

# #Alcohol: Portrayals of Alcohol in Top Videos on TikTok

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**ABSTRACT. Objective:** The purpose of this study was to characterize the content and themes present in user-generated TikTok videos portraying alcohol. **Method:** We captured the 100 most popular videos including the #alcohol hashtag on the popular social networking site TikTok. We used an iterative process to codebook development, resulting in codes for user sentiment toward alcohol, type of alcohol depicted, brand references, degree of alcohol use, and positive/negative associations with alcohol use. Videos were independently double coded, evaluated for inter-rater agreement, and adjudicated if differences were present. **Results:** The videos in our sample were collectively viewed 291,999,100 times. The vast majority (98%) of videos expressed pro-alcohol sentiment. Nearly half of videos (41%) were guide videos demonstrating

drink recipes. The majority of videos (72%) included liquor. Consuming multiple drinks quickly was depicted in more than half of videos (61%), whereas intoxication (13%) was exhibited less frequently. Positive associations with alcohol were prevalent; 69% of videos conveyed positive experiences with alcohol, 55% of videos contained humor, and 45% included associations of alcohol with camaraderie. Negative associations with alcohol were rarely portrayed (4%). **Conclusions:** Top alcohol-related videos on TikTok are heavily viewed. Their contents demonstrate a propensity to promote rapid consumption of multiple drinks and to juxtapose alcohol use with positive associations such as humor and camaraderie, while rarely depicting negative outcomes associated with hazardous alcohol use. (*J. Stud. Alcohol Drugs*, 82, 615–622, 2021)

ALCOHOL REMAINS the most commonly used and misused substance among American youth and young adults (Office of the Surgeon General, 2016). Approximately 1 of every 5 American youth ages 12–20 years reports regular alcohol use and more than 1 in 10 reports binge drinking behaviors over the previous month (Substance Abuse and Mental Health Services Administration, 2019). Youth drinking is linked to multiple negative health consequences, including injury, disruption of normal development, suicide, and homicide (Office of the Surgeon General, 2016).

Increased exposure to alcohol marketing/portrayals among youth is linked to earlier drinking initiation and greater levels of overall alcohol consumption (Anderson et al., 2009; Barry, 2016; Jernigan et al., 2017; Lobstein et al., 2017). The theoretical underpinning of this relationship can be explained by the Message Interpretation Processing model (Austin, 2007; Kupersmidt et al., 2012). Based on elements of the social cognitive theory (Bandura, 1986) and theory of reasoned action (Fishbein & Ajzen, 1975), the Message Interpretation Processing model posits that upon exposure to a media portrayal (e.g., alcohol-related content), an individual assesses the message using both logical thinking skills and emotion. Essentially, logical thinking skills, such as perceived realism (i.e., the overall believability of the message) and perceived similarity (the degree to which the viewer personally relates the portrayal to their own experi-

ences), are used in combination with emotional appraisal (e.g., desirability of the message) to establish an individual's identification with a media portrayal. Identification with the message informs expectancies regarding the product or behavior (e.g., alcohol use) and, as a result, predicts intentions to engage in the behavior.

In line with social learning theory, modeling of alcohol use in a glamorizing manner in the media can lead to positive norms and expectations with regard to alcohol consumption, leading to a greater likelihood for engagement in alcohol use and misuse (Moos, 2007). Research on associations between alcohol-related media exposure and youth alcohol use have largely focused on traditional media (e.g., print, films, radio, television) (Dal Cin et al., 2008; King et al., 2017; Lillard et al., 2018). However, there is growing recognition for the need to examine alcohol-related content posted on online and social media platforms (Barry et al., 2018a; Jernigan et al., 2017; Lobstein et al., 2017), given the increased use of social media platforms (e.g., YouTube, Instagram, Twitter) among youth. Nearly half (45%) of all U.S. teens report being “almost constantly” online, and 9 of 10 report being online at least several times a day (Anderson & Jiang, 2018). Adding to concerns is a body of evidence demonstrating that online social networks contribute to the spread of health behaviors—including drinking behaviors—through social contagion (Christakis & Fowler, 2013; Rosenquist et al., 2010).

On YouTube, videos depicting alcohol intoxication as humorous and attractive are frequently viewed (Primack et al., 2015). User comments posted to Twitter reflect an overwhelmingly positive sentiment toward alcohol, commonly

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referencing frequent alcohol use, high quantity use (i.e., heavy drinking), and desires/need for a drink (Cavazos-Rehg et al., 2015). Prior investigations have also documented alcohol brand marketing content being sent directly to underage users on Instagram, and underage users being able to fully view and interact with alcohol marketing content on Twitter (Barry et al., 2016). Although studies have provided useful public health insights through examining alcohol-related portrayals and content on social media platforms, such as YouTube, Instagram, and Twitter (see Barry et al., 2016; Cavazos-Rehg et al., 2015; Primack et al., 2015), alcohol portrayals in videos on TikTok have yet to be investigated.

TikTok—a video-sharing social networking service—has experienced rapid growth in popularity among youth and young adults (Clement, 2020). As of August 2020, TikTok had approximately 100 million monthly active U.S. users and 50 million daily active users (Sherman, 2020). Among American TikTok users, 32.5% are between ages 10 and 19, and 62% are under age 29 (Sherman, 2020). Although TikTok's community guidelines ask users not to post "content that depicts minors consuming, possessing, or suspected of consuming alcoholic beverages, drugs, or tobacco" (TikTok, 2020), enforcement of such policies on other social media platforms is lacking (Barry et al., 2016, 2019). Given the large portion of underage TikTok users, impact of alcohol marketing/portrayals on drinking behaviors, and increasing trend of disseminating alcohol marketing/portrayals via emerging social media, this investigation characterized the content and themes present in user-generated TikTok videos portraying alcohol.

## Method

### *Data collection*

All procedures were vetted and approved by the university's Institutional Review Board (IRB). TikTok organizes video content using hashtags, which organizes content by category and helps users find and share videos. Given our interest in general alcohol-related portrayals in videos on TikTok, we conducted a search on TikTok using a drinking-related keyword most commonly used on Twitter (i.e., #alcohol; Cavazos-Rehg, 2015). With 1.7 billion views at the time of this writing, the #alcohol video page on TikTok is one of the most popular alcohol-related hashtags on TikTok. Thus, we opted to use videos hosted on the #alcohol page on TikTok for subsequent analyses. We accessed and interacted with videos on the #alcohol page on TikTok without encountering any sort of age verification process; we did not create a user account, and we were not required to login to a user account to view and interact with any of the content. For coding purposes, we assessed the 100 most popular videos (based on the number of likes) as of September 17,

2020. Previous investigations have used similar strategies in exploring content on TikTok (Ostrovsky & Chen, 2020) and YouTube (Primack et al., 2015). When entering the #alcohol video page on TikTok, these are the first 100 videos presented to users. All video links were retained to ensure data integrity and facilitate analysis. We also accessed profile pages for users posting these videos, where we could see their number of followers and likes, as well as additional videos they had previously posted.

### *Codebook development and coding procedures*

Alcohol-related coding categories were adapted from prior studies exploring portrayals of alcohol intoxication in videos on YouTube (i.e., alcohol depiction, degree of alcohol use, brand references, negative associations with alcohol use; Primack et al., 2015) and content likely to appeal to youth in video-based alcohol advertisements (i.e., positive associations with alcohol use; Padon et al., 2018). Two researchers with alcohol content expertise examined 10 pilot videos and discussed proposed alcohol-related coding variables before adding, deleting, and refining codes as necessary.

A final codebook with operational definitions for each code was developed to aid the coding process. Coders were trained with regard to definitions and examples for each code and how to navigate the data file (i.e., accessing videos and necessary information for each coding variable) before coding 10 pilot videos. Coding differences for pilot videos were discussed with the codebook developer until agreement was reached. After this process, all 100 videos in our sample were independently double coded, and discrepancies were discussed and adjudicated. Initial interrater reliability between the two coders for alcohol-related variables was acceptable (Cohen's  $\kappa = .72$ ). Discrepancies between coders were discussed between the coders until agreement was reached.

### *Measures*

Final coding categories broadly represented five categories: user sentiment toward alcohol, type of alcohol depicted and brand references, degree of alcohol use, positive associations with alcohol use, and negative associations with alcohol use (Table 1). Additionally, several video (date posted, number of views, comments, likes, and shares) and user (user name, number of followers and likes) characteristics were also documented.

*User sentiment.* User sentiment toward alcohol was a binary variable assessed as pro- (user is in support of alcohol use or expresses enjoying alcohol use) or anti-alcohol (not supportive of alcohol use).

*Alcohol depiction.* This category included six binary variables. The first five variables assessed whether various

TABLE 1. Definitions for categorical coding variables and examples

Code	Definition	Example content
<i>User sentiment</i>		
Pro-alcohol	Video expresses pro-alcohol sentiment or indicates the user enjoys using alcohol.	<ul style="list-style-type: none"> <li>• A young man demonstrates a drink recipe (Tequila and White Claw Hard Seltzer) and says it will “fuck you up.”</li> <li>• A young man is at a grocery store describing a glass advertised to hold a whole bottle of wine. He buys two of them. The video then cuts to the young man in his home where he demonstrates that the glass indeed holds a whole bottle of wine. He is very excited and shouts “Oh, wow! You heard it here first!”</li> </ul>
Anti-alcohol	Video express anti-alcohol sentiment, or the user indicates he/she is not supportive of alcohol use.	<ul style="list-style-type: none"> <li>• A young man describes facts about alcohol: (1) every 10 seconds, one person dies from alcohol; (2) when you’re very drunk, your brain can’t form memories; (3) your genetics might make you more vulnerable to alcoholism.</li> </ul>
<i>Degree of alcohol use</i>		
Intoxication	Portrays observable signs of intoxication, such as slurred speech, impaired psychomotor function, and/or reduction of social inhibition.	<ul style="list-style-type: none"> <li>• Three women record themselves talking into a mirror throughout a night of drinking. After each video cut, they report how many shots of liquor they have taken at time of recording. The final recording captures the women as they laugh and demonstrate slurred speech, while stating they have taken 6 shots.</li> <li>• A young male wakes up in a grass field with his body painted green and chest partly shaved. He describes how he blacked out last night and doesn’t know what happened to him. He realizes his necklace is missing and finds it in a tree. He then says, “I don’t know what happened last night, but I wanna do it again.”</li> <li>• Video records a group of middle-aged women throughout their day-long drinking event. The video starts with the caption “these girls met 20 years ago at a bar in the Keys.” The women start drinking at one of their homes, then are seen leaving in a vehicle. They are picked up 2.5 hours later after having several drinks and are acting intoxicated, at times laughing uncontrollably and acting incoherent. A caption reads that they have been “blacking out together for 2 decades.”</li> </ul>
Multiple drinks	A representation of chugging, drinking multiple drinks, implying multiple drinks were consumed, or similar behavior	<ul style="list-style-type: none"> <li>• A young woman describes a product called “miracle berries” that turn sour things to sweet. She states her “alcoholic ass” wanted to see if the berries worked with alcohol to make shots of liquor taste better. She then takes a shot of vodka before eating the berries and takes another shot after eating the berries. Then, she suggests the berries helped to mask the taste of the vodka so well that she proceeds to chug from the bottle.</li> <li>• Video is a duet. The first video captures a male demonstrating how to correctly “shotgun” a beer. Video two captures a female following the same procedure with a flavored malt beverage.</li> <li>• Video features a cartoon animation of a young man and his cousin sitting on a couch (voice-over narration). The young man is pictured drinking a Four Loko. He mentions his cousin has given it to him, and it is his first time to consume one. He says “damn, it’s kinda good, you sure this has alcohol?” He then proceeds to drink half of the Four Loko can, stating that he doesn’t think it has alcohol and tastes like Kool-Aid. Thus, he drinks the rest of the entire can. He explains the Four Loko can has the equivalent of 5 shots of vodka, and he has consumed the entire can within 5 minutes. The video ends as he describes anticipating for the liquor to kick in.</li> </ul>

Table continued

types of alcohol (beer, wine, distilled spirits, flavored malt beverage, other alcohol) were portrayed within each video. A final binary variable described whether an alcohol brand name was specifically referenced in the video.

*Degree of alcohol use.* This category included two binary variables intended to examine evidence or portrayals of intoxication and consuming multiple standard drinks quickly. The intoxication code assessed whether there were outward, visible signs of and/or portraying of slurred speech, awkwardness of movement, or reduced social inhibition. The multiple drinks variable was associated with representations of chugging, drinking multiple drinks, or implying multiple drinks were consumed.

*Positive associations with alcohol use.* Three binary codes accounted for whether positive associations with alcohol use

were present (humor, positive experiences, camaraderie). Humor was coded based on whether the video content was likely to be humorous to the intended audience. Positive experiences were based on depictions of users having positive experiences (e.g., smiling, laughing, dancing, or relaxing) while drinking or referring to drinking. Finally, camaraderie was coded for based on associations between alcohol use and friendship, familiarity, closeness with others, and party scenes.

*Negative associations with alcohol use.* Negative associations with alcohol use were coded as a binary variable based on whether an alcohol-related consequence was referenced. A second categorical variable noted the type/s of alcohol-related consequences contained in the content (i.e., cognitive, economic, emotional, legal, physical, sexual, social).

TABLE 1. *Continued*

Code	Definition	Example content
<i>Positive associations</i>		
Humor	Containing content likely humorous to the intended audience	<ul style="list-style-type: none"> <li>Two young male friends act out a drunk driving scene, while another records the interaction and laughs throughout. One of the friends plays the role of a police officer and asks the friend portraying the drunk driver if he has been drinking. The driver states he only had two, but he is clearly either intoxicated or acting intoxicated. He then procures alcohol from the back seat and offers a beer to the friend portraying an officer. The "police officer" asks the driver to step out of the car and to say his ABCs backwards. The driver steps out and is still drinking from an open alcoholic beverage. He says his ABCs, but not backwards as requested. The "officer" then asks the driver to walk in a straight line. The driver stumbles and is about to fall on the road as the video ends.</li> <li>Video is a duet. The first video pictures a young female with the caption "sing when you see an alcohol you've puked from." Then, her video frame presents a slide show of various types of alcohol with music playing in the background. The second video depicts a young man dueting with the first video, in which he sings and laughs in response to the types of alcohol shown that he's puked from.</li> <li>A grandmother is purported to be babysitting when she busts her underage grandchildren having a party. Rather than being upset, she joins the party and is depicted chugging a hard seltzer as the minors at the party cheer her on.</li> </ul>
Positive experiences	Depicts users having positive experiences while drinking or referring to drinking	<ul style="list-style-type: none"> <li>Video starts with an elderly woman complaining because she thinks there was not enough alcohol in her drink. Then, the video cuts to the grandma dancing and laughing with other women to music under the caption "also me one drink later."</li> </ul>
Camaraderie	Connotes friendship, familiarity, closeness with others, or party scenes	<ul style="list-style-type: none"> <li>A father and son bond, as the son films his father demonstrating a drink recipe (whiskey, beer, simple syrup, lemon juice).</li> </ul>
<i>Negative associations</i>		
Alcohol-related consequences	Depicts user describing or experiencing an alcohol-related negative consequence (e.g., hangover, physical injury, economic, legal, emotional, social, sexual, etc.)	<ul style="list-style-type: none"> <li>A young man is filming himself in the morning after a night of drinking. He describes how he woke up "hammered" instead of hung over and how he wanted to be drunk, but now he doesn't. He then accidentally falls down the stairs, slamming into the wall on the way down. The caption reads "no fucking way I filmed this." The video is intended to be humorous to the audience.</li> </ul>

### Analysis

This study used a qualitative content analysis approach, capturing both quantitative descriptions of the data and representative qualitative examples for coded variables. Descriptive analyses included the calculation of means and standard deviations for continuous variables and frequencies and percentages for categorical variables.

### Results

The 100 most liked #alcohol videos on TikTok were collectively viewed 291,999,100 times ( $M = 2,919,991$ ;  $SD = 2,075,337.29$ ) and accounted for 40,418,100 likes ( $M = 404,181$ ;  $SD = 269,973.63$ ), 285,208 comments ( $M = 2,852.08$ ;  $SD = 3,729.73$ ), and 2,058,068 shares ( $M = 20,580.68$ ;  $SD = 20,307.02$ ). The user accounts associated with posting the videos amassed 32,465,657 followers ( $M = 324,656.57$ ;  $SD = 753,440.57$ ) and 916,986,300 likes ( $M = 9,307,863$ ;  $SD = 26,261,394.36$ ). Videos were posted between July 2019 and August 2020. Data on likes, comments, and shares are accurate as of September 17, 2020.

The overwhelming majority (98%) of videos expressed pro-alcohol sentiment (Table 2). Nearly half of the videos in this sample (41%) were guide videos demonstrating various drink recipes. The majority of videos (72%) included distilled spirits in the video, followed by flavored malt beverages (23%), beer (16%), and wine (10%). A total of 71% of videos included an alcohol brand reference. Consuming multiple drinks quickly was captured in more than half of the videos (61%), whereas intoxication (13%) was captured less often. For the intoxication subsample of videos, more than half portrayed slurred speech (54%); impaired muscle control, such as stumbling, staggering, or impaired gait (62%); and reduced social inhibition (54%). Positive associations with alcohol were prevalent; 69% of videos conveyed positive experiences with alcohol, 55% of videos contained humor, and 45% included associations of alcohol with camaraderie. Content likely to be humorous to the intended audience was included in all videos portraying intoxication (100%) and more than half of videos depicting rapid consumption of multiple standard drinks (56%). On the other hand, negative associations with alcohol (i.e., alcohol-related consequences) were rarely portrayed (4%)

TABLE 2. Video content for top 100 #alcohol videos on TikTok

Variable	n (%)	Description
<i>User sentiment</i>		
Pro-alcohol	98 (98%)	Video expresses pro-alcohol sentiment or indicates the user enjoys using alcohol.
Anti-alcohol	2 (2%)	Video express anti-alcohol sentiment, or the user indicates he/she is not supportive of alcohol use.
<i>Alcohol depictions</i>		
Beer		
Yes	16 (16%)	Was beer present in the video?
No	84 (84%)	
Wine		
Yes	10 (10%)	Was wine/champagne present in the video?
No	90 (90%)	
Liquor		
Yes	72 (72%)	Was liquor present in the video?
No	28 (28%)	
Flavored malt beverage		
Yes	23 (23%)	Was a flavored malt beverage (e.g., White Claw, Four Loko, Smirnoff Ice, or Twisted Tea) present in the video?
No	77 (77%)	
Other alcohol		
Yes	1 (1%)	Was another type of alcohol present in the video?
No	99 (99%)	
<i>Degree of alcohol use</i>		
Intoxication		
Yes	13 (13%)	Are there outward signs of and/or portraying of slurred speech, awkwardness of movement, reduction of social inhibition, or other signs of acute intoxication?
No	87 (87%)	
Multiple drinks		
Yes	61 (61%)	Is there a representation of chugging, drinking multiple drinks, implying multiple drinks were consumed, or similar behavior?
No	39 (39%)	
<i>Positive associations</i>		
Humor		
Yes	55 (55%)	Containing content likely humorous to the intended audience
No	45 (45%)	
Positive experiences		
Yes	69 (69%)	Depicts users having positive experiences while drinking or referring to drinking, such as showing the product being used by people smiling or laughing, dancing, or relaxing
No	31 (31%)	
Camaraderie		
Yes	45 (45%)	Connotes friendship, familiarity, closeness with others, or party scenes
No	55 (55%)	
<i>Negative associations</i>		
Alcohol-related consequences		
Yes	4 (4%)	Depicts user describing or experiencing an alcohol-related negative consequence (e.g., physical, such as hangover or injury, economic, legal, emotional, social, sexual, etc.)
No	96 (96%)	

and were depicted in a humorous manner in all but a single video. Examples of content for each of these codes are presented in Table 1.

### Discussion

Herein, we present content and themes portrayed in the top 100 TikTok videos associated with #alcohol. First, it is important to note that these videos were easily accessible through a simple internet search and could be viewed without (a) encountering an age-verification process or (b) creating a new user account or logging into an existing TikTok

user account. Thus, there appear to be no measures currently in place to limit underage youth exposure to alcohol content portrayed in videos on TikTok. Any nonregistered person can fully interact with alcohol videos on TikTok, regardless of age. This finding mirrors previous examinations of alcohol brand-generated content posted on Twitter and Instagram asserting there are no age restrictions preventing viewing and interacting with alcohol-related materials posted by alcohol companies (Barry et al., 2016). Although their utility is questionable, alcohol brand websites are required to have some form of age verification in place before a user enters their website (Barry et al., 2021). In an examination of Swedish

alcohol brands' compliance with regulations and codes of conduct on social media accounts, Lindeman and colleagues (2019) assert "the studied beverage brands had alarmingly inadequate age-gates to social media accounts" (p. 386). Clearly, mechanisms designed to better restrict underage immersion in alcohol content on TikTok, and other social media platforms, are needed.

To date, published evidence suggests that (a) exposure to alcohol marketing on digital media platforms is associated with higher alcohol consumption behaviors; (b) alcohol marketing on digital media platforms is attractive to young people and encourages brand engagement; and (c) the alcohol industry is undermining current alcohol marketing codes on digital platforms (Lobstein et al., 2017). What is less clear, however, are the effects of exposure to user-generated videos featuring alcohol brands. There is a clear need to fully examine whether exposure to user-generated alcohol brand content has an impact on alcohol-related behaviors, attitudes, and intentions. As we outlined in our results, the 100 most-liked #alcohol videos on TikTok were collectively viewed 291,999,100 times. Thus, user-generated alcohol-related content is ubiquitous.

Simple searches of TikTok highlight the lack of presence of major international alcohol brands on this platform. For instance, popular brands of beer (e.g., Heineken, Budweiser), distilled spirits (e.g., Bacardi, Grey Goose), and flavored malt beverages (e.g., Mike's Hard Lemonade, White Claw) do not have a profile on TikTok. In the current sample, however, 70% of the posts included reference to a specific brand of alcohol. It is unclear if the alcohol industry had an influence on the individual users posting about specific alcohol brands, although the alcohol industry has demonstrated a shift in their efforts toward digital and social media advertising (Lobstein et al., 2017). Investigation into whether the alcohol industry is funding social media influencers to promote brands or popularize alcohol use on this platform is an important public health initiative. There is already evidence for such practices within Big Tobacco, as the tobacco industry has paid influencers to globally promote their products in more than 40 countries (Campaign for Tobacco-Free Kids, 2019).

The videos included in our sample had been disseminated extensively, being viewed nearly 300 million times. In line with prior findings examining alcohol-related content on social media platforms (Cavazos-Rehg et al., 2015; Primack et al., 2015), the overwhelming majority of videos (98%) in the current sample expressed pro-alcohol sentiment. As previously mentioned, more than half of the videos in our sample depicted consuming multiple drinks quickly (e.g., chugging from a liquor bottle after taking multiple shots, "shotgunning" a beer or flavored malt beverage, drinking an entire Four Loko in 5 minutes). It is concerning that there seems to be a preference for content depicting consumption of multiple drinks, especially considering the number

of youth who are active users on TikTok and the ease with which they can view and interact with this content.

Along these lines, positive associations with alcohol use were also common in our sample of videos. A large majority of videos (69%) depicted positive alcohol-related experiences (e.g., partying, smiling, dancing, while drinking or referring to drinking), and 55% of videos incorporated aspects thought to be humorous to the intended audience. This is particularly concerning because "linkages between drinking alcohol and socialization and parties are particularly insidious for adolescents given that they are especially preoccupied with their social standing and peer acceptance" (Barry et al., 2018b, p. 260). Moreover, videos in the current sample often cast hazardous drinking behaviors in a humorous light and normalized them to the audience (e.g., friends acting out a drunk driving scene where the driver offers the cop an alcoholic beverage; a video featuring a young man singing and laughing about all the alcoholic beverages he's ever puked from; a grandmother busts her underage grandchildren having a party while she is babysitting but proceeds to party with them and chugs an alcoholic beverage). On the other hand, only one video discussed negative consequences associated with alcohol use in a serious manner. Similarly, none of the videos included in our sample were posted by public health professionals or organizations.

With regard to the types of alcohol depicted, distilled spirits were featured much more frequently in our sample of videos than other types of alcohol (i.e., flavored malt beverages, beer, and wine). Distilled spirits were featured in 39 (89%) of the 44 guide videos demonstrating various drink recipes. More than half of these guide videos (52%) depicted consuming multiple standard drinks quickly. A common theme demonstrated in these guide videos was the use of various types of candy, fruit, juice, and soda to mask the flavor of liquor (e.g., videos of "jungle juices" being made in coolers at social gatherings with multiple types of liquor and flavored malt beverages incorporated, adding sugar-filled popsicles and multiple shots of distilled spirits into a blender for personal consumption, using "miracle berries" used to turn sour things sweet to make shots of liquor taste better). In addition, mentions of how the drink recipe would "fuck you up" or "get you drunk" were frequent in these guide videos. In some cases, users would incorporate ingredients purported to "get you drunk with no hangover guaranteed."

Given the widespread reach of the videos in our sample and evidence that the content in these videos is overwhelmingly pro-alcohol and supportive of rapid consumption of multiple drinks, there is an opportunity for public health professionals to use TikTok to counteract this social media trend. TikTok has the potential to be a valuable resource for alcohol counter-advertising and alcohol media literacy interventions, especially among youth. Prior research has established evidence supporting the efficacy for alcohol media

literacy campaigns to reduce youth intentions to use alcohol in the future (Kupersmidt et al., 2012); however, such interventions must be adapted to the constantly changing media landscape.

An excellent example of a counter-advertising media campaign facilitated via TikTok to address youth substance use behaviors is the highly effective youth tobacco prevention campaign, the Truth Initiative (Campaign for Tobacco-Free Kids, 2015). The Truth campaign initiated a viral social media trend focused on young people's desire to quit vaping, entitled "Ready to Ditch Juul" (Truth Initiative, 2020a). The campaign builds off the cultural preference for social media use among youth by encouraging young people to post videos depicting the unique and imaginative ways they have "ditched their Juuls." For instance, Truth's first challenge invited users to submit videos capturing their best trick shots, in which they threw their Juul devices into a cup of ice water. Truth's #ThisisQuitting video page on TikTok has amassed 12.9 billion collective video views at the time of this writing. Users who view and interact with the video content on TikTok are simultaneously exposed to resources aimed to help them quit vaping, including encouragement to text "DITCHVAPE to 88709" to sign up for the "This is Quitting" mobile program created to help young people quit vaping (Truth Initiative, 2020b).

### Limitations

This study was inherently limited because of its cross-sectional nature, as data were collected at only one point in time. Content on TikTok is constantly evolving; however, our sample of the top 100 #alcohol videos included videos posted across a 13-month period (July 2019–August 2020). Also, we only included the top 100 videos associated with a single hashtag. Our results may not be generalizable to other samples of user-generated videos relevant to alcohol. A final limitation relates to the subjective nature of coding some of our alcohol-related variables. To account for this limitation, we developed a codebook based on previously published research examining portrayals of alcohol intoxication on YouTube (Primack et al., 2015) and content appealing to youth in video-based alcohol advertisements (Padon et al., 2018). Additionally, we used two coders for each video and discussed differences in coding with a content expert until agreement was reached. Despite these limitations, this study addresses a gap in the literature and offers valuable insights into alcohol-related portrayals on TikTok. More research exploring this emerging social media platform, and its potential use for the promotion of health, is needed.

### Conclusions

This study demonstrates the widespread reach of top alcohol-related videos on TikTok, the vast majority of which

associate positives, such as humor, camaraderie, and pro-alcohol sentiments, while rarely depicting negative outcomes associated with hazardous alcohol use. The implications of this finding are amplified by the ease of access to and interaction with this alcohol-related content. It is this ease of access, coupled with the lack of research specifically examining the impact of alcohol-branded user-generated messages on alcohol behaviors, that highlights the need for additional research as well as some mechanism to minimize youth exposure to alcohol-related content. At a minimum, some form of age verification should be implemented by TikTok to prevent youth access to and engagement with alcohol-related videos.

Given the lack of presence of well-known alcohol brands on TikTok, yet the high percentage of posts that specifically mention an alcohol brand, investigation into whether the alcohol industry is funding social media influencers to promote their products is warranted. Moreover, there is a need to determine whether TikTok can be fostered to effectively disseminate alcohol countermarketing and alcohol social media literacy interventions encouraging alcohol social media skepticism and deconstruction skills, and in turn, diminishing the unwanted effects of exposure to alcohol portrayals on social media. Other TikTok-based public health efforts designed to address youth substance use behaviors have demonstrated widespread dissemination and the potential to change substance use behaviors (Truth Initiative, 2020b).

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