

# Digital Media and Risks for Adolescent Substance Abuse and Problematic Gambling

Dan Romer, PhD,<sup>a</sup> Megan Moreno, MD, MEd, MPH<sup>b</sup>

**abstract** Digital media provide increased opportunities for both marketing and social transmission of risky products and behavior. We briefly review what is known about adolescent exposure to favorable presentations of addictive substances, such as alcohol, tobacco, and marijuana, as well as behaviors such as gambling, on social and other online media. Our understanding of these influences and whether they require greater regulation is still developing, and recommendations for future research to address these gaps in our understanding are described. Potential strategies to intervene in these environments to protect adolescents and young adults from the adverse effects of these products are described, as well as future challenges for developing interventions.



*<sup>a</sup>Annenberg Public Policy Center, University of Pennsylvania, Philadelphia, Pennsylvania; and <sup>b</sup>Division of Adolescent Medicine, Department of Pediatrics, Seattle Children's Hospital, University of Washington, Seattle, Washington*

The analysis, conclusions, and recommendations contained in each paper are solely a product of the individual workgroup and are not the policy or opinions of, nor do they represent an endorsement by Children and Screens: Institute of Digital Media and Child Development or the American Academy of Pediatrics.

All authors contributed equally to the writing and conceptualization of the paper and approved the final manuscript as submitted.

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Address correspondence to Dan Romer, PhD, Annenberg Public Policy Center, University of Pennsylvania, 202 S 36th St, Philadelphia, PA 19104. E-mail: dan.romer@appc.upenn.edu

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Adolescents and young adults are uniquely vulnerable to the effects of social media in particular and digital communication in general: they are at once early adopters, nearly ubiquitous users, and highly susceptible to peer influences.<sup>1</sup> Our workgroup considered the risks of digital communication in regard to enhanced exposure to favorable presentations of harmful substances, such as alcohol and tobacco, on social media and of increased opportunities for engaging in behaviors that can lead to addiction, such as online gambling.

Alcohol use in adolescents and young adults is of particular concern because it is involved in many forms of injury, both unintentional (eg, motor vehicle crashes, violence victimization) and intentional (eg, self-inflicted injury).<sup>2</sup> Although rates of alcohol use initiation have declined over the last 2 decades,<sup>3</sup> early adolescent progression in use of alcohol and other drugs is associated with later incidence of substance use disorder.<sup>4</sup> Past studies have described content and posting timing of alcohol use on sites such as MySpace, Facebook, and Twitter.<sup>5</sup> In particular, displays of alcohol use on social media have been found to be indicative of personal use among young people<sup>6</sup> and are likely to enhance normative perceptions among followers of those posts.<sup>7</sup> Marketing of alcohol products is also common on social media. Many alcohol brands have a presence on social media, giving them the opportunity to connect with young people and develop brand loyalty.<sup>8</sup> Although marketing programs may require age verification before allowing users to access online content, those restrictions are difficult to enforce and can easily be circumvented.<sup>8</sup>

Use of cigarettes by adolescents has declined in recent years.<sup>3</sup> Nevertheless, according to a recent survey, ~21% of youth ages 12 to

17 have tried a tobacco product, including use of traditional cigarettes (13%), electronic cigarettes (11%), cigars (8%), hookahs (7%), and smokeless tobacco (4%).<sup>9</sup> A major source of information about these products is available online, especially on the widely accessed YouTube video platform.<sup>10</sup> Researchers have confirmed that, in addition to smoking cessation content, YouTube contains a multitude of protobacco messages.<sup>11</sup>

Although less is known about the online presence of content regarding illegal drugs, there is growing evidence that marijuana use has increased among both adults and young people.<sup>12</sup> The increasing legalization of marijuana in states and jurisdictions will undoubtedly add to its presence online. While marijuana advertising on social media is currently not allowed, marijuana businesses can create “business pages” to promote content and engage with users on social media, and these business pages are accessible to social media users of any age. The authors of at least one study have examined the presence of marijuana messages in social media,<sup>13</sup> with a focus on Twitter, an online social messaging system that is increasingly popular with young people.<sup>1</sup> The authors of the study found that most of the messages contained favorable sentiments about the substance and that 59% of those tweets were estimated to be sent by youth less than the age of 20. Many of the senders of these messages had large numbers of followers, suggesting that such messages can reach and influence large networks.

Adolescent use of online gambling sites has become an issue of international concern.<sup>14</sup> Online gambling proliferated in the United States during the 2000s, during which time it was generally considered illegal.<sup>15</sup> Unfortunately, research on the prevalence of online gambling among adolescents in

the United States has been inactive since 2010, when the Annenberg Public Policy Center last tracked the practice. Despite not involving an addictive substance, inability to control gambling is regarded as a behavioral addiction in the psychiatric literature.<sup>16</sup> Adolescents who engage in online gambling exhibit heightened levels of problematic gambling symptoms,<sup>17</sup> making this form of gambling particularly worrisome. In addition, there is increasing evidence of simulated forms of gambling not involving money proliferating on social media, such as Facebook.<sup>18</sup> These games may provide a gateway to encourage adolescents to progress to actual online gambling.<sup>19</sup> Just as for drug use, early progression in gambling is a risk for later problems in controlling this behavior.<sup>20</sup> There is also evidence that excessive use of alcohol is comorbid with the development of gambling problems.<sup>17,20</sup>

## CURRENT STATE AND FUTURE RESEARCH

Alcohol researchers in particular have begun to measure the exposure to and impact of alcohol-related content on social media and to develop intervention mechanisms for these media platforms. However, the ways in which these social media exposures may be similar to, different from, or reinforcing of their offline counterparts are not yet fully understood. As the field of social media research is still in its infancy, further work is needed in several arenas.

First, research that fully harnesses the social aspects of social media by studying interactions between peers, distribution of content through a social network, or interactions between adolescents and adults are needed.<sup>21</sup> These types of studies would help deepen our understanding of how alcohol

and other substance use content is distributed and shared through networks, and they could potentially identify intervention partners who have access to and are willing to confront adolescents and young adults regarding references to alcohol and other drugs.

Second, the interactive nature of social media sites provides new opportunities for interventions. Such interventions must be developed with an understanding of the privacy settings within each network. Only individuals who are able to view the content and are comfortable with communicating about it would be able to conduct such an intervention. Preliminary work has explored communication strategies for these encounters and potential intervention opportunities.<sup>22</sup> However, further work is needed to understand how this knowledge can be translated into clinical practice or educational interventions appropriate for different settings, such as schools, clinics, or universities. In the case of online gambling, potential interventions include pop-ups that remind users of the time and money they have just spent gambling online.<sup>23</sup> There is also evidence that online counseling may be effective in helping youth to reduce the use of substances, and this may also be a potential mechanism to intervene with youth at risk for gambling problems.<sup>24</sup>

Third, research is needed into the extent to which young people are exposed to advertising from alcohol and tobacco manufacturers across social media sites. The same social marketing approaches that may be used to promote alcohol and other legal drugs on social media can perhaps be harnessed to promote abstinence before age 21.<sup>25,26</sup> In these ways, the new landscape of social media can be understood and perhaps used to reduce the negative consequences of alcohol, tobacco, and other drug use among youth.

Researchers at the Annenberg Public Policy Center have recently examined popular protobacco content in YouTube videos with the aim of identifying and classifying misleading or otherwise tobacco-promoting messages that frequently appear there.<sup>27</sup> They developed a coding scheme that could reliably sort the claims in these videos, with the aim of developing messages that can be posted online to debunk these “patterns of deception.” An initial test of the effects of these messages revealed that young people ages 18 to 24 did not find the claims credible; nevertheless, their expectations about the pleasurable nature of the various types of tobacco use featured in the videos were enhanced, with stronger effects among current tobacco users.<sup>27</sup> Thus, there is a risk that such content, which is largely unregulated, may serve as a vehicle for promoting tobacco products, especially among those already favorably disposed to the use of those products. Future directions for the study of misleading content on YouTube can apply the same methods to the study of alcohol use.

It is not known how many young people are currently using online gambling sites, the likely sites they are using, and any adverse effects of this use. In 2011, the Department of Justice ruled that the laws pertaining to some forms of gambling, such as sports betting, may not apply to online forms of casino games, such as poker. Nevertheless, with a few exceptions, few states have approved the practice. Online gambling is legal in some provinces in Canada and the experience there provides useful experience for how such activity can be controlled. For example, Ontario hosts its own online gambling programs. This gives the government the responsibility to safeguard the interests of gamblers. For example, age restrictions are enforced to reduce the chances of adolescent use of gambling sites, and practices that

might defraud users are unlikely to occur on such sites. Thus, concerns about robot players and illegitimate access to players’ hands are less likely when the government runs gambling sites. In addition, various limits on gambling activity, such as time and money spent per session, are made available. In contrast, privately run gambling sites are more apt to rely on revenue derived from problem gamblers.<sup>28</sup>

The Ontario example suggests that, at present, gamblers who use online sites in the United States may not enjoy the protections that gamblers in Canada do. For example, online gambling in New Jersey is licensed by the state but not run by it. As a result, gamblers must depend on the integrity of casinos. Thus, there is strong need for research to monitor the prevalence and potential ill effects on inexperienced adolescent users. To the extent that online sites are benefiting from sales to adolescents, greater regulatory oversight would be appropriate.

## RECOMMENDATIONS

In future studies involving social media sites, attention to 2 factors will be critical. One is attention to privacy settings on sites and users’ expectations for protection of their confidentiality. Previous work has illustrated that older adolescents are willing to interact with others, such as parents or other adult role models, regarding their displayed health risk behaviors on social media sites.<sup>29</sup> However, they are wary of interacting with those they don’t know, limiting the potential of a researcher engaging with youth via social media. In addition, social media sites may vary in users’ expectations for privacy, and terms of use may restrict what researchers can do when interacting with users. A second critical factor is attention to involving social media sites with the same ethical and

regulatory rigor that is expected in offline studies involving human subjects. For example, obtaining parental consent for studies involving interaction with adolescents can pose challenges on social media.<sup>30</sup> Several guidelines have been published that identify best practices in study design and working with institutional research boards.<sup>30</sup>

On the basis of this review, there is great need for a wide-ranging research agenda to inform our understanding of how the use of social media and other online sites, such as gambling venues, are influencing adolescent uptake and progression of potentially addictive drugs and behaviors. There is also the opportunity to use online resources

to reach and assist adolescents and parents to avoid the progression of these behaviors. With so many adolescents engaging with each other and with marketers of addictive products, the opportunity for health promotion appears sizable. This is a challenge that hopefully will be engaged in the near future.

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