

VIEWPOINT

The Need for Tobacco-Related Interventions to Incorporate Digital Media Literacy

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Tobacco use remains the leading cause of preventable morbidity in the United States. Tobacco use generally starts in adolescence and increases the likelihood of nicotine dependence, impaired brain development, and disability and disease reported throughout the life span.¹ Tobacco marketing is known to increase tobacco use among adolescents and young adults. The 1998 Master Settlement Agreement prohibited tobacco marketing targeting adolescents and young adults via billboards, point-of-sale retail locations, mail, and magazines.² However, digital platforms, defined here as social media, websites, and email, have granted the tobacco industry further access to prospective young consumers of tobacco products. Unfortunately, tobacco regulators have yet to implement comprehensive policies appropriate for this online environment. While the tobacco control policy landscape continues to evolve, health promotion programs and interventions are desperately needed to bolster tobacco-related digital media literacy among adolescents, young adults, parents, teachers, and public health organizations among other community stakeholders.

Given the widespread use of digital platforms by adolescents and young adults, tobacco companies have shifted to marketing on digital platforms to retain existing and attract new customers and spread unsubstantiated health claims about commercial tobacco products, ultimately driving sales. A growing literature has shown that exposure to digital tobacco content is associated with increased positive attitudes toward smoking, susceptibility to use tobacco, and tobacco use initiation and established tobacco use. For example, a recent meta-analysis found that participants exposed to tobacco content on social media compared with those unexposed were more likely to report tobacco use behaviors, with associations exacerbated among adolescents and young adults.³ Subtle marketing like product placement in music videos (see the DJ Khaled music video, "I'm the One," featuring Justin Bieber, Quavo, Chance the Rapper and Lil Wayne that, as of December 7, 2022, had been viewed more than 1.6 billion times on YouTube⁴) or the use of influencers on platforms like Twitch (ie, live streaming videos) or TikTok (ie, short-form videos) are also being used to promote tobacco products. This kind of promotion may go unrecognized as paid advertisements by digital media users.³ Thus, there is an urgent need to develop educational programs that address digital marketing practices used by tobacco companies to minimize the consequences of exposure to such content. Such programs may have downstream affects like curbing subsequent tobacco use. While tobacco-related digital media literacy is one important area, digital media literacy can be adapted to

other topics in the online environment, such as the impact of disinformation on vaccine-related beliefs.⁵

In the US, adolescents and young adults spend most of their waking hours interacting on digital platforms and being exposed to tobacco promotions and user-generated content that portrays tobacco in a positive valence and increases their risk of tobacco use initiation.³ As such, a comprehensive understanding of the role of digital platforms on shaping tobacco-related attitudes and behaviors is currently missing from the tobacco prevention education and intervention literature. Primack and colleagues⁶ developed the concept of smoking media literacy that may help digital media users evaluate tobacco advertising messages, empowering digital media users to actively evaluate incoming information rather than remain a passive target. Recent research adapted the original smoking media literacy measure to include vaping.⁷ More work is needed to show how tobacco companies use specific social media platforms and direct-to-consumer marketing techniques to communicate price-manipulated promotions and messages attempting to lower perceptions of harm from tobacco use. Several steps could help prevention programmers stay abreast of these high-risk areas of tobacco influence.

First, tobacco-related digital media literacy is needed to highlight the role of this content on shaping tobacco-related attitudes and behaviors. It is likely that parents, teachers, and other authority figures are unaware of the extent to which adolescents and young adults are exposed to tobacco content online, including tobacco advertisements and user-generated posts. Further, those digital media users who are exposed to such content are likely to be exposed to higher volumes of similar tobacco content in the future by proprietary machine learning algorithms. In other words, viewing tobacco content begets further exposure to tobacco content. As such, tobacco-related digital media literacy interventions are needed to show how the user experience can purposefully or inadvertently shape positive attitudes toward tobacco brands, products, and behaviors.

Second, the tobacco marketplace is evolving with new tobacco products and brands, including sleek product design features for e-cigarettes, concealable oral tobacco products like nicotine pouches and gum, and youth-oriented concept flavors (eg, sunset lava). Tobacco companies are using digital platforms to rapidly disseminate promotions, free shipping offers, and loyalty programs to increase intentions to buy these products. Interventions focused on tobacco-related digital media literacy could create awareness about emerging tobacco products and describe how they are being marketed in the digital environment. Increased awareness of such marketing could lead to the necessary skills

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required to refuse/avoid the uptake of tobacco by adolescents and young adults.

Third, young adults are a target population for tobacco industry marketing and are at the greatest risk of tobacco use escalation and entrenchment.⁸ Tobacco-related digital media literacy interventions could be tailored to the young adult developmental experience with the goal of preventing susceptibility to use tobacco among never users or preventing escalation of tobacco use. Intervention content could teach young adults positive psychological skills to cope with problematic social media use and tobacco use behaviors and help young adults manage the stress of upcoming role transitions (eg, starting a new job, school, romantic relationships) in adulthood.

Fourth, validated measures are needed to assess exposure to digital tobacco marketing and understand the causal associations between exposure to digital tobacco marketing on tobacco use, and vice versa. Researchers should measure exposures from image-based (eg, Instagram) and audiovisual (eg, TikTok) platforms and examine the differential impact on tobacco use. Additionally, measures should capture exposure to prevalent promotional themes, such as flavored promotions, holiday specials, and buy-one-get-one free offers on tobacco use. The development of validated mea-

asures informed from social media surveillance may lead to better tobacco-related digital media literacy intervention design and evaluation. Measures can be modified to include the digital marketing practices from cannabis and alcohol companies whose advertisements may also impact health.

The digital environment offers tobacco companies the opportunity to inexpensively and rapidly market products to young digital media users. To prevent the harms of digital tobacco marketing and create awareness about digital tobacco exposures and tobacco use among adolescents and young adults, educational programs and interventions are needed to help priority populations build skills to counteract marketing and health-related misinformation. Digital media literacy is a multidimensional concept and future research should be designed around improving not only evaluation of media messages, but also understanding how and why digital and social media posts are produced. For example, interventions could incorporate a module to provide awareness about effective social media marketing strategies (eg, using influencers) that are known to increase views, engagement, and convert brand awareness into sales. Interventions that help adolescents and young adults develop the tools to be critical consumers of information, may ultimately help improve their health and well-being.

ARTICLE INFORMATION

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