Swipe to Inhale: Exploring the influence of social media on intention to use cigarettes and e-cigarettes among nicotine naïve youth.

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Tianze Sun, PhD

Presenting on behalf of Dr Carmen Lim.
The National Centre for Youth Substance Use Research (NCYSUR), The University of Queensland, Australia.

The University Of Queensland
AUSTRALIA

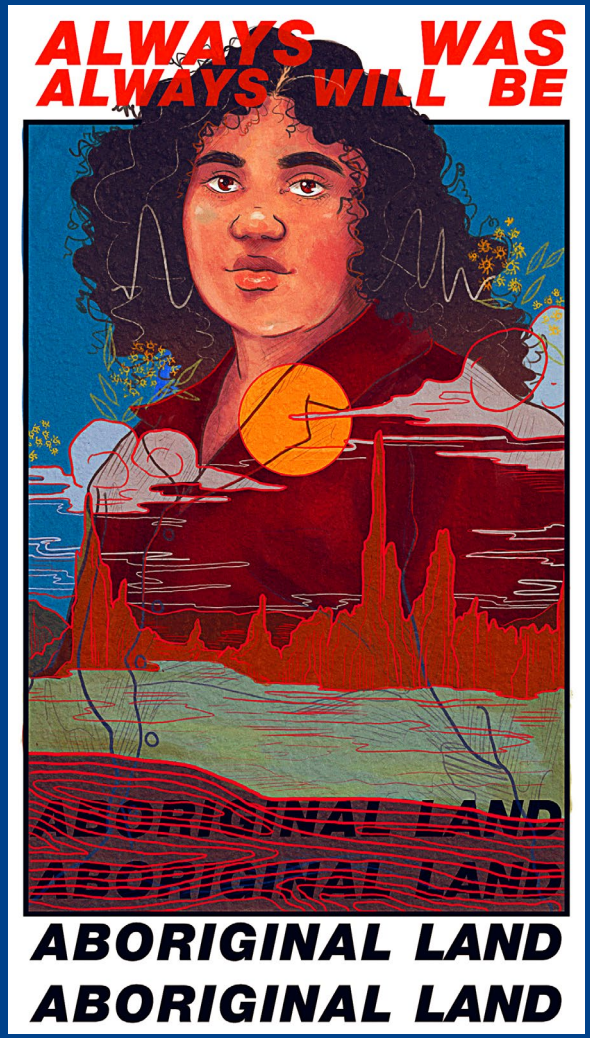
Acknowledgement of Country.

I acknowledge I am visitor on the lands of the Ngunnawal people.

I extend my acknowledgement to pay respect to the Traditional Custodians of Meanjin, the Jagera and Turrbal people, where this work took place.

I pay my respect to their lores, customs, creation spirits, the Elders, past and present.

I recognise that sovereignty has never been ceded and that ongoing colonial structures and policies still remain in place today.



Art by Charlotte Allingham @coffinbirth

Who are we?

- **The National Centre for Youth Substance Use Research** (NCYSUR) at the University of Queensland.
- Reduce harms associated with substance use.
- Focus on young people.
- Translate research findings to inform policy & practice.

Carmen – NHMRC Emerging Leadership Fellow.

Ben – PhD Student.

Giang – PhD Student.

Tesfa – Postdoctoral Research Fellow.

Jack – PhD Student.

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Where does my funding come from?

- NCYSUR is supported by the Department of Health and Aged Care.
- National Health Medical Research Council (NHMRC).
- **No conflicts of interest.**

Some faces behind the work I'm presenting today…

Dr. Carmen Lim

Dr. Tianze Sun

Em/Prof. Wayne Hall

Prof. Coral Gartner

Prof. Jason Connor

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RESEARCH BRIEF

Swipe to Inhale: Tobacco-Related Content on Social Media and Susceptibility to Tobacco Use

Carmen C.W. Lim, PhD,[1,2] Tianze Sun, PhD,[1,2] Wayne Hall, PhD,[1] Coral Gartner, PhD,[2] Jason P. Connor, PhD[1,3]

Introduction: Research has linked youth exposure and engagement with tobacco-related content on social media to behavioral changes; however, there is a lack of studies exploring the source and types of such content and their impact on youth's susceptibility to tobacco use. This study examined the association between the type and source of content posted on social media and susceptibility to tobacco use, defined as curiosity or intention to use tobacco or e-cigarettes.

Methods: Data were from the Population Assessment Tobacco and Health study, a nationally representative cohort study of U.S. youth (n=5,652). This analysis conducted in March 2024, focused on Wave 6 (2021), examining youth who used social media in the past month and did not use cigarettes or e-cigarettes. Multivariable logistic regression was performed to evaluate the associations.

Results: Of the youth who had used social media in the past month (88.7%), 61.4% had encountered tobacco-related content. Exposure to such content was associated with greater susceptibility to e-cigarette use (OR=1.49, 95% CI: 1.38−1.62) and cigarette use (OR=1.29, 95% CI: 1.17−1.43). Daily or near-daily exposure to tobacco-related content compared to non-exposed respondents was associated with greater odds of susceptibility to tobacco use (OR=1.53, 95% CI: 1.37−1.71). Only posts made by celebrities and influencers were associated with a greater susceptibility to tobacco use.

Conclusions: Regular exposure to tobacco-related content on social media, particularly content shared by celebrities and social media influencers, was associated with susceptibility to tobacco use. These findings underscore the need for targeted interventions to mitigate the effects of social media influencers on youth.

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Figure 1. David Bowie smoking during an interview on 'Good Morning America' 1976.

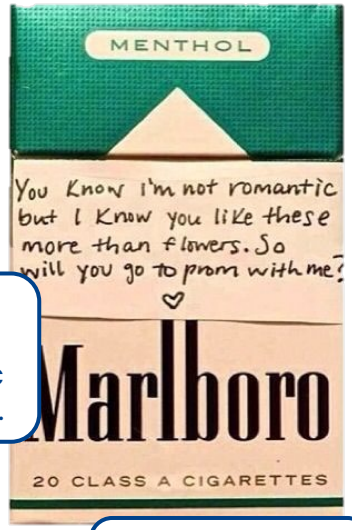
A brief history.

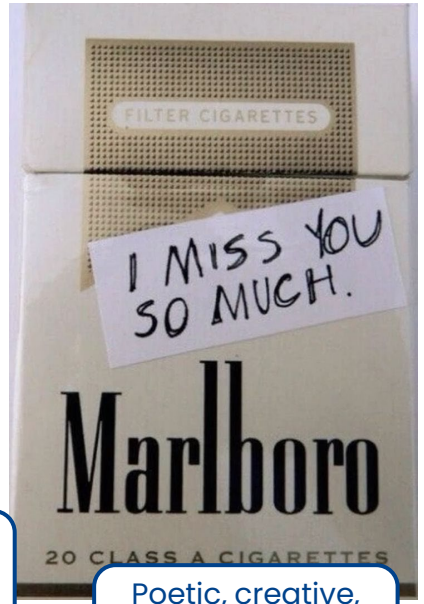
- **1960s-1970s:** tobacco advertising is everywhere (TV and radio).
- So common, that in 1970, Australians would see a tobacco ad every 8-14 mins on TV.
- **1973-1976:** Australia is one of the first countries to phase out direct cigarette adverting on radio and TV.
- **1992:** Tobacco Advertising Prohibition Act was passed.
- Youth smoking rates were declining due to these new regulations and public health campaigns.

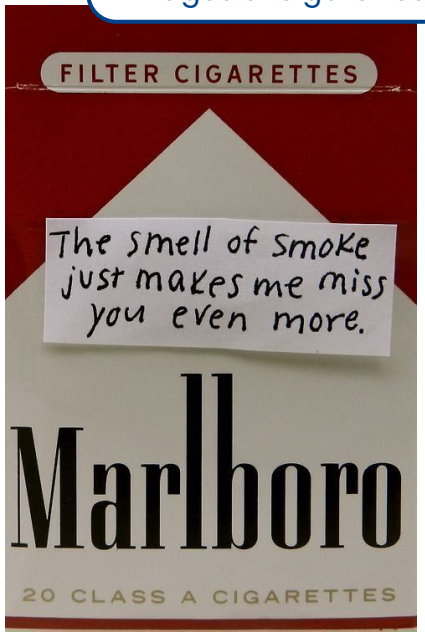
The rise of the Internet & Social Media.

- Created new promotional channels.
- Not direct advertising.
- Organic, user-driven content Emotional and lifestyle appeals.
- Prolific and widely accessible online.

Early 2010's, Tumblr flooded with aesthetic & romantic images of cigarettes.







Marlboro packs with hand-written notes.

Poetic, creative, and tied to counterculture.

Figure 2. Kim Petras with her vape on the 2023 Met Gala.

Celebrity & Influencer Era.

- Tobacco companies advertise cigarettes by paying celebrities & social media influencers to post images of cigarettes and smoking.
- Primarily targeted a low- and middle-income countries.
- Paid promotions reach millions of followers without disclosing that they were paid ads.
- Celebrities rated **higher on trustworthiness, expertise, attractiveness & credibility** compared to non-celebrities.

Freeman, B 11.11 Internet promotion In Greenhalgh, EM, Scollo, MM and Winstanley, MH [editors]. *Tobacco in Australia: Facts and issues*. 2019
Phua et al (2018). Celebrity-endorsed e-cigarette brand Instagram advertisements: Effects on young adults' attitudes towards e-cigarettes and smoking intentions. *Journal of Health Psychology*.

Charli XCX ‘brat’ album launch event.

No disclosure: difficult to determine if content is sponsored or organic.

High engagement, reaching massive audiences.

rosalia.vt

Following

Artistic presentation of Parliament cigarettes in a floral arrangement.

1.9 M

rosalia.vt normalizing making bouquets of the things your friends like ehhe

5 August · **See Original**

- Young people are exposed to vaping and smoking content online and on social media platforms.
- Young people, females, and lower socioeconomic groups show higher exposure rates.
- Strong correlation between social media exposure and tobacco use:
    - Higher odds of lifetime tobacco use.
    - Increased 30-day tobacco use.
    - Greater susceptibility among never-users.
- BUT, few studies have examined the **source** and **types** of smoking/vaping content young people are exposed to and **its impact on curiosity and intention to use** these products…

Relationship between exposure and use.

Sun et al., (2021). Vaping on TikTok. *Tobacco Control.*
Rutherford et al (2023) Viral Vaping: A systematic review and meta-analysis of e-cigarette and tobacco-related social media content and its influence on youth behaviours and attitudes. *Addictive Behaviours.*
Sun et al (2023) Longitudinal association between exposure to e-cigarette advertising and youth e-cigarette use in the United States. *Addictive Behaviors*

How do different types of smoking/vaping content – including what type of content they're seeing and who is posting it - affect susceptibility to use among young people?

How did we do this?

Dataset:

- Population Assessment Tobacco and Health (PATH), Wave 6 (2021).
    - Nationally representative longitudinal cohort of youth in the United States.

Participants:

- *N* = 5,652 participants.
- Youth aged 12-17 years.
- Never tried smoking or vaping.
- Used social media in the past 30-days.

1. **Perceived exposure to cigarette smoking or vaping content on social media.**

2. **Perceived frequency of exposure.**

3. **Type of content:**
    I. Posts of people using or talking about the product.
    II. Ads promoting the use of the products.
    III. Warnings about the product.
    IV. News.

4. **Source of content:**
    I. People they know in real life.
    II. Online friends they haven't met in real life.
    III. Celebrities/social media influencers.
    IV. Brands or sellers of products.
    V. News outlets
    VI. Other sources.

Exposure variables.

(in the past 30-days)

Susceptibility measured by combining :

- Curiosity about trying cigarettes or nicotine vapes.
  - *E.g., "Have you ever been curious about using an electronic nicotine product?"*
  - Responses ranged from "Very curious" to "Not at all curious"

- Intention to use cigarettes or vapes in the future.
  - E.g., *"Do you think you might use a tobacco product in the next year?"*
  - Responses from "Definitely yes" to "Definitely not".

How did we measure susceptibility?

Analysis.

Multivariable logistic regression models.

- To assess the relationship between exposure and susceptibility.
- Controlling for demographics
  - E.g., age, sex, academic performance, ethnicity.
- Results were weighted to account for the survey's complex design.

Results.

- **Most youth had used social media** in the past month (88.7%).
- **61.4% reported being exposed** to cigarette smoking or vaping related content on social media.

Exposure to cigarette or vaping on social media.	Susceptibility:		
	to vaping.	to smoking.	to both vaping & smoking.
(ref: not exposed)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Exposed	1.49 (1.38-1.62)	1.29 (1.17-1.43)	1.42 (1.31-1.54)

Table 1. Past 30-day exposure to tobacco & vaping related content online and susceptibility to use.

Results.

Past month exposure.

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Table 1. Past 30-day exposure to tobacco & vaping related content online and susceptibility to use.

Frequency of exposure to cigarette or vaping on social media.	Susceptibility:		
	to vaping.	to smoking.	to both vaping & smoking.
(ref: not exposed)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Daily or near daily.	1.57 (1.40-1.75)	1.41 (1.24-1.60)	1.53 (1.37-1.71)
At least a few times in the past month.	1.47 (1.35-1.60)	1.25 (1.12-1.39)	1.38 (1.26-1.50)

Table 2. Frequency of exposure to tobacco or vaping-related content online and susceptibility to vaping and smoking.

Results.

Frequency of exposure.

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Results.

Frequency of exposure.

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Results.

Type of content.

Type of cigarette or vaping content exposed on social media.	Susceptibility:		
	to vaping.	to smoking.	to both vaping & smoking.
(ref: not exposed)	OR (95% CI)	OR (95% CI)	OR (95% CI)
People using or talking about product	1.24 (1.11-1.41)	1.10 (0.98-1.24)	1.21 (1.09-1.34)
Ads promoting the use of products	1.08 (0.95-1.23)	1.05 (0.91-1.21)	1.06 (0.92-1.21)
Warning about the harms of the product	0.86 (0.77-0.96)	0.92 (0.81-1.05)	0.87 (0.78-0.98)
News about the products	0.93 (0.82-1.05)	1.02 (0.87-1.21)	0.96 (0.84-1.10)

Table 3. Type of tobacco or vaping content posted and susceptibility to use.

Results.

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Type of cigarette or vaping content exposed on social media.	Susceptibility:		
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(ref: not exposed)	OR (95% CI)	OR (95% CI)	OR (95% CI)
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Table 3. Type of tobacco or vaping content posted and susceptibility to use.

Results.

Source of content.

Source of cigarette or vaping content on social media.	Susceptibility:		
	to vaping.	to smoking.	to both vaping & smoking.
	OR (95% CI)	OR (95% CI)	OR (95% CI)
People they knew	1.24 (1.04-1.47)	1.11 (0.88-1.39)	1.21 (1.01-1.46)
Online friends	1.09 (0.90-1.32)	1.15 (0.92-1.44)	1.21 (1.01-1.46)
Celebrities and influencers	1.30 (1.09-1.56)	1.28 (1.07-1.54)	1.26 (1.05-1.51)
Brands	1.07 (0.89-1.28)	1.03 (0.84-1.28)	1.02 (0.85-1.22)
News	0.97 (0.80-1.18)	0.98 (0.79-1.22)	0.94 (0.77-1.15)
Other	0.87 (0.57-1.34)	0.79 (0.47-1.36)	0.84 (0.55-1.27)

Table 4. Source of tobacco or vaping content exposed to and susceptibility to use.

Results.

Source of content.

Source of cigarette or vaping content on social media.	Susceptibility:		
	to vaping.	to smoking.	to both vaping & smoking.
	OR (95% CI)	OR (95% CI)	OR (95% CI)
People they knew	1.24 (1.04-1.47)	1.11 (0.88-1.39)	1.21 (1.01-1.46)
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News	0.97 (0.80-1.18)	0.98 (0.79-1.22)	0.94 (0.77-1.15)
Other	0.87 (0.57-1.34)	0.79 (0.47-1.36)	0.84 (0.55-1.27)

Table 4. Source of tobacco or vaping content exposed to and susceptibility to use.

Current policies focused on banning paid ads are **insufficient**.

Regulators must address **organic posts featuring tobacco/vapes and those by celebrities and influencers**.

Implications for Policy & Practice.

1. Social media companies **must improve moderation efforts** by using automated tools to detect and manage both paid and organic tobacco/ vaping content (e.g., requiring disclosures and age restrictions).
2. Cross-border nature of social media presents challenges to regulation. **Global frameworks** for monitoring and addressing tobacco-related posts **are needed**.
3. **Public health campaigns** can use social media's reach and engage influencers to promote smoke/vape free lifestyles.

Thank you for listening and for inviting us to present.

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