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#Drink or #Drunk? An Experimental Study Investigating the Impact of Positive and Negative Alcohol Depictions in Ephemeral Social Media on Alcohol Cognitions

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ABSTRACT

Exposure to alcohol on social media has been linked to offline alcohol use. With the rise of ephemeral messages (e.g. Snapchat), social media users are exposed to a wider variety of alcohol depictions, ranging from negative to more positive ones. However, it remains unclear how exposure to differential alcohol depictions influences offline alcohol cognitions and who is most susceptible to them. We conducted an online between-subjects experiment manipulating the type of alcohol-related social media depictions (negative vs. positive vs. control) to investigate the impact on alcohol outcome expectations and attitudes. We also assessed whether alcohol status moderates these effects. A total of 361 emerging adults participated in the study (M_{age} = 23.32; SD = 2.50; 77.3% females; 66.5% students). Our results showed that exposure to positive depictions did not exert an impact on positive outcome expectations (b = -.14, *confidence interval [CI]* = -.44/.11), nor on negative outcome expectations (b = -.18, *[CI]* = -.46/.11), or attitudes (b = -.04, *[CI]* = -.25/.18). For negative depictions, we found an impact on attitudes (b = -.34, *[CI]* = -.56/-.13), but not on positive outcome expectations (b = -.04, *[CI]* = -.34/.27) or negative outcome expectations (b = .07; *[CI]* = -.22/.35). This implied that emerging adults exposed to negative alcohol depictions had more negative attitudes toward alcohol use. This effect remained robust even when taking the individuals' frequency of alcohol use into account. These findings suggest that positive and negative depictions on social media may operate differently, thereby informing future research and health interventions.

Alcohol (mis)use remains a leading contributor to global disease burden disease and premature death (World Health Organization, 2024). In Belgium, while alcohol use spans all ages from adolescence onward, risky drinking is especially prevalent among emerging adults (i.e., ages 18–25; Drieskens et al., 2019). Among 15-to-24-year-olds, 14.4% report monthly binge drinking and 37.7% consume more than six drinks on a single occasion (Drieskens et al., 2019; Gisle et al., 2019). Such excessive use is linked to acute harm (e.g., poisoning, accidents) and long-term risks (e.g., addiction, brain damage; Clark et al., 2008; Rehm & Imtiaz, 2016; Zeigler et al., 2005).

Following the social cognitive theory (SCT; Bandura, 2001), alcohol use is partially shaped by exposure to others' alcohol behaviors, including via social media. Via these platforms, young people are confronted with a stream of alcohol depictions, often from one of the most influential sources, their peers (Hendriks, van den Putte, & Gebhardt, 2018; Vranken et al., 2023). Meta-analyses suggest a positive link between exposure to alcohol depictions on social media and alcohol cognitions and (mis)use (Cheng et al., 2024; Curtis et al., 2018). However, three gaps prevail.

First, a recent systematic review found that over 70% of studies on alcohol-related social media effects use cross-sectional designs, limiting causal inference (Steers et al., 2025). Only a few experiments assessing the role of exposure to alcohol on offline cognitions exist (e.g., Alhabash et al., 2015, 2016; Hendriks et al., 2021; Litt & Stock, 2011; Mesman et al., 2020), despite their ability to isolate causal effects through randomization and stimulus standardization. Second, most studies treat alcohol depictions as uniform (Curtis et al., 2018; Steers et al., 2025), overlooking important variations such as valence (i.e., whether depictions highlight positive or negative consequences) (for an overview, see Steers et al., 2025). Only one experimental study has manipulated both valence and social context (Hendriks et al., 2021). Despite its methodological strengths, it found no effects; possibly due to mixed-source stimuli (e.g., campaigns, news outlets, peer posts) instead of an exclusive focus on peer-generated content, and distal outcomes (i.e., alcohol use), rather than more immediate outcomes such as expectations and attitudes.

Third, individual differences in response are understudied. While some research investigated social-context factors (Geusens et al., 2020a) and personality traits (Geusens et al., 2019, 2020b), the role of prior alcohol experience remains largely unexamined. To address these gaps, we use a between-subjects experiment to assess how different alcohol depictions on social media affect expectations and attitudes, and whether effects vary by alcohol use frequency.

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Differential alcohol depictions in an evolving social media landscape

The social media landscape has shifted rapidly, with ephemeral messages (i.e., those that self-delete after a short period) now prominent across platforms such as Snapchat snaps and Instagram stories (Vranken et al., 2022). Compared to more persistent formats (e.g., Facebook feed), ephemeral content often features a broader variety of alcohol depictions (Vanherle et al., 2023; Vranken et al., 2022). Following the alcohol post-typology (Hendriks, van den Putte, & Gebhardt, 2018), ephemeral messages contain two main categories: moderate and extreme (Boyle et al., 2017; Geusens & Vranken, 2021; Vranken et al., 2022), based on the amount of alcohol shown and the consequences portrayed (Vanherle et al., 2023).

Moderate depictions typically involve limited drinking and positive consequences (e.g., socializing, relaxing), while extreme depictions show heavy use (e.g., drinking games) and negative consequences (e.g., intoxication, vomiting). The presence of both depictions in ephemeral messages may stem from users perceiving these spaces as more private and anonymous, encouraging disclosure of less socially acceptable drinking behaviors (Boyle et al., 2017; Vranken et al., 2022, 2023). While both quantity and consequences matter, we focus on consequences, as these offer insights into how extreme drinking is normalized, or problematized, on social media.

Differential alcohol depictions on social media

Most research on alcohol-related social media effects has focused on overall exposure frequency (for an overview, see Curtis et al., 2018; Steers et al., 2025), overlooking variation in how alcohol is portrayed. Yet, portrayal differences may shape interpretation and influence offline cognitions. This aligns with the SCT (Bandura, 2001), which posits that observed behaviors and their consequences in mediated environments can shape outcome expectations (i.e., beliefs about alcohol's consequences; Kuther, 2002) and attitudes (i.e., subjective evaluations of desirability; Ajzen, 1991).

Both are central to major health behavior theories. Expectancies are critical in the motivational model of alcohol use, which suggests that individuals form beliefs about alcohol's emotional effects, and the value they assign to these effects give rise to specific drinking motives, such as seeking social enhancement or tension reduction, or avoiding negatives states through coping or conformity (Cooper, 1994; Cox & Klinger, 2011). These motives are robust predictors of regular and problematic alcohol use (for an overview, see Kuntsche et al., 2005). Attitudes are key in models like the theory of planned behavior (TPB; Ajzen, 1991) or the prototype willingness model (Gibbons et al., 2020), where outcome expectations shape attitudes, which in turn influence intentions and behavior (for an overview, see Cooke et al., 2016).

Bandura (2001) posits that exposure to rewarding outcomes can foster positive expectations and attitudes, while negative outcomes can lead to the opposite. Although this has been supported in traditional media research (de Graaf, 2013; Kulick & Rosenberg, 2001), comparable studies in social media are lacking. To the best of our knowledge, there are currently no studies in the field of alcohol-related social media effects that comparatively examined the impact of positive and negative alcohol depictions on outcome expectations and attitudes. Yet, social media may exert even stronger effects than traditional media, given its peer-driven, proximal nature (Geusens & Beullens, 2023). Ephemeral messages, often shared during drinking events, may seem more realistic (Vanherle et al., 2023), and command greater attention due to their limited visibility (Bayer et al., 2016). These factors could induce a stronger observational learning process. Thus, we hypothesize that:

H1: Exposure to positive alcohol depictions in ephemeral messages will lead to more positive alcohol attitudes via (a) stronger positive and (b) weaker negative outcome expectations, compared to exposure to no alcohol depictions.

H2: Exposure to negative alcohol depictions in ephemeral messages will lead to more negative alcohol attitudes via (a) weaker positive and (b) stronger negative outcome expectations, compared to exposure to no alcohol depictions.

H3: Exposure to negative alcohol depictions in ephemeral messages will lead to more negative alcohol attitudes via (a) weaker positive and (b) stronger negative outcome expectations, compared to exposure to positive alcohol depictions.

The role of individual susceptibility variables

According to the Differential Susceptibility to Media Effects Model (Valkenburg & Peter, 2013), media effects are conditional, meaning that some individuals are more responsive to media messages depending on susceptibility factors such as demographics or personality. While prior research has considered demographics (Boyle et al., 2016) and personality traits (Geusens et al., 2019, 2020b) in alcohol-related social media effects, past behavior, specifically alcohol consumption patterns; has received little attention.

By emerging adulthood, individuals typically have extensive drinking experience (Van Damme et al., 2025), which shapes alcohol-related cognitions. Heavier drinkers tend to hold more favorable attitudes and outcome expectations regarding alcohol use (Dormal et al., 2018). This could partly be due to reinforcement cycles: positive beliefs encourage consumption, which in turn strengthens these beliefs (Jones et al., 2001). Conversely, those with negative expectations and attitudes are less likely to drink (Jones et al., 2001). Furthermore, heavy drinkers may associate more positive connotations with extreme drinking behaviors, potentially downplaying their risks. They may belong to peer groups where excessive drinking is equated with fun (Hebden et al., 2015), or where caring for intoxicated friends enhances social bonds (MacArthur et al., 2016). Within such groups, excessive drinking may be deemed a positive activity.

Drinking behavior could influence how people respond to messages depicting negative alcohol consequences. Some evidence from prevention messaging (Kang & Lee, 2018; Lee & Chen, 2013) and traditional media (Mayrhofer & Naderer,

2019) supports this, though results are mixed. In prevention contexts, the heaviest drinkers are often the hardest to reach with warning messages (Kang & Lee, 2018; Lee & Chen, 2013). Negative portrayals may conflict with their positive alcohol beliefs, triggering cognitive dissonance and message rejection (Festinger, 1954; Kang & Lee, 2018; Lee & Chen, 2013). In contrast, studies on entertainment media suggest that heavy drinkers can learn from negative alcohol depictions (Mayrhofer & Naderer, 2019), perhaps because such content is not perceived as persuasive, thus lowering resistance (Moyer-Gusé, 2008). It remains unclear, however, how drinking frequency shapes responses to alcohol depictions on social media.

RQ1: Does the frequency of alcohol use moderate the effect of the portrayal of positive and negative alcohol behaviors in ephemeral messages on (a) attitudes and (b) positive and (c) negative outcome expectations?

Methods

The materials of the study, including the questionnaire, dataset, and example stimuli are available via the Open Science Framework (OSF).[1]

Inclusion and exclusion criteria

Participants were eligible for inclusion if they met the following three criteria: (1) aged between 18 and 30 (i.e., emerging adult sample), (2) fluent in Dutch (the language of the study), and (3) provided active informed consent. Participants were excluded if they (1) were outside the emerging adulthood range ($n = 3$), (2) did not complete the study ($n = 85$), and (3) failed at least two out of the four attention checks ($n = 5$). We used two general attention checks (i.e., "select the number 10") and two stimulus-specific attention checks that assessed recall of experimental details, such as gender of the individuals shown in the stimuli materials.

Participant characteristics

A total of 454 respondents participated; after applying exclusion criteria, the final analytical dataset included 361 participants (age range 18–30; $M = 23.32$ years, $SD = 2.50$). Females (77.3%) and college students (66.5%) were overrepresented as opposed to males (22.7%) and non-students (33.5%). In terms of alcohol use, 8.3% of participants reported never drinking, 15.8% drank less than once a month, 47.1% two to four times a month, 25.5% two to three times a week, and 3.3% more than four times a week.

Sampling procedures

Data were collected via convenience sampling in March – April 2022. A research assistant handed out flyers on popular student locations (e.g., student restaurants, libraries) and spread a call for participation via personal social media channels (e.g., Facebook, Instagram, LinkedIn). The call for participation contained information on the study, the inclusion criteria (age range), ethical procedures, and the estimated time to complete the study (10 minutes). The call for participation contained a QR code and a URL, which directed potential participants to an online information sheet. Participation required active informed consent, resulting in self-selection, as individuals chose whether to respond to the study invitation.

Ethical considerations

The study underwent ethical screening and received ethical approval by the Social and Societal Ethics Committee of the KU Leuven under project number G-2020–2687. Participants accessed the study via a URL, linking to a detailed information sheet. They were informed about the general aim (i.e., social media and well-being), that they would be exposed to peer-generated social media content related to leisure activities, as alcohol use is typically consumed in this context, and respond to questions on opinions and health behaviors. Participation was voluntary, and only those who provided active consent proceeded to the study. Upon completion, participants were debriefed about the study's true aim, the fictional nature of the stimuli, and the consequences of alcohol depictions on social media, and were provided with contact details for health organizations. No compensation was offered.

Data collection

Data were collected online via Qualtrics. Participants completed the study remotely using their own devices, with all materials and questions delivered digitally without live researcher facilitation.

Condition and design

We employed an online between-subjects design with three conditions (control vs. positive alcohol depictions vs. negative alcohol depictions), with participants randomly assigned via Qualtrics' built-in randomizer. Participants first answered demographic questions, including self-identified gender. They were then randomly exposed to social media depictions of two gender-matched fictitious peers; following established procedures for health-related social media studies (de Jans et al., 2021; Litt & Stock, 2011). Gender-matching is important due to known gender differences in alcohol consumption, drinking norms (Van Damme et al., 2025; Vranken et al., 2023), content evaluation, and identification with peers (de Jans et al., 2021).

Participants read the instruction: "You will be exposed to Stories from your peers. Look at the images as you would typically do when scrolling through social media. Each picture automatically disappears, after which you will see the next one." They then viewed 26 social media pictures designed as Instagram "stories" from the two fictitious, gender-matched peers ($n = 13$/peer; See OSF). Sixteen posts were manipulated ($n = 8$per peer), and 10 were fillers (e.g., selfies, sport activities) to mimic authentic social media.

Post content varied by condition, manipulating the presence of alcohol-related consequences. The control group (n

= 119) saw everyday situations without alcohol (e.g., reading a book, biking). The positive condition (n = 120) showed similar scenes with visible alcohol use and positive short-term effects, such as positive mood and relaxation (e.g., holding a drink while laughing). The negative condition (n = 122) depicted the same settings but with negative short-term physical consequences of drinking (e.g., vomiting, blackouts, hangovers, minor accidents after drunk biking). Both positive and negative conditions focused on immediate short-term physical consequences, reflecting typical ephemeral messages shared in the moment and consequently depicting more immediate outcomes (Geusens & Vranken, 2021; Hendriks, van den Putte, & Gebhardt, 2018; Vranken et al., 2023). Furthermore, these specific outcomes resonate with emerging adults' sensitivity to immediate rather than long-term gratifications or risks (Steinberg, 2008).

For example, one scenario featured a peer with a bicycle. In the control condition, the peer stood next to the bike. In the positive condition, the peer was still standing next to the bike, holding an alcoholic beverage and smiling at the camera, suggesting a carefree moment. In the negative condition, the peer lay on the ground with the bicycle tipped over, implying a minor alcohol-related accident. Another scenario showed a peer sitting outdoors. In the control condition, they simply sat and smiled. In the positive condition, they sat and smiled while holding a bottle of beer, portraying alcohol use as part of a relaxed moment (see Appendix B). In the negative condition, they were shown vomiting in the same location, demonstrating short-term physical consequences of excessive drinking (see also OSF).

To ensure consistency across male and female peers, we matched them on key physical characteristics (e.g., age, physical appearance), and kept location, setting, and scenario constant. All experimental images were photographed by the first author and created using Zeoob, a tool that mimics the "story" interface of platforms like Instagram and Snapchat. Each image was shown for five seconds before disappearing automatically.

Masking

The survey software randomly assigned participants to conditions, without researcher influence. They were unaware of the study's specific hypotheses or their assigned condition, nor the specific aim of the study (i.e., investigating alcohol-related social media effects).

Measures

Dependent variables

Attitudes toward alcohol were measured using a five-point semantic differential scale with six adjective pairs (e.g., (1) *harmful* – (5) *harmless*, (1) *unwise* – (5) *wise*; Hendriks & Strick, 2020). A mean score was calculated (Principal components, eigenvalues = 3.72; explained variance = 62.06; α = .88).

Mediators

Outcome expectations were measured with the Brief Comprehensive Effects of Alcohol Questionnaire (Ham et al., 2005). Participant indicated their agreement with 13 statements about alcohol-related outcomes on a 7-point scale (1 = *totally disagree*, 7 = *totally agree*). While the original scale consists of 15 items, we deleted two items that questioned sexual enhancement because of ethical reasons. We conducted an exploratory factor analysis on the positive and negative outcome expectation subscales. The positive outcome expectation subscale included six items on sociability, liquid courage, and tension reduction, but items on tension reduction were removed due to low communalities (<.4) (Stevens, 2011). A mean score was computed for the remaining items (Principal components, eigenvalues = 2.72; explained variance = 68.08; α = .84). The negative outcome expectancies subscale included seven items on negative self-perception, cognitive and behavioral impairment and increased risk and aggression. The items related to increased risk and aggression were excluded for low communalities. A mean score was calculated for the remaining items (Principal components, eigenvalues = 2.47; explained variance = 49.44; α = .74).

Moderator

For the moderator, we asked participants how often they consumed alcohol using a five-point scale ((1) *never* to (5) *four or more times a week*; National Institute on Alcohol Abuse and Alcoholism, 2025).

Control variables

We included age (open question), occupational status (*1* = student, 2 = employed, *3* = other), and sensation seeking as control variables. This is important as older emerging adults and students are more positive toward alcohol and more frequently engage in risky drinking (e.g., Van Damme et al., 2025). Similarly, sensation seeking, that is a personality trait characterized by a tendency to seek out sensation and novel experiences, plays a critical role in emerging adulthood (Arnett, 2000), and has been consistently linked to alcohol (mis)use and positive alcohol cognitions (Hittner & Swickert, 2006). Hence, this factor has been included as a control variable in studies on alcohol-related social media effects (e.g., Geusens & Beullens, 2017; Vranken et al., 2022). To assess sensation seeking, participants indicated their agreement ((1) *totally disagree* to (7) *totally agree*) with 8 statements such as "I like doing scary things" (Hoyle et al., 2002). We deleted two items due to low factor loading (e.g., "I feel restless when I spend much time at home," "I would like to explore strange places"). The remaining items were averaged (principal components; eigenvalues = 3.17; explained variance = 52.83; α = .81).

Quality measures

Quality was preserved at the level of the stimulus materials (pretest and manipulation check) and the data randomization procedures.

Stimuli materials

The materials were developed by a team of experienced researchers to ensure validity of the materials. The materials

underwent pretesting, and manipulation checks to verify optimal manipulations and consistency.

Pre-test. A pretest among 49 emerging adults (M_{age} = 22.78; *SD* = 2.42; 58.19% females) was conducted to investigate the likability between the fictitious peers (five-point semantic differential scale e.g., (1) *unfriendly* – (5) *friendly*, (1) *unlikeable* – (5) *likeable*, (1) *cold* – (5) *warm*) (De Veirman et al., 2017). Male participants rated the images of the two male peers, while female participants rated those of the two fictitious female peers. Repeated measures ANOVA's indicated no differences between the two male ($F(1,19)$ = 1.09; n.s.), nor between the female peers ($F(1,28)$ = .99; n.s.).

Manipulation check. We conducted a manipulation check asking participants in the two alcohol conditions to indicate whether they perceived the alcohol behavior to be positive or negative (5-item semantic differential scale, (1) = *abnormal;* (5) = *normal*, (1) = *negative;* (5) = *positive* α = .94). Overall, participants deemed the positive alcohol pictures to be positive and normative (*M* = 3.21; *SD* = 0.83) and the negative ones as abnormal and negative (*M* = 1.48; *SD* = 0.52; $F(1,241)$ = 386.70; $p < .001$). Moreover, we asked all participants to recall the presence of alcohol in the pictures (binary, no or yes). Participants in the positive and negative alcohol depiction conditions indicated having seen alcoholic beverages.

Randomization check

We conducted a randomization check for gender (χ^2 = .07; *df* = 2; *n* = 361) and preference of different types of alcoholic drinks including beer, wine, liquor, and aperitifs (5-point hedonic scale, (1) = *I don't like the beverage;* (5) = *I like the beverage very much,* $F(2,360)$ = 1.34; n.s.). All the randomization checks were successful.

Data analysis

We conducted two moderated mediation models using SPSS Macro PROCESS (Model 4, 1000 bootstrapped samples). First, we dummy-coded the experimental conditions, resulting in three dummy variables: control condition (*1* = control, *0* = otherwise), positive condition (*1* = positive, *0* = otherwise), negative condition (*1* = negative, *0* = otherwise).

In the first analysis, we examined the impact of exposure to positive (H1) and negative (H2) conditions, compared to the control group, on positive and negative outcome expectations and attitudes, while assessing the moderating role of frequency of alcohol use (RQ1). The dummy-coded positive and negative conditions were included simultaneously as predictors in the model, making the control condition automatically the reference group. Positive and negative expectations were entered as parallel mediators, and attitudes served as the dependent variable. Frequency of alcohol use served as the moderator and was mean-centered. Two interaction terms were calculated by multiplying the mean-centered frequency of alcohol use with the two dummy variables. We included sensation seeking, age, and occupational status as covariates.

In a second analysis, we investigated the impact of negative alcohol depictions compared to positive ones (H3) on outcome expectations and attitudes, while assessing the moderating role of frequency of alcohol use (RQ1). The dummy-coded negative and control condition were entered as predicting variables to assess the difference compared to the positive condition. Positive and negative outcome expectations served as parallel mediators, and attitudes as the dependent variable. Frequency of alcohol use was entered as the moderator by multiplying the mean-centered frequency of alcohol use by the two dummy variables (i.e., negative and control condition). We used the same control variables as in analysis 1. Figure A1 provides an overview of the tested model.

Results

Testing the hypotheses

The first analysis examined the effects of positive and negative depictions (vs. control) on outcome expectations and attitudes, while assessing the moderating role of frequency of alcohol use. Table A1 presents all direct effects; Table A2 summarizes overall direct and indirect effects.

Contrary to H1, exposure to positive depictions had neither a direct effect nor an indirect effect (via outcome expectations) on alcohol attitudes. Positive and negative outcome expectancies did predict alcohol attitudes, though: Individuals who expected to experience more positive physiological and mental effects from alcohol had more favorable attitudes, while those expecting negative effects held less favorable attitudes. Simultaneously, negative alcohol depictions directly reduced alcohol attitudes, but did not affect positive or negative outcome expectancies. Individuals exposed to negative alcohol depictions reported being less positive about alcohol consumption than individuals who did not see alcohol, but their expectations to experience alcohol's effect did not significantly change. Further probing demonstrated that there was a direct negative effect of exposure to negative depictions on alcohol attitudes, but the indirect effect via positive and negative outcome expectancies was not significant (cf. Table A2). Thus, hypothesis 2 is partially confirmed.

Finally, we ran a second moderated mediation model to test whether exposure to negative alcohol depictions has a stronger effect on alcohol cognitions than exposure to positive depictions (hypothesis 3). The results confirmed this for alcohol attitudes (*b* = –.31; *p* = .006; *LLCI/ULCI* = –.52/-.089), but we found no differences when looking at positive (*b* = .11; *p* = .50; *LLCI/ULCI* = –.20/.41) and negative outcome expectations (*b* = .25; *p* = .15; *LLCI/ULCI* = –.04/.53). This means that individuals who were exposed to negative alcohol depictions were more negative toward alcohol than individuals who were exposed to positive alcohol depictions, but there was no effect on the physiological and mental effects they expected to experience as a result of their drinking. Similarly to what was found when comparing exposure to negative depictions to the control condition, the direct effect of exposure to negative depictions on alcohol attitudes was negative and significant (*b* = –.32 *p* = .004; *LLCI/ULCI* = –.54/-.10), but there was no indirect effect on attitudes via positive (*b* = .01; SE = .02; *LLCI/ULCI* = –.02/.05) or negative expectancies (*b* = –.02; *SE* = .02; *LLCI/ULCI* = –.07/.005). Thus, hypothesis 3 is partially confirmed.

Answering the research question

Next, we examined whether the frequency of alcohol use impacts the effect of exposure to positive and negative alcohol depictions on alcohol-related cognitions. Frequency of alcohol use did not have a direct association with positive or negative outcome expectancies (Cf. Table A1). Yet, there was a direct positive association with alcohol attitudes: the more often individuals consume alcohol, the more positive they are about alcohol consumption. The interactions between drinking behavior and exposure to the positive or negative alcohol depictions did not significantly predict positive and negative expectations or attitudes.

Discussion

With the rise of ephemeral message types, people increasingly encounter both glamorized and negative portrayals of alcohol use (Boyle et al., 2017; Vranken et al., 2022, 2023). Building on SCT (Bandura, 2001), we expected that positive depictions would reinforce positive attitudes via stronger positive and weaker negative outcome expectations, while negative depictions would result in more negative attitudes via weaker positive and stronger negative outcome expectations. These hypotheses were not confirmed. We only found an effect of negative depictions on negative attitudes. From this, we draw three key conclusions: (1) self-reflective alcohol cognitions are more resistant to change than more general alcohol cognitions, (2) negative alcohol depictions have a stronger immediate effect than positive ones, and (3) the lack of moderation by prior drinking behavior is promising from a prevention point of view.

First, our findings suggest that some alcohol cognitions are more resistant to change than others. While exposure influenced more general attitudes toward alcohol, it had no effect on self-reflective thoughts about alcohol (i.e., outcome expectations). As outcome expectations are typically formed in childhood (Cook et al., 2021) and reinforced in adolescence when individuals initiate the use of alcohol (Schulenberg & Maggs, 2002), these outcome expectations may be relatively stable by emerging adulthood. Hence, such expectations may not be sensitive to social media content. Moreover, outcome expectations capture personal beliefs about how one would experience alcohol's effects (e.g., "I would feel dizzy upon consuming alcohol"), whereas attitudes reflect broader judgments about alcohol use in general (e.g., "consuming alcohol is harmful"). This distinction may result in a third-person perception effect, where participants adjusted their general views on alcohol (i.e., attitudes), but did not think that they would personally experience the same consequences as those depicted in the posts (i.e., outcome expectations). Future research could explore to what extent vicarious learning about alcohol outcome expectations is age-specific and more likely among younger individuals without substantial drinking experience (e.g., Austin et al., 2006).

Second, positive and negative alcohol depictions affect alcohol-related cognitions differently, with negative depictions having a more immediate impact on offline cognitions and behaviors. This aligns with the negativity bias hypothesis (Baumeister et al., 2001), which posits that negative information tends to exert a stronger initial effect than positive information. While primarily studied in interpersonal contexts (Baumeister et al., 2001), this bias has also been observed with alcohol portrayals in TV series (de Graaf, 2013). Social norms theory (Berkowitz, 2004) may further explain this effect: individuals are more likely to notice and recall risky behaviors performed by a minority than regular, common behaviors engaged in by most. Indeed, on social media, young people encounter negative and extreme depictions less frequently than positive ones (Vranken et al., 2022), potentially making the former ones stand out.

Nevertheless, repeated exposure to alcohol depictions may still influence even more stable alcohol-related cognitions. Positive depictions are overrepresented on social media (Hendriks et al., 2017; Vranken et al., 2022): users regularly encounter (Erevik et al., 2018; Vranken et al., 2022) and share such content (Hendriks et al., 2017), even though they may not be aware of this (Hendriks et al., 2017). Moreover, longitudinal (Boyle et al., 2016; LaBrie et al., 2021) and cross-sectional research (D'Angelo et al., 2014; Vranken et al., 2020) showed that repeated exposure to persistent messages, which are predominantly positive, is linked to positive attitudes and increased alcohol use. Thus, positive depictions may influence alcohol-related cognitions gradually, through cumulative exposure, rather than exerting immediate effects. From a clinical perspective, this suggests that short-term effect studies may underestimate the long-term impact of repeated exposure.

Our third conclusion is also an implication for prevention: Exposure to negative depictions can be used as a prevention mechanism, independent of recipients' prior drinking behavior, as frequency of alcohol use did not moderate the effect of exposure to negative content on negative attitudes. This suggests that highlighting the negative aspects of extreme drinking behavior can discourage emerging adults from heavy drinking, since attitudes are a key determinant of alcohol use (DiBello et al., 2018). Simultaneously, we should keep in mind that so-called fear appeals are not always effective and may prompt counterproductive defensive responses (Ruiter et al., 2014). Therefore, prevention efforts should carefully balance highlighting negative consequences without relying on fear. Health organizations could leverage ephemeral formats (e.g., Instagram Stories) to deliver such prevention messages, potentially even extending this approach to other unhealthy behaviors.

Limitations

Some limitations should be addressed. First, the Stories featured unknown peers. As people tend to choose friends with similar drinking behaviors and grow more alike over time (Burk et al., 2012; White et al., 2008), it is possible that alcohol-related cognitions are only influenced by real peers. Indeed, some evidence suggests that only existing peer posts affect alcohol behaviors (Hendriks et al., 2021). While our experimental design prioritized internal validity by using controlled stimuli, future studies should integrate real peer content and social dynamics.

Second, grounded in SCT (Bandura, 2001), we focused on attitudes and outcome expectations. However, theories like TPB

(Ajzen, 1991) suggest that attitudes operate in tandem with social norms. While this study provided a first step in differentiating the effects of alcohol-related content, future research should extend our design to include social norms. It is plausible that content elements such as the total number of people consuming alcohol (see also Hendriks, van den Putte, Gebhardt, & Moreno, 2018), or the presence of likes and comments (Boyle et al., 2018) may shape normative are relevant for social norms. Since alcohol depictions on social media are constructed within peer groups (Niland et al., 2013), social norms are expected to be relevant.

Third, this study focused on cognitive attitudes or rational evaluations about alcohol. Attitudes can also be driven by emotions (i.e., affective attitudes). It is possible that these affective evaluations are influenced by alcohol-related posts that are deemed appealing, usually the more moderate depictions showcasing people who are enjoying themselves. Future research would benefit from including different types of attitudes.

Fourth, our sample had limitations in representation, which limits the generalizability of our findings. Specifically, college students were overrepresented, and drinking patterns, motivations, and social media use may differ from non-students or emerging adults in other settings, partly due to the college drinking culture (Davidson et al., 2023). Future research should include more diverse groups of emerging adults to enhance external validity.

Additionally, although males are more likely to engage in high-risk drinking (Van Damme et al., 2025), they were underrepresented in our sample. Moreover, due to hegemonic masculinity norms, extreme portrayals of alcohol-related harm are often seen as more acceptable for males (Vranken et al., 2023). This could make them more accepting of negative alcohol depictions online, potentially reinforcing gender norms and normalizing excessive drinking. Future research should examine gender-specific responses more closely.

Finally, this study employed a posttest only design, which limits the ability to assess within-subject changes over time. Although posttest designs are common in experimental research, future research could include baseline measures and possibly long-term follow-up measures to better capture changes in attitudes and outcome expectations in response to alcohol-related social media depictions.

Conclusion

This experimental study established the impact of differential alcohol depictions in ephemeral social media messages on alcohol-related cognitions. Our results showed that only exposure to negative depictions played a role in alcohol-related attitudes. Exposure to negative depictions exerted a negative impact on attitudes, independent of the recipients' frequency of alcohol use. Thus, negative alcohol depictions shared by relatable socialization agents (i.e., peers) on social media could work as a prevention mechanism discouraging alcohol use.

Note

1. See OSF: https://osf.io/tm7zc/files/osfstorage?view_only=67bdc2d819fe4dcdacbea64a1f4b719d

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Appendices
Appendix A

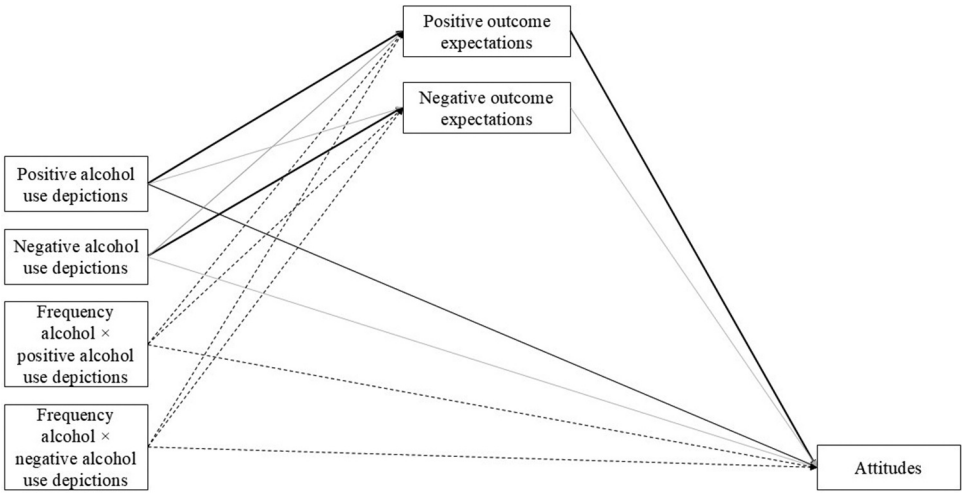

Figure A1. Visual representation of the hypothesized model of the study. *Note*. The black arrows depict hypothesized positive relationships, the grey arrows depict hypothesized negative relationships, and the dotted arrows depict the research questions.

Table A1. Direct effects of exposure to positive and negative alcohol depictions.

	Positive outcome expectations			Negative outcome expectations			Attitudes		
	b	SE	LLCI/ULCI	b	SE	LLCI/ULCI	b	SE	LLCI/ULCI
Positive Alcohol Condition	−.14	.15	−.44/.17	−.18	.15	−.46/.11	−.04	.11	−.25/.18
Negative Alcohol Condition	−.04	.16	−.34/.27	.07	.15	−.22/.35	−.34**	.11	−.56/-.13
Frequency of Alcohol Use	.22	.12	−.02/.46	−.12	.11	−.36/.10	.20*	.09	.03/.37
Frequency of Alcohol Use × Positive Alcohol Condition	.12	.16	−.20/.44	.18	.15	−.12/.49	.02	.12	−.21/.24
Frequency of Alcohol Use × Negative Alcohol Condition	.13	.17	−.20/.47	.001	.16	−.32/.31	.16	.12	−.08/.40
Sensation Seeking	.11*	.05	.005/.21	−.01	.05	−.11/.09	.16***	.04	.09/.24
Age	−.02	.03	−.07/.05	−.002	.03	−.05.05	.03	.02	−.02/.07
Occupational status	−.23	.13	−.48/.02	−.05	.12	−.29/.19	.03	.09	−.15/.21
Positive Outcome Expectations							.11**	.03	.03/.19
Negative Outcome Expectations							−.11**	.04	−.19/-.03
Explained variance	.11			.02			.25		

Note. Macro PROCESS Model 4 with 1000 bootstrap samples; $N = 361$.
Control condition served as the reference category.
***$p < .001$; **$p < .01$; *$p < .05$.

Table A2. Overview of the total, direct, and indirect effects.

	b	Boot SE	Boot LLCI/ULCI
Exposure to positive alcohol use depictions predicting attitudes			
Total	−.04	.11	−.25/.19
Direct	−.04	.11	−.25/.18
Indirect via positive outcome expectations	−.02	.02	−.06/.02
Indirect via negative outcome expectations	.02	.02	−.10/.06
Exposure to negative alcohol use depictions predicting attitudes			
Total effect	−.35**	.11	−.57/-.14
Direct effect	−34**	.11	−.56/-.13
Indirect effect via positive outcome expectations	−.01	.02	−.04/.03
Indirect effect via negative outcome expectations	−.01	.02	−.04/.03

Note. Macro PROCESS Model 4 with 1000 bootstrap samples; $N = 361$.
Control condition as reference category.
***$p < .001$; **$p < .01$; $p < .05$.

Appendix B

Example stimuli materials

Positive alcohol use (1st male peer)

Negative alcohol use (1st male peer)

Control condition (1st male peer)

Positive alcohol use (1st female peer)

Negative alcohol use (1st female peer)

Control condition (1st female peer)

Note. We blurred the faces to safeguard the anonymity of our models.