

Using social media to reduce population-level alcohol consumption and increase support for alcohol policies: A systematic review

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Conflict of Interest Declaration

- The authors declare that they have no conflict of interest.

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*WANT TO HEAR SOMETHING
CRAZY? ALCOHOL
INCREASES YOUR RISK
OF BREAST CANCER.*

*NO WAY.
ARE YOU SURE?*



Just one drink

SERIOUS. AND IT'S
NOT ONLY WHEN
YOU DRINK A LOT.
IT'S LIKE EVEN
A LITTLE BIT.

SO, WHAT'S
A LITTLE BIT?

JUST ONE DRINK.
LIKE ONE COCKTAIL.
ONE BEER.

JUST WHEN
I WAS GOING
TO ORDER
ANOTHER ONE...



Knowledge is power

SO WHY HAVEN'T
I HEARD
ABOUT THIS?

NO IDEA, BUT THE
RESEARCH HAS BEEN
AROUND FOR A LONG
TIME—LIKE 30 YEARS.

SOMEONE
SHOULD PUT THIS
ON A WEBSITE...





Quick Links

- What is a Drink?
- How It Works
- What's the Risk?
- Resources
- About
- En Español

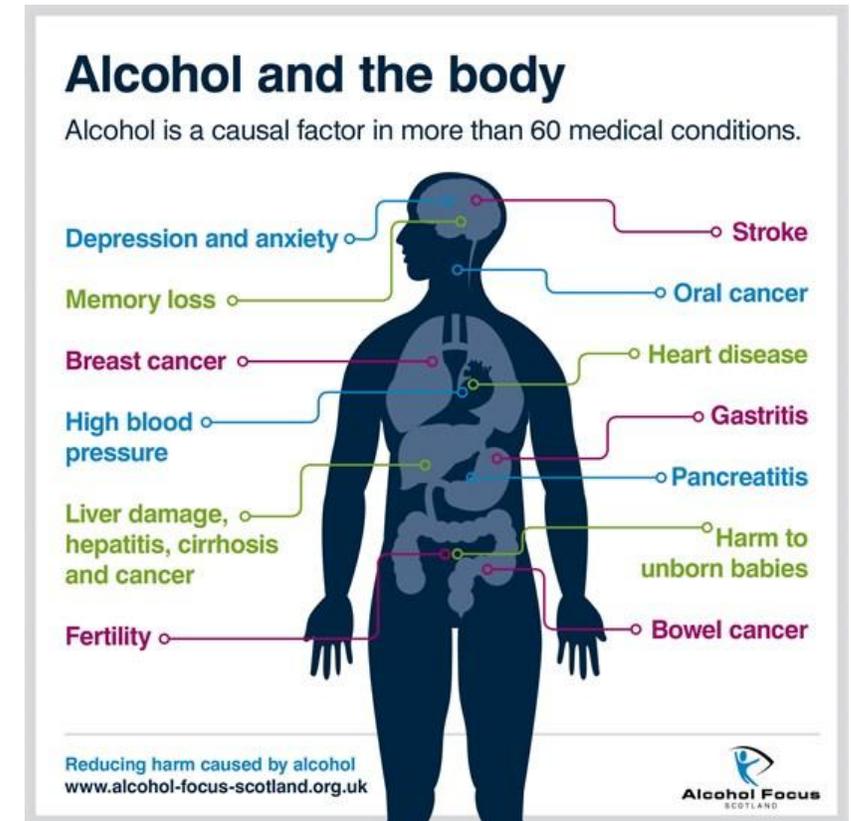
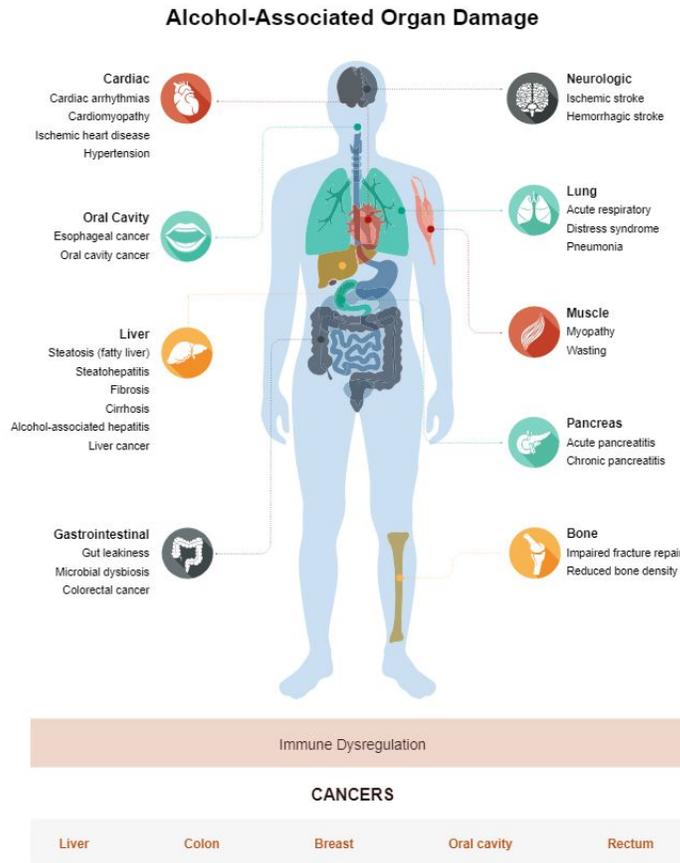


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Six week social media campaign from February to April 2021
#drinklessforyourbreasts

Alcohol and health



5.3% of deaths and 5.1% of the disease burden globally are attributable to alcohol use, accounting for 3.3 million deaths per year worldwide

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Current population-level communication initiatives

- Improve alcohol-related knowledge
- Raise public awareness of alcohol-related consequences
- Overcome misconceptions
- Reduce alcohol consumption
- Mass media campaigns
 - Television
 - Radio
 - Cinema
 - Online broadcasting
 - Newspapers and magazines
 - Leaflets/booklets
 - Direct mail
 - Outdoor advertising

Current
population-level
communication
initiatives

- National media campaign to reduce underage drinking – federally funded at:

\$2 million

- Alcohol industry marketing:

\$4 billion

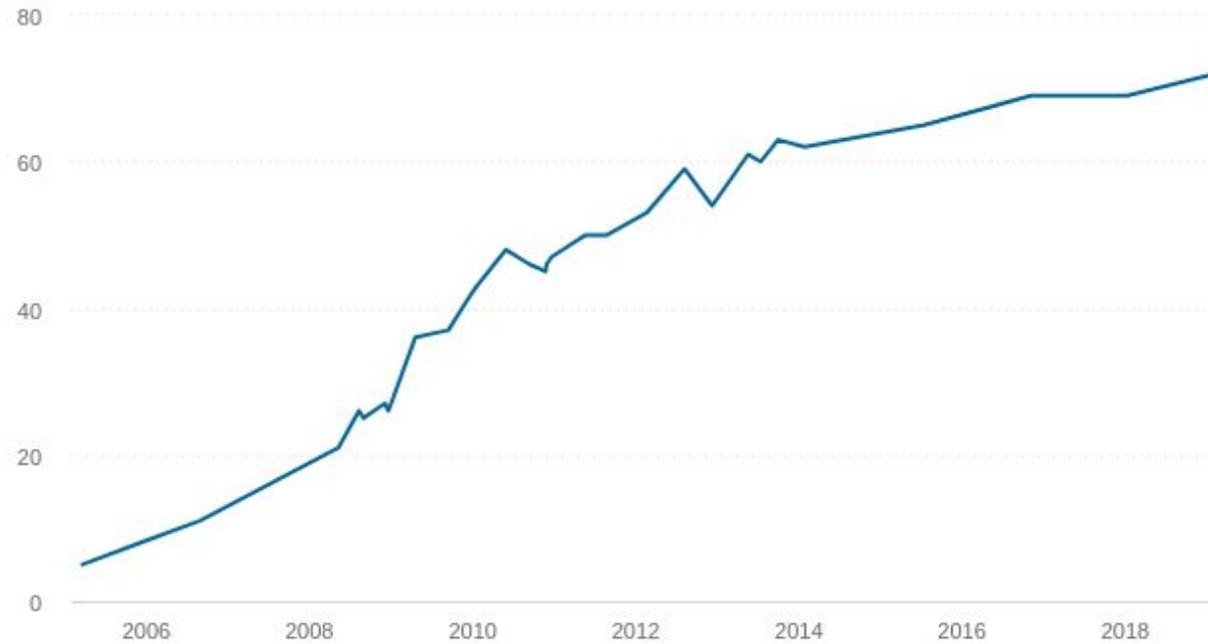
- Total spent focusing on alcohol and youth and the broader community:
\$71.1 million

Social media campaigns

- Social media campaigns may offer an appealing route for public health messaging
- Be potentially a more cost-effective option than traditional mass media

Social media use

% of U.S. adults who use at least one social media site



Source: Surveys conducted 2005-2019.

Today, 72% of the public uses some type of social media.

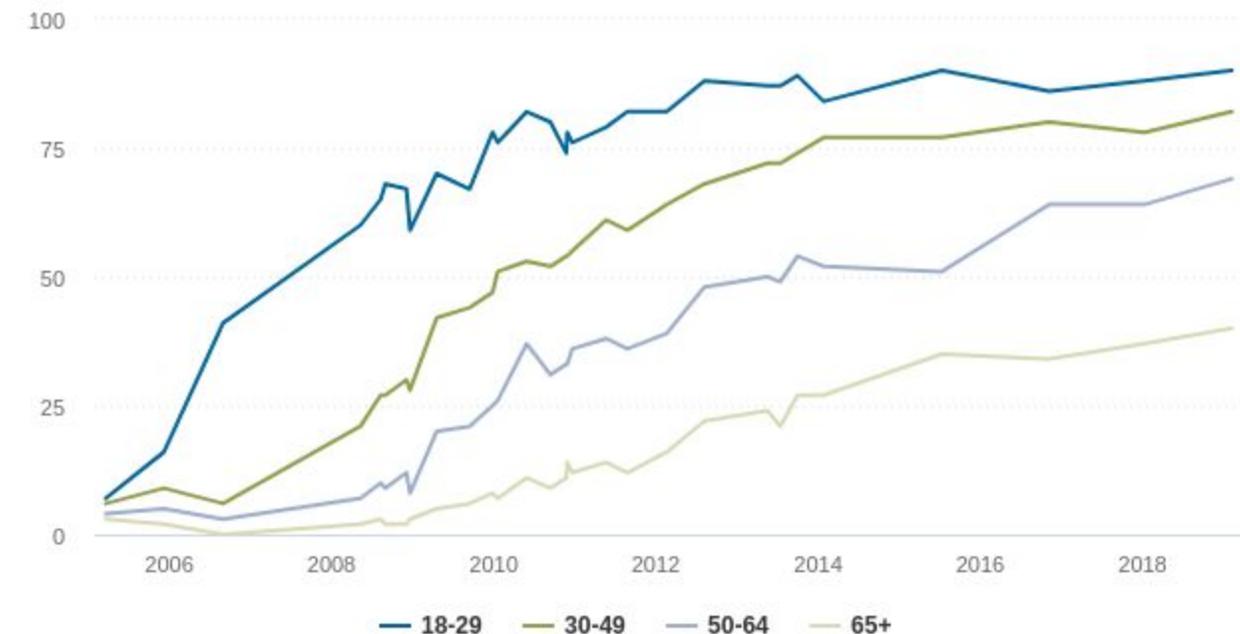
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Social media use by age

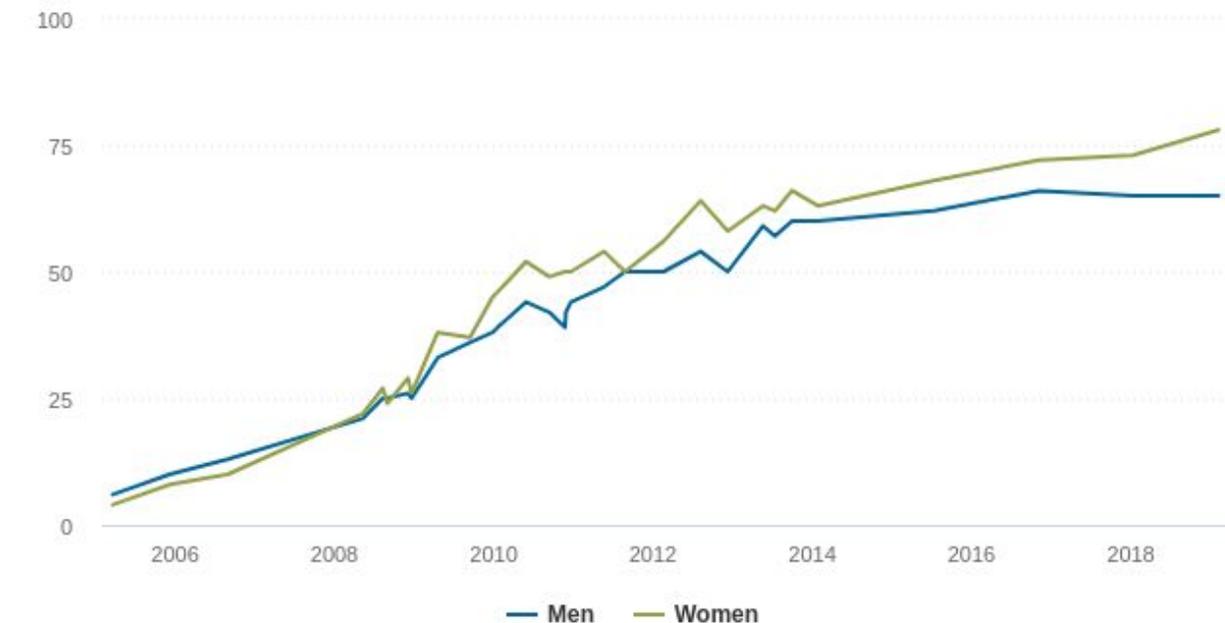
% of U.S. adults who use at least one social media site, by age



Source: Surveys conducted 2005-2019.

Social media use by gender

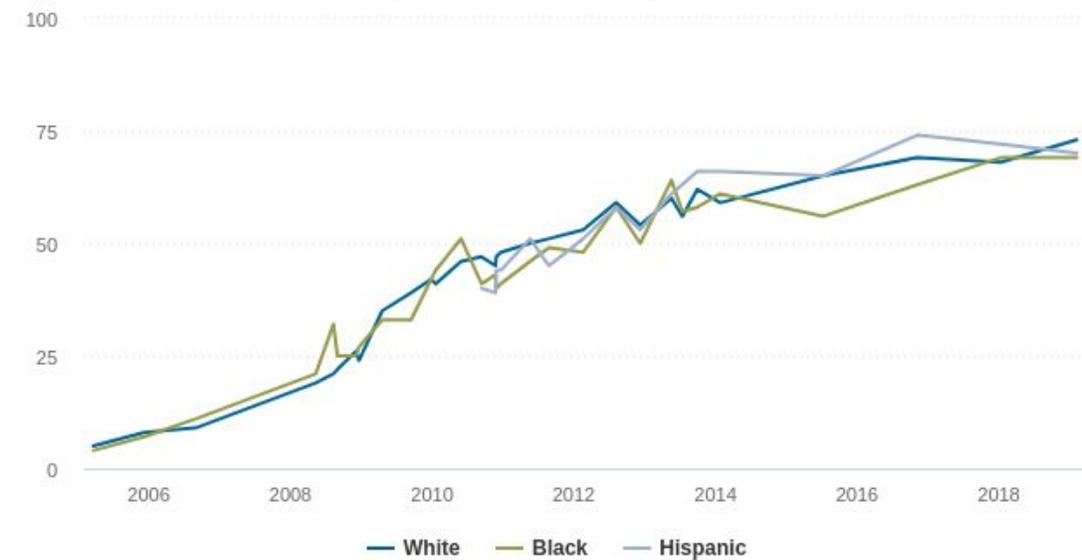
% of U.S. adults who use at least one social media site, by gender



Source: Surveys conducted 2005-2019.

Social media use by race

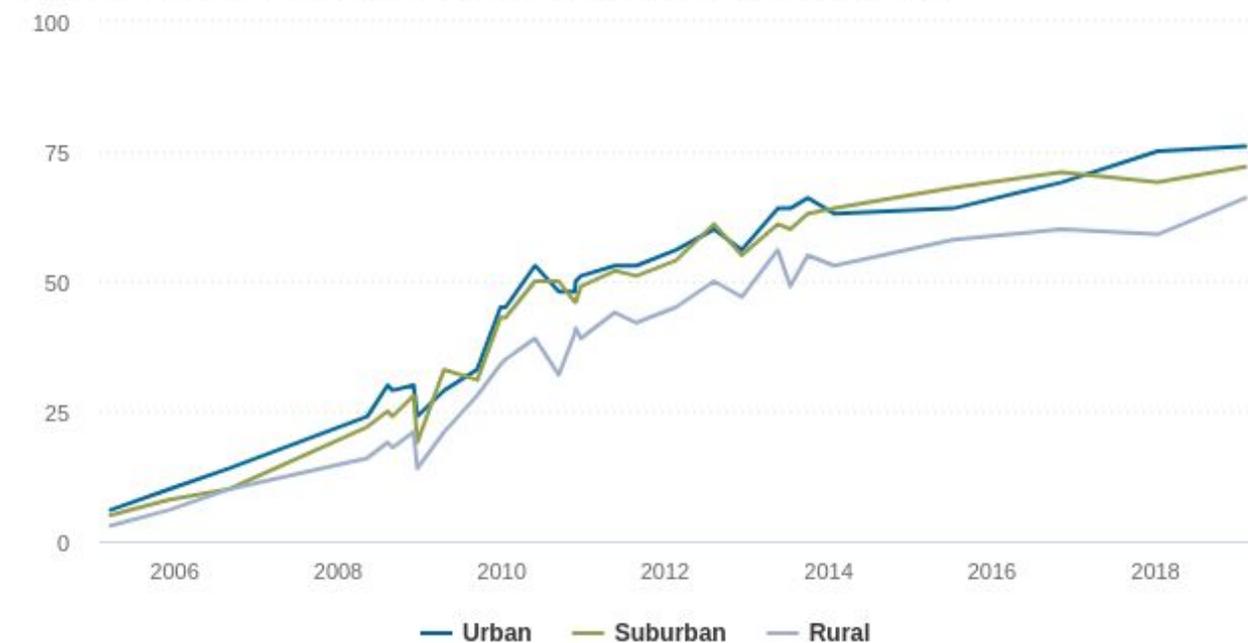
% of U.S. adults who use at least one social media site, by race



Source: Surveys conducted 2005-2019. Data for Hispanics includes only surveys that included Spanish-language interviews.

Social media use by community type

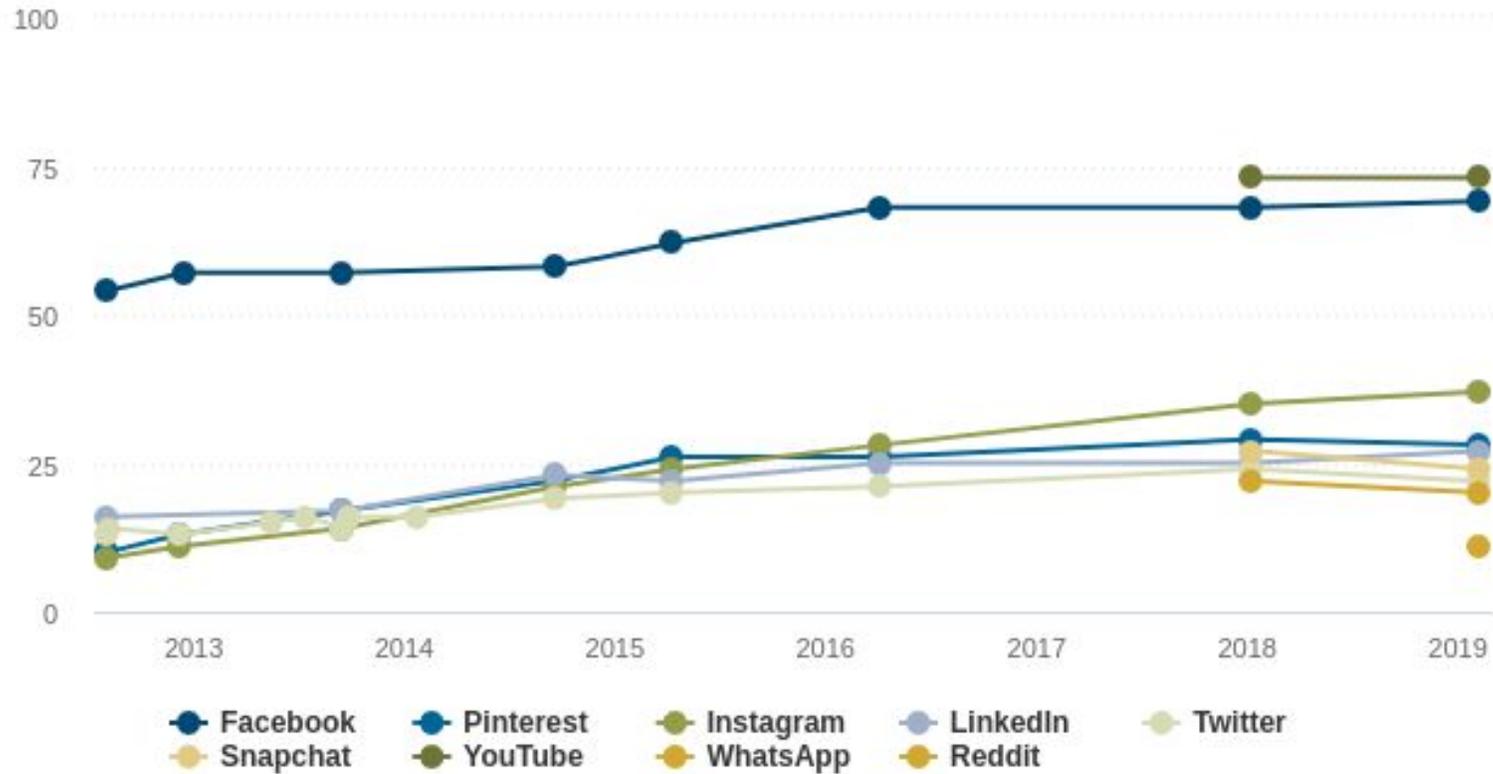
% of U.S. adults who use at least one social media site, by community type



Source: Surveys conducted 2005-2019.

Which social media platforms are most popular

% of U.S. adults who use ...

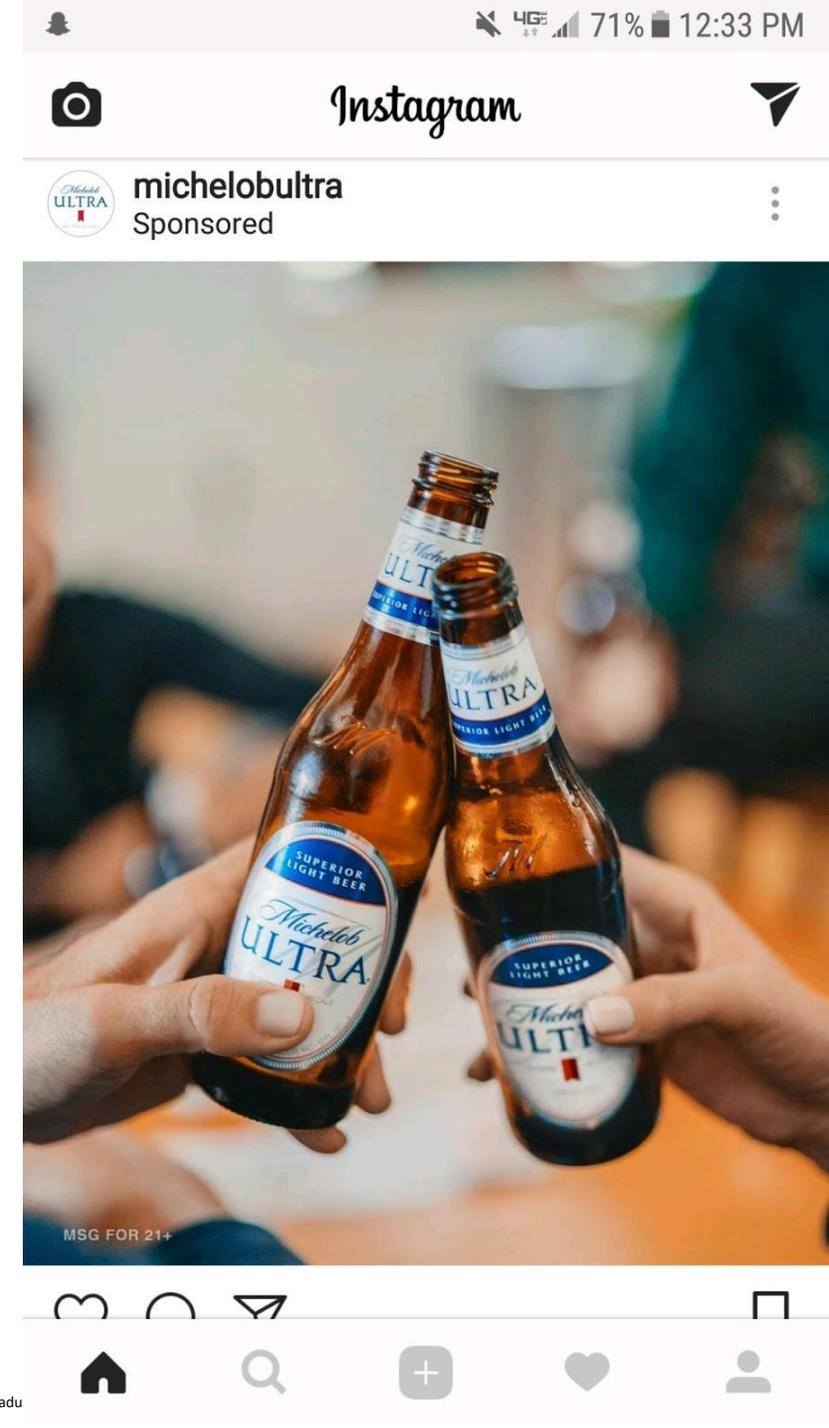


YouTube and Facebook are the most-widely used online platforms.

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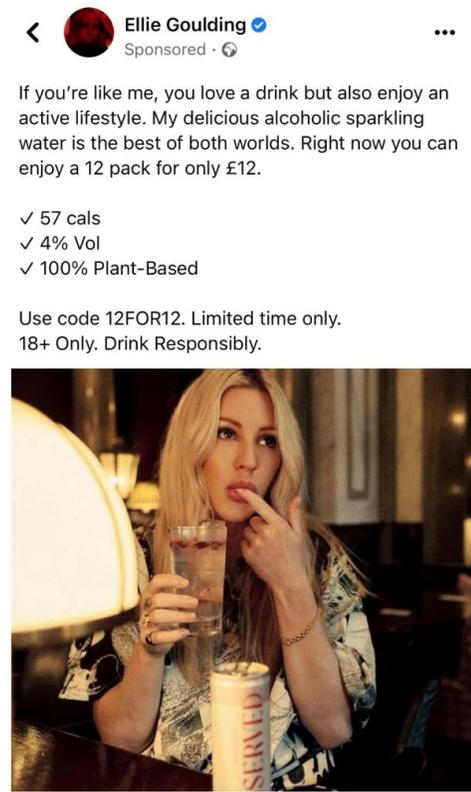
How alcohol companies can reach people on social media

- Alcohol companies pay for sponsored alcohol advertisements that 'pop up' in the newsfeeds or stories of their target audience, advertising specific drinks or bottle shop promotions.
- Alcohol companies collect personal data of social media users and target those who frequently look up alcohol content.



How alcohol companies can reach people on social media

- Social media influencers are paid by alcohol companies to upload photos or videos of themselves with an alcoholic drink.



How alcohol companies can reach people on social media

- Alcohol brands also create official Facebook, Twitter or Instagram pages to engage 'fans' through questions/polls, by posting photos and memes, hosting competitions, and sharing videos.
 - This content is highly interactive and easily shared.



What's being done
about this from a public
health perspective?

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Goals of the current systematic review study

1. What type(s) of social media campaigns have been used to reduce population-level alcohol consumption?
2. What populations have been the targets of such campaigns?
3. What have been the effects of these campaigns?

Methods

- Literature search on February 2022
- Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)
- Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies
- Databases:
 - PubMed
 - Web of Science
 - APA PsycINFO
 - EMBASE
 - MEDLINE
 - Cochrane Library
 - Scopus
 - ASSIA
 - ERIC
 - Communication & Mass Media Complete
 - arXiv
 - Engineering Village

SEARCH STRING

Table 1. Sample search strings (example of what was used for PubMed)

| Search category | Search terms |
|------------------------|---|
| 1. Social media | "Social Media" ^a OR Social Media ^b OR "blogging" ^a OR Blogging ^b OR "Internet" ^a OR "Internet" ^b OR "Facebook" ^b OR "Instagram" ^b OR "Twitter" ^b OR "TikTok" ^b OR "MySpace" ^b OR "YouTube" ^b OR "WhatsApp" ^b OR "Messenger" ^b OR "WeChat" ^b OR "Tumblr" ^b OR "Twitter" ^b OR "Reddit" ^b OR "Snapchat" ^b OR "Pinterest" ^b OR "Line" ^b OR "Telegram" ^b |
| 2. Campaign | "Campaign" ^b OR "Marketing" ^a OR "Social Marketing" ^a OR "Advertising" ^a OR "Behavior" ^a OR "Awareness" ^a OR "Attitude to Health" ^a OR "Health Promotion" ^a OR "Health Education" ^a OR "Health Campaigns" ^b OR "Health Campaign" ^b OR "Campaigns, Health" ^b OR "Campaign, Health" ^b OR "Education, Health" ^b OR "Community Health Education" ^b OR "Education, Community Health" ^b OR "Health Education, Community" ^b OR "Promotion, Health" ^b OR "Promotions, Health" ^b OR "Promotion of Health" ^b OR "Health Promotions" ^b OR "Promotional Items" ^b OR "Item, Promotional" ^b OR "Items, Promotional" ^b OR "Promotional Item" ^b OR "Wellness Programs" ^b OR "Program, Wellness" ^b OR "Programs, Wellness" ^b OR "Wellness Program" ^b |
| 3. Alcohol consumption | "Alcohol Drinking" ^a OR "Alcohol" ^a OR "Alcoholic Beverages" ^a OR "Automobile Driving" ^a OR "Alcohol" ^b OR "Drinking, Alcohol" ^b OR "Alcohol Consumption" ^b OR "Consumption, Alcohol" ^b OR "Alcohol Intake" ^b OR "Alcohol Intakes" ^b OR "Intake, Alcohol" ^b OR "Alcohol Drinking Habits" ^b OR "Alcohol Drinking Habit" ^b OR "Drinking Habit, Alcohol" ^b OR "Habit, Alcohol Drinking" ^b OR "Habits, Alcohol Drinking" ^b OR "Drinking Behavior" ^b OR "Alcoholic Beverage" ^b OR "Beverage, Alcoholic" ^b OR "Beverages, Alcoholic" ^b OR "Binge Drinking" ^b OR "Binge Drink" ^b OR "Episodic Drinking" ^b OR "Episodic Drink" ^b OR "Alcohol Drinking/adverse effects" ^b OR "Automobile Drivings" ^b OR "Driving, Automobile" ^b OR "Drivings, Automobile" ^b OR "Driving" ^b OR "Drinking and Driving" ^b |
| 4. Combined | 1 AND 2 AND 3 |

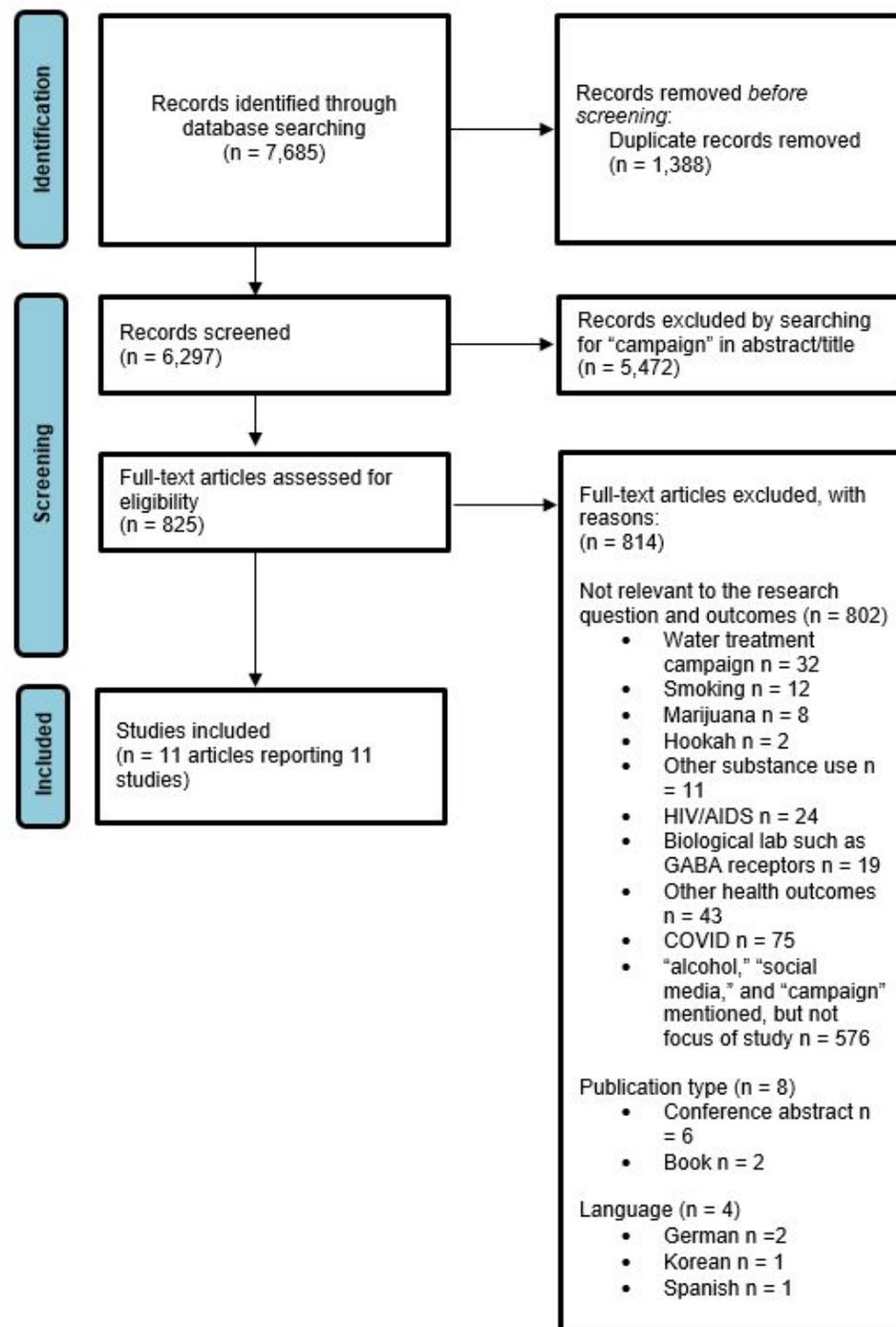
^a denotes MeSH headings

^b denotes keyword headings

Methods

- Inclusion criteria:
 - Alcohol consumption
 - Alcohol-related social cognitive variables (e.g., awareness)
 - Campaign exposure
 - Alcohol-related harm
 - Health service usage
- Exclusion criteria:
 - Conference abstracts
 - Qualitative-only studies
 - Internet-based advertising campaigns (e.g., Google Ads)
 - General campaigns that included minimal alcohol messaging

Total studies
= 11



Campaign objectives of the 11 studies

1. To reduce drinking and driving (4)
2. To reduce alcohol-related risk and harm among college students (2)
3. Raise awareness of the dangers of drinking during pregnancy among women of childbearing age and in the general global population
4. To reduce the prevalence of alcohol-exposed pregnancies
5. Increase awareness that alcohol is a risk factor for cancer
6. To abstain from drinking for three months during the Buddhist Lent period
7. To identify differences in bystander intervention and alcohol use pre- to post-campaign

Study Quality: not strong

Table 4. Results of study quality assessment

| Author, year | Selection bias | Study design | Confounders | Blinding | Data collection methods | Withdrawals and dropouts | Global rating |
|----------------------------------|----------------|--------------|-------------|----------|-------------------------|--------------------------|---------------|
| Bazzo et al., 2017 | Weak | Weak | Weak | Weak | Weak | Weak | Weak |
| Christensen et al., 2019 | Weak | Moderate | Strong | Strong | Weak | Weak | Weak |
| Johnson, 2016 | Strong | Moderate | Strong | Strong | Weak | Weak | Weak |
| Kessler & Kurtz, 2019 | Weak | Moderate | Weak | Strong | Strong | Weak | Weak |
| Li et al., 2017 | Strong | Moderate | Weak | Strong | Strong | N/A | Moderate |
| Miller et al., 2020 | Weak | Moderate | Weak | Strong | Weak | N/A | Weak |
| Parackal et al., 2017 | Weak | Weak | Weak | Weak | Weak | Weak | Weak |
| Rivara et al., 2012 | Weak | Weak | Strong | Strong | Weak | N/A | Weak |
| Saengow, 2019 | Moderate | Moderate | Strong | Strong | Weak | Weak | Weak |
| Schipani-McLaughlin et al., 2021 | Weak | Moderate | Strong | Strong | Strong | N/A | Moderate |
| Thompson et al., 2013 | Weak | Weak | Strong | Strong | Strong | N/A | Weak |

Media employed

- 8 studies used social media in combination with traditional mass media
 - These studies distributed campaign messages predominantly through posters and flyers, radio announcements, TV broadcasts, newspapers, and billboards
- Only 3 studies evaluated campaigns that relied solely or primarily on social media to reduce alcohol consumption
 - 2 campaigns included an additional website component, while one was entirely Facebook based
 - Only 1 campaign had international reach, through a partnership of organizations from thirteen countries that disseminated campaign-related photos and videos on Facebook and Twitter

Social media platforms used

- Facebook was by far the most common
 - In nine of the eleven studies (82%)
- Other platforms included Instagram (27%), Twitter (27%), YouTube (18%), and Myspace (9%)
- All but four studies used multiple social media platforms
- One study did not specify which social media platform was used

Population groups targeted

- 4 campaigns targeted general adult populations
- 1 campaign targeted young adults
- 4 campaigns targeted college students
- 2 campaigns targeted women, aiming to reduce alcohol consumption in pregnancy

Campaign exposure and engagement

- 5 studies provided quantifiable social media engagement
- Metrics included:
 - **Impressions** (the number of times a content has been displayed no matter if it was clicked or not)
 - Ranged from 3,694 to 3,943,605
 - **Reach** (the number of users who have seen the content)
 - Ranged from 9,213 to 30,253
 - **Clicks** (the number of clicks on the content)
 - Only one reported: 1,170 clicks
 - **Likes** (how often users interact with updates)
 - Ranged from 154 to 1,386

Social cognitive-changes

- Information/Awareness
 - Just one study explicitly indicated that 23.9% of the participants “learned something” when asked if the media campaign messages had any influence
- Attitudes/Beliefs/Intentions
 - 7 of 11 studies measured changes in attitudes, beliefs, and/or intentions related to alcohol consumption

Changes in Alcohol Consumption or Harms

- 8 of 11 studies measured behavior change related to alcohol consumption
- A temporary abstinence campaign in Thailand was effective:
 - 1/3 of current drinkers abstained completely during the 3-month period
 - 16.3% abstained for a certain period
 - 18.7% decreased their alcohol consumption
 - Had a participation rate of 67.2%

Changes in Alcohol Consumption or Harms

- 4 studies measured behavior changes related to drink driving:
 - 2 found no overall effect on self-reported driving after drinking
 - 1 found significant reductions in both self-reported driving and in drivers with BrACs ≥ 0.08 g/dl
 - 1 showed significant declines in drink driving prevalence rates
- 3 other campaigns conducted on college campuses also found mixed results:
 - 1 found a significant decrease in rates of binge drinking
 - 1 indicated one-quarter of respondents reported reducing the amount (28.8%) or occasions (30.8%) they drank
 - 1 detected no significant differences in quantity or duration of drinking

Discussion

- The ability of social media platforms to reach a broad audience through campaign messages via posts, photos, and videos is apparent
- The reach of the campaigns covered in this review ranged from thousands to millions of people, measured in terms of media impressions.
- However, measurement of the effectiveness of reach through social media in changing actual behavior remains limited, and studies that have attempted to measure this have mostly been of weak quality.

Discussion

- With the exception of 1 study, no studies were able to isolate the effects of social media alone on exposure outcomes such as information, awareness, attitudes, intentions, and/or behavior change
- The only measurements of audience reach included views, impressions, clicks, likes, shares, and/or comments on Facebook, Instagram, Twitter, or YouTube
- The evidence suggests that using social media as a public health tool to raise awareness and promote change in alcohol consumption is still relatively nascent and underdeveloped
- It is also far behind what is happening with other health issues, and with what the alcohol industry is doing

Guess who is losing?



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Subject: [REDACTED] - Decision on Manuscript ID [REDACTED]

Body: 18-Jul-2022

Dear Mr. Yeh:

Re. manuscript # [REDACTED] - "Social Media Campaigns to Reduce Population-level Alcohol Consumption: A Systematic Review"

Thank you for sending us this paper to consider for publication in [REDACTED]

As you may know, Senior Editors read all submissions when they come in to check that they are suitable for the journal, or determine if they are in some way uncompetitive. The reason we do this is to prevent authors having to wait unduly for a likely negative response, and to avoid overloading reviewers and our Associate Editors.

I am very sorry to tell you that we are not going to be able to process your paper further. In this instance, I sought the advice of two editorial colleagues before making this decision. The consensus was that this review was rigorously conducted, including its pre-registration and use of PRISMA guidelines for the write-up. The main concern was that the state of the literature is very preliminary; the overall quality of studies is weak, and the studies vary in terms of their designs and outcome measures, precluding quantitative evidence synthesis/meta-analysis. Thus, the implications for practice at this stage are unclear and the main takeaways are limited to directions for future research. In sum, the review is of high quality yet the area of research is currently under-developed.

Please be aware that editorial decisions are based on a number of considerations: good design, scientific quality and methodological rigor are central but are not the only factors. Other considerations include the extent to which the findings advance the field and the potential interest of our readers.

I appreciate that I bring disappointing news, but I hope that this response is helpful and I thank you for choosing [REDACTED]

Before closing, I want to apologize that this response did not reach you as quickly as I had intended; my review was delayed due to time away from the office. I apologize for this delay.

Yours sincerely,

Dr. [REDACTED]

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Closing thoughts

1. Where is the funding?
2. Where are the experiments?
3. Why are we basically silent or doing a terrible job in arguably the most powerful media of our time?

THANK YOU!

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