outcomes	Alcohol
Anxiety	
Depression	
Suicide	

Depression:

A meta-analysis of **cohort studies** found:

- A 57% higher risk of subsequent depression symptoms in people with alcohol use disorder (Relative risk 1.57; 95%CI 1.41-1.76).

Suicide:

A review of **cohort studies** found:

- Alcohol use was associated with a 74% increased odds (OR 1.74; 95% CI 1.31-2.31) of suicide.

A review including a **range of study designs** found for people with alcohol use disorder:

- Had three times higher odds of suicide attempt (OR 3.13; 95% CI 2.45-3.81)

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Review 1: UPF (n = 5, high quality = 3)

Outcomes	UPF
Anxiety	
Depression	
Suicide	

Depression:

A meta-analysis of **prospective studies** found

- a 22% higher risk of subsequent depression associated with **ultra-processed food** consumption (HR 1.22; 95% CI 1.16-1.28).

Another found:

- A dose response relationship between risk of depression and **sugar-sweetened beverage** consumption**.**

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Review 1: Gambling (n = 3, high quality = 1)

Outcomes	Gambling
Anxiety	
Depression	
Suicide	

A review without pooled estimates reported:

Depression:

- A study found the onset of 'problem gambling' was associated with nearly double the odds of an incident major depressive disorder (Adjusted odds ratio 1.98; 95%CI 1.14- 3.44).
- However, it also included several studies which found no association between gambling and later depression or anxiety.

Suicide:

- A 15 times higher standardised mortality ratio for death by suicide in adults with a gambling disorder, compared with the general public.

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Review 1: Social Media (n = 11, high quality = 5)

Outcomes	Social media
Anxiety	
Depression	
Suicide	

Depression:

The evidence was mixed. A review of **cross-sectional studies** found:

- A weak positive correlation between social media use & depression in adolescents ($r = 0.11$ $p < 0.001$).

Suicide:

A review found:

- Nearly 3 times the odds of suicidal ideation amongst adolescents with “problematic” social media use (an undefined term) (OR 2.81; 95%CI 1.72- 4.59).

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Review 1: Fossil fuels (n = 21, high quality = 11)

Outcomes	Climate change
Anxiety	
Depression	
Suicide	

Climate change - Temperature increase

One review found that:

- Each 1°C increase led to an increased risk of mental health related mortality and morbidity.

Suicide:

One review found:

- A 9% increased risk of suicide per increase of 7.1°C in temperature.

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Review 1: Fossil fuels (n = 21, high quality = 11)

Outcomes	Air pollution
Anxiety	
Depression	
Suicide	

Depression:

Six reviews found:

- Small associations between short-term exposure to particulate matter and depression.
- Two reviews found associations between long-term exposure and depression.

Anxiety:

One review reported:

- Two studies found a positive association between long-term air pollution and anxiety

Suicide:

Three reviews found:

- Small but positive associations between air pollution and suicide.

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Review 1: Summary

Outcomes	Tobacco	Alcohol	UPF	Gambling	Social media	Fossil fuels: Climate change	Fossil fuels: Air pollution
Anxiety							
Depression							
Suicide							

Review 1 highlights the existing base of high-quality evidence for many of these unhealthy commodities' impacts on mental ill health

It indicates that commercial determinants is a valuable framework for understanding the drivers of mental ill health.

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Research Recommendations

- Longitudinal studies with robust measures of social media exposure & mental health.
- Investigate the wider commercial impacts on mental health beyond product consumption (e.g. via advertising, price promotions).
- Quantify the mental ill-health associated with the physical health impacts from commercial determinants (e.g. lung cancer, liver cirrhosis, and violence).

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Results – Review 2

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Review 2 - Interventions (n = 160)

Included reviews by industry and outcome

	Tobacco	Alcohol	UPF	Gambling	Social media
N	35	24	89	14	0
Outcomes					
Mental Health	0	6	0	0	0
Anxiety	-	-	-	-	-
Depression	-	-	-	-	-
Suicide	-	6	-	-	-
Surrogate	35	18	89	14	0

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Review 2 – Alcohol (n = 24, 6 with Mental Health outcomes)

Outcomes	Alcohol
Anxiety	
Depression	
Suicide	

- Suicide was the only MH outcome, with evidence from high income countries only.
- Data were typically presented alongside that for alcohol-associated crimes such as violence.
- Interventions altered the affordability and availability of alcohol.

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Review 2: Alcohol

Three of the six reviews included multiple relevant studies:

- One examined raising the **minimum legal drinking age on suicide (**two studies reported a decrease in rates, two reported no effect).
- One found **partial restrictions** to be more effective compared to total prohibition of alcohol based on a 4 studies.
- Another considered a range of policies concluding that, "*Targeting harmful alcohol consumption may contribute towards a reduction in suicidal behaviour at the population level*".

Three reviews each cited a single primary study relevant to this overview:

- The incidence of hospitalization following **trading hour restrictions** for off-premise alcohol sales fell.
- **Remonopolization** of alcohol sales (and the accompanying fall in accessibility) was followed by a reduction in suicides.
- **Price increases** were associated with reduced suicide rates.

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Review 1: High quality reviews showing an association between industry & mental health outcome

Outcomes	Tobacco	Alcohol	UPF	Gambling	Social media
Anxiety					
Depression					
Suicide					

Review 2: Population level interventions addressing each industry that measure mental health outcomes

Outcomes	Tobacco	Alcohol	UPF	Gambling	Social media
Anxiety					
Depression					
Suicide					

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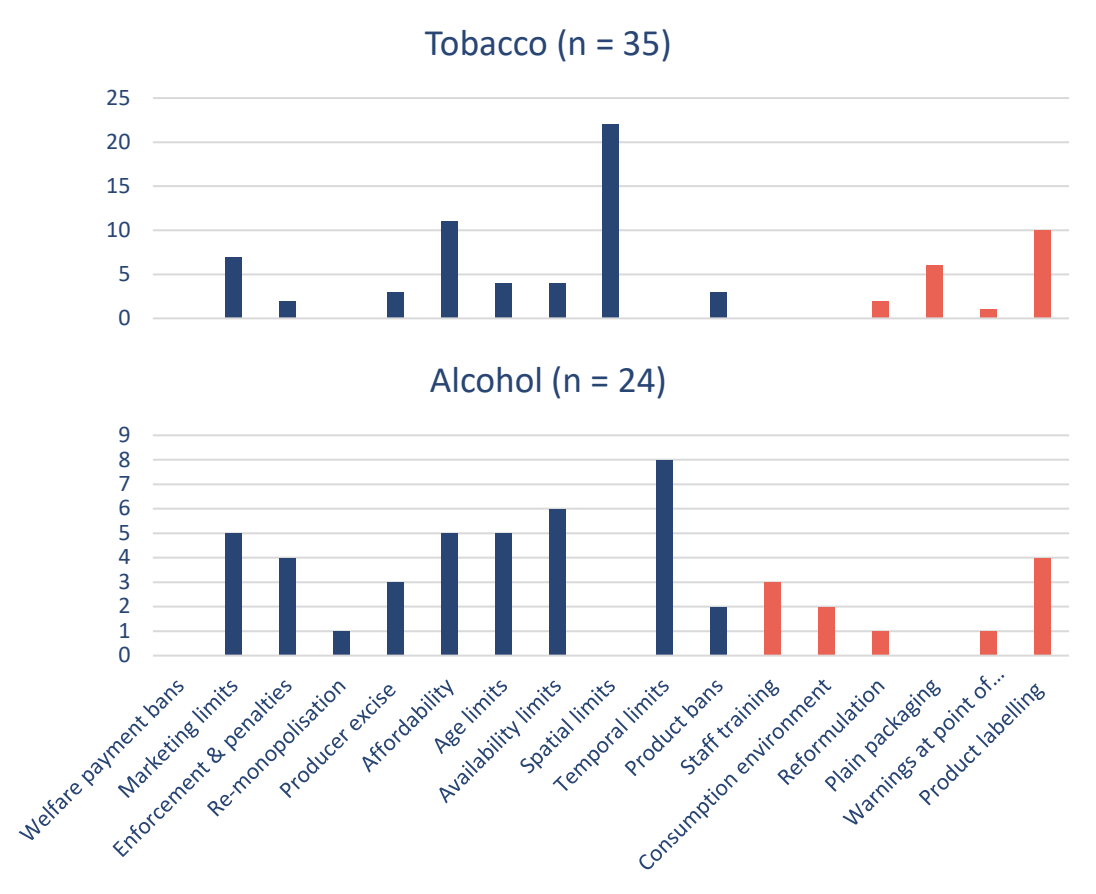
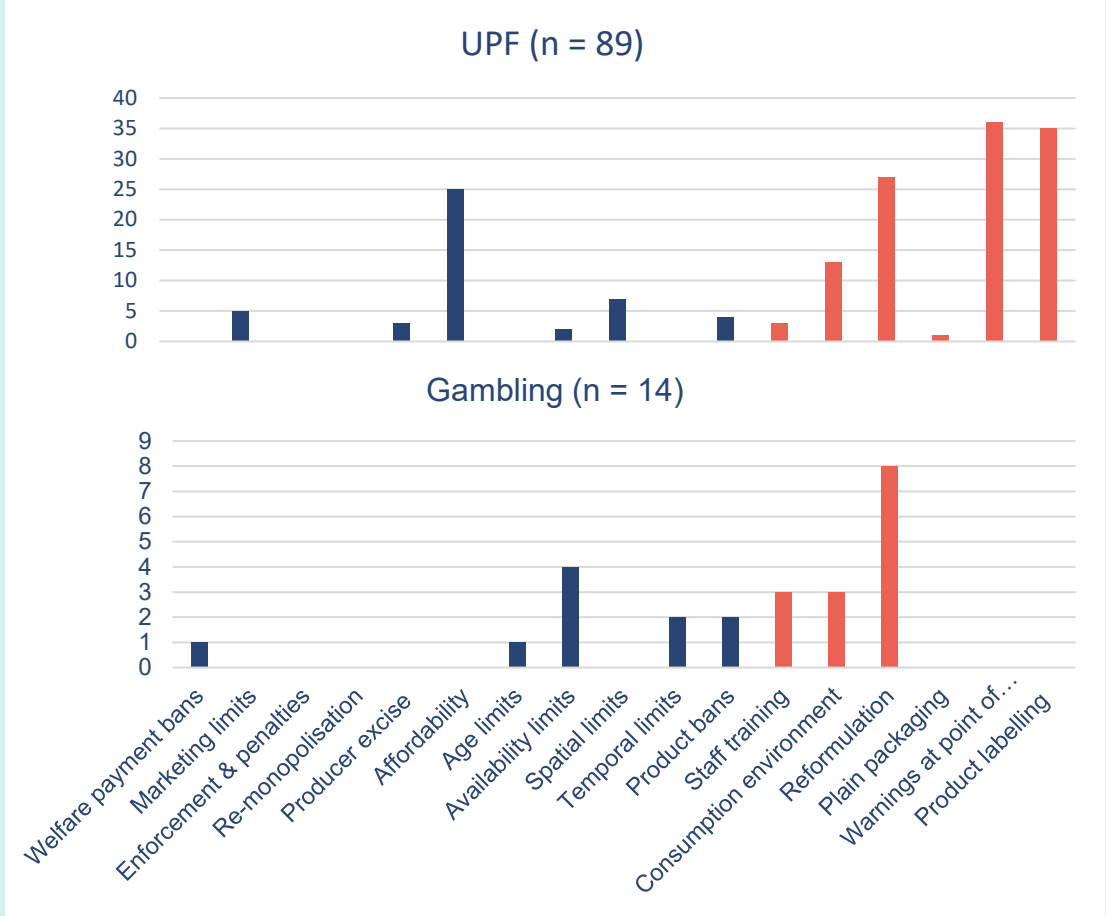
Review 2: Types of interventions included





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Review 2: Summary

- We found very limited evidence regarding interventions addressing the commercial determinants of mental health.

- Public health interventions addressing the commercial determinants may benefit population mental health

- Industry influence may hamper the evaluation of mental health impacts: it requires acknowledging that their ‘leisure’ products may be harmful.

- Industry acts as gatekeepers for online environments making it difficult to conduct independent evaluations of interventions in these settings.

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Research Recommendations

- Industry independent evaluations of upstream interventions addressing gambling and social media.
- Inclusion of mental health outcomes when evaluating population-level interventions addressing the commercial determinants.
- Research into addressing the commercial determinants of mental health in low- and middle-income settings.
- Improved PPIE in commercial determinants research to help prevent stigmatizing framings of mental health being reproduced.

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PLOS GLOBAL PUBLIC HEALTH

RESEARCH ARTICLE

Commercial determinants of mental ill health: An umbrella review

Kate Dun-Campbell[1]*, Greg Hartwell[2], Nason Maani[3], Alice Tompson[2], May CI van Schalkwyk[1], Mark Petticrew[2]

Health Promotion International, 2024, **39**, daae147
https://doi.org/10.1093/heapro/daae147
Review

OXFORD

Review

Addressing the commercial determinants of mental health: an umbrella review of population-level interventions

Alice Tompson[1,2,*], Muhammed Alkasaby[3], Tahrima Choudhury[1,4], Kate Dun-Campbell[5], Greg Hartwell[1], Katherine Körner[5], Nason Maani[6,7], May C.I. van Schalkwyk[5], and Mark Petticrew[1,2]

https://pmc.ncbi.nlm.nih.gov/articles/PMC11355563/

https://pmc.ncbi.nlm.nih.gov/articles/PMC11579613/

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Thank you for listening!
Any questions or comments?

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