

RESEARCH ARTICLE

What kind of alcohol-related photo makes people want to post on social media? Cross-cultural comparisons between Korea and the US

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Abstract: Given the increase in problems arising from young people more frequently posting alcohol use on social media, this research aims to elucidate which factors influence such behavior. Additionally, this study examines the impact of alcohol-related cognitions on posting behavior. The final aim is to discover cross-cultural differences between the US and Korea. An online experiment was conducted as a 2 (photo-type: alcohol focus versus alcohol-in-use) × 2 (alcohol type: beer versus wine) × 2 (culture: American versus Korean) between-subject design with 203 American and 233 Korean young adults. Results showed that alcohol-in-use photos generated higher intention to post than alcohol-focused photos and wine photos generated higher intention than beer photos. Also, only Koreans showed a significant effect of alcohol-related cognitions on posting intention. This empirical study suggests that interventions aimed at decreasing problems that result from alcohol-related postings might benefit from emphasizing photos depicting people with alcohol (alcohol-in-use), especially when it comes to wine photos. In addition, culture-specific intervention programs can be designed based on the results of this study.

Keywords: alcohol-related posting; social media; cross-cultural difference; emotional contagion

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Received: February 27, 2023; **Accepted:** May 23, 2023; **Available online:** June 7, 2023

Citation: Park JY, Jia W, Lee HE. What kind of alcohol-related photo makes people want to post on social media? Cross-cultural comparisons between Korea and the US. *Environment and Social Psychology* 2023; 8(1): 1551. doi: 10.18063/esp.v8.i1.1551.

1. Introduction

Online social media enables one person to communicate with hundreds of people about anything^[1]. While numerous contents are uploaded on social media, not all of them are posted with positive intentions or generate positive results. It has been continuously argued that by posting alcohol-related content on social media, young adults' exposure to risky peer behavior, including alcohol use, has greatly expanded^[2]. Such content is viewed as problematic because a host of literature indicates that exposure to alcohol-related posts on social media can increase risky drinking cognitions and alcohol use itself, oftentimes leading to various negative consequences^[2-7].

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For years, alcohol consumption and its resulting problems have been difficult issues in the US and South Korea. 32.9% of American young adults ($N = 3,698$) reported that they engaged in binge drinking (5 or more drinks during a single event) over the most recent 2 weeks, and 19.3% reported an even higher drinking intensity^[8]. The case of South Korea is even more extensive due to its relatively permissive drinking culture^[9]. Among 6,123 respondents aging 19 to 39, 70% reported monthly drinking, and 50% had monthly binge drinking^[10]. Given that such problematic drinking behavior has been an essential issue across universities in both the US and South Korea, examining the relationship between alcohol-related content on social media and high-risk drinking behavior is extremely important. The main goal of this study is to reveal the processes leading to alcohol-related posting behavior, primarily focusing on the unique cultural phenomenon of binge drinking in addition to the high rate of social media usage among American and Korean young adults. To elucidate the behavior's external and internal influencing factors, we adopted the Emotional Contagion Theory and Prototype Willingness Model as theoretical lens for external and internal factors, respectively.

Although the results remain complex, several studies have suggested that alcohol references in social media content can potentially increase alcohol consumption and consequent problems^[11], examination of precisely what kind of alcohol-related content induces such behavior is scarce. There is considerable content on social media depicting alcohol use through pictures^[12], which can commonly be divided into two types: photos depicting people holding or drinking alcohol and photos focusing on alcoholic drinks without any people^[13]. This research focuses on such photo content and expects a significant difference between the impact of specific types of photos (alcohol focus versus alcohol-in-use) on alcohol-related posting behavior.

Moreover, the expected outcomes can vary depending on the type of alcohol. The previous study has suggested that alcoholic beverage types can affect risk perception differently^[14]. In particular, heavy beer consumption is a stronger predictor of risk perception than heavy wine consumption. Similarly, more recent findings have revealed that beer preference was consistent with risky drinking patterns, whereas wine preference was consistent with low-risk alcohol use^[15]. In light of this discussion, the current study takes the type of alcohol into account. Given that posts of beer and wine are most common and that both are generally consumed in the US and South Korea, this study focused on these two types of alcohol.

Furthermore, we expect alcohol-related cognitions could provoke the intention to post alcohol-related content. According to the Prototype Willingness Model, attitudes, subjective norms, and prototypes of risky behavior are supposed to influence behavioral decisions^[16]. Based on this framework, this study suggests that the following factors may affect the increased number of alcohol-related posts: a) beliefs of the outcomes of drinking (alcohol expectancies), b) perceived pervasiveness of drinking (alcohol norms), and c) perceived images of the typical drinker (alcohol prototypes).

Therefore, the study's main goal is to investigate the effects of the type of photo (alcohol focus vs. alcohol-in-use) and type of alcohol (beer vs. wine) on the intention to post alcohol-related content on social media. Further, it will be examined whether alcohol-related cognitions (i.e., alcohol expectancies, alcohol norms, and alcohol prototypes) may also be influencing factors or not. The final goal of the study is to compare participants from the US and South Korea to discover cultural differences in the processes behind posting behaviors. Posting alcohol-related content on social media will be reviewed first for these goals.

2. Literature review

2.1. Posting alcohol-related content on social media

Nowadays, spending time on social media is among the most common activities in daily life. Young adults' social media use is so prevalent that over 90% of college students reported using social media^[17]. Among them, posting alcohol-related content has become such a common and popular activity that social media platforms even serve as a way to showcase risky drinking behaviors^[18,19]. Some studies have even documented that most adolescents have shared alcohol-related content on social media^[20]. In fact, among young adults, two-thirds to more than three-quarters of social media profiles contain alcohol-related content^[6,21]. This phenomenon is a critical problem to resolve, as several past studies show that alcohol-related content uploaded on social media brings about wide-ranging negative consequences^[2-7]. Some studies have illustrated that displayed alcohol references on social media are positively associated with self-reported alcohol use in a cross-sectional sample^[22,23]. Despite the significant negative impact of this posting behavior, literature exploring the process and cause of the behavior is scarce. A few studies have mentioned the personality characteristics of people that post alcohol-related content online. For example, individuals who are low in conscientiousness, agreeableness, and neuroticism are more inclined to mention alcohol on social media^[24]. People high in neuroticism post the negative consequences of drinking more frequently, and those high in openness less regularly share content reflecting positive outcomes of alcohol use^[20]. However, most of the related studies only focused on the Big-five scale, which could be too generalized to explain the process and other influencing factors of alcohol-related posting behavior.

This study seeks to address this gap by examining the impact of a specific type of photo on alcohol-related posting behavior based on the Emotional Contagion Theory^[25]. A considerable amount of alcohol references on social media depicts alcohol use through pictures^[12]. Those photos could be divided into two typical types: photos depicting people holding alcohol or photos focusing on the alcoholic drink itself^[13]. This research expects that if the photo of alcohol uploaded on social media includes people, then the emotional contagion of happiness can occur, increasing the likelihood that viewers will drink, or post alcohol-related content compared to the viewers of the photo without people^[25]. Also, it is postulated that the type of alcohol can have different impacts on alcohol-related posting behavior.

Moreover, the current work examines alcohol-related cognition as another influencing factor by viewing alcohol-related posting as one of many risky online behaviors. According to the Prototype Willingness Model, attitudes, subjective norms, and prototypes of a specific risky behavior are supposed to influence behavioral decisions^[16]. Previous work investigating the influencing factors on alcohol use through this model proposed expectancies, perceived norms, and prototypes of alcohol as prominent predictors of alcohol consumption^[26]. The current study takes these three kinds of cognitions (alcohol expectancies, alcohol norms, and alcohol prototypes) as influencing factors that could evoke increased alcohol-related posting.

2.2. Emotional Contagion Theory and type of photos

During human interactions, one individual becomes frequently "infected" with emotions displayed by the communication partner^[27]. Such emotional contagion evokes emotions through three stages in which the perception of facial expressions triggers facial mimicry, which causes feedback

from facial receptors or neural structures involved in facial movements^[25,28]. Research has demonstrated that this process occurs in various settings ranging from direct contact to indirect communication^[29–33]. That is, emotional contagion occurs not only during face-to-face interactions, but also during computer-mediated interactions, such as communication via social media. On social media, individuals will predominantly encounter photos depicting happiness, as people tend to present the most positive sides of themselves and their lives on these platforms^[34–36]. Taking the Emotional Contagion Theory into account, exposure to these photos may positively influence the viewer's mood^[34].

Current research suggests that such emotional contagion of happiness may occur through alcohol-related photos uploaded on social media. Social media contents are typically generated in formats of text, photos, or videos. Among them, a photo is generally the most influential format because it requires relatively less cognitive effort to process the information than a video^[37]. According to previous studies regarding alcohol-related posting on social media, there is a considerable amount of alcohol references depicting alcohol use visually in the format of photography^[17,38]. Among these, photos in which people are holding or drinking alcohol and photos focusing on the alcoholic drink itself have been recognized as the most common forms of alcohol-related pictures^[13]. According to the Emotional Contagion Theory^[25], it is plausible to assume that compared to the photo depicting alcohol without any people, the photo illustrating people enjoying moments with alcohol will have a relatively positive influence on the viewer's mood, increasing his or her likelihood to drink or post similar content on their own social media. Moreover, alcohol-related photos depicting alcohol and people together can convey a more specific perception of alcohol as a social lubricant^[39]. On the other hand, photos of only an alcoholic beverage lack this aforementioned perception. Perceiving alcohol as a social lubricant can make people more likely to drink or post alcohol-related content by alleviating barriers people have against risky behavior. Therefore, this study's hypothesis expects the main effect of the different focuses of a photo between alcohol-in-use and alcohol focus.

H1: Alcohol-related photos depicting alcohol with people (i.e., alcohol-in-use) will lead to a higher intention to post alcohol-related content on social media than alcohol-related photos depicting alcohol without people (i.e., alcohol focus).

2.3. Type of alcohol

Generally, people form different perceptions of different kinds of alcohol. Beer is widely associated with pubs, obesity, and men, whereas wine is more closely linked to meals, sophistication, and women^[40]. Accordingly, the previous study has demonstrated that heavy beer consumption is a stronger predictor of risk perception than heavy wine consumption^[14]. In fact, men who preferred beer rated themselves as more drinkers than men who preferred wine^[41]. In addition to the difference between associated perceptions of beer and wine, there is also an actual difference between these types of drinkers. Previous work investigating the relationship between the type of alcohol people drink and their demographics has shown that wine drinking was significantly associated with higher IQ, parental educational level, and socioeconomic status. In contrast, beer drinking was significantly correlated with lower scores on these same variables^[42]. Given these distinctive characteristics of beer and wine, it is reasonable to expect that the photo of each type of alcohol will factor differently into inducing viewers' alcohol-related behavior. Thus, it is hypothesized that people exposed to a photo of beer will recall an image of more aggressive and excessive high-risk drinking compared to those exposed to a photo of wine. Due to images of beer being somewhat more negative, people will

represent a lower intention to drink and post alcohol-related content when they encounter a photo of beer than when they encounter a photo of wine. Moreover, it is expected that the type of alcohol will moderate the effect of the type of photo on behavioral intention. That is, the impact that photos depicting both alcohol and people together has on inducing alcohol-related behaviors will be higher for the wine condition. In contrast, there will be no significant difference between the alcohol-in-use photo and alcohol focus photo regarding the beer condition.

H2: Alcohol-related photos depicting wine will lead to a higher intention to post alcohol-related content on social media than alcohol-related photos depicting beer.

H3: The positive impact of photos depicting alcohol with people (i.e., alcohol-in-use) on an intention to post alcohol-related content on social media will be higher for wine than beer.

2.4. The role of alcohol-related cognitions

Some studies have investigated the phenomenon of illegal or inappropriate online posts, such as content referring to alcohol or drug consumption, sexuality, illegal behavior, personal information, and offensive material^[43,44]. Various problems can result from risky content, including but not limited to health problems, increased risk of assault, vandalism, or academic problems^[17]. Alcohol-related posting has been continuously mentioned as risky online presentation due to its effects on facilitating alcohol use and related problems^[7,17,24,43]. According to the Prototype Willingness Model, attitudes, subjective norms, and prototypes of risky behavior are supposed to influence behavior decisions^[16]. Risky behaviors result from a reasoned and intentional process, which includes attitudes and subjective norms as influencing factors^[16]. Applying this to alcohol-related content, decisions to post alcohol-related content on social media are likely to be influenced by attitudes toward drinking, subjective norms of alcohol use, and prototypes of the typical drinker. Therefore, this study proposes that those three types of alcohol-related cognitions (i.e., alcohol expectancies, alcohol norms, and alcohol prototypes) can affect the intention to post alcohol-related posts online.

First, it is expected that alcohol expectancies will influence alcohol-related behavioral intentions. People's expectations about what will happen when they drink alcohol are known as alcohol expectancies^[45]. As more positive attitudes form an individual's risky behavior, he or she will be more likely to engage in the actual behaviors^[16]. Previous research has suggested that positive images of alcohol may increase alcohol references on social media^[20].

Therefore, this study proposes that individuals decide on posting alcohol-related content depending on perceived alcohol norms. Alcohol norms can be defined as the popularity or pervasiveness of alcohol use. Subjective norms are some of the most important predictors of risky online behavior^[16]. Social Norm Theory asserts that behavior is affected by perceptions of how others think and behave^[46]. When it comes to drinking, alcohol norms are supposed to be related to alcohol consumption^[26], and perceived descriptive norms about alcohol are positively associated with engaging in alcohol-related posting^[20].

Moreover, alcohol prototypes of the typical drinker may also influence personal decisions of drinking and sharing alcohol-related content on social media. Prototypes of the typical person conducting a specific behavior can influence individuals' likelihood of engaging in the same behavior^[47]. With a positive image of a typical person, individuals are more willing to accept the behavioral outcomes and more likely to perform it^[16]. Positive prototypes of a typical drinker have increased

the possibility of alcohol use^[47]. Current research proposes that the positive prototypes of the typical drinker will induce alcohol-related behavioral intentions as they allow viewers to keep more positive images and perceive less risk of drinking.

H4: Alcohol expectancies (H4a), alcohol norms (H4b), and alcohol prototypes (H4c) will provoke the intention to post alcohol-related content on social media.

2.5. Cultural differences between the US and Korea

As people from different cultural contexts and beliefs may have different drinking and posting patterns, alcohol-related content posted on social media may be influenced by behaviors developed from the cultural characteristics of individuals. According to a plethora of precedent research, the patterns of risky behaviors among young adults vary across their cultural backgrounds^[48–50]. This is more prominent in drinking behaviors because drinking norms and beliefs are unique to individual cultural groups. Kuntsche *et al.*^[48] showed that adolescents from southern/central European countries attended drinking occasions more frequently than those in northern Europe, who attended fewer drinking occasions but reported being drunk more often.

Furthermore, a culture with a norm of drinking until intoxication was more susceptible to alcohol-related violence. It is believed that differences in drinking behaviors derive from different motivations to drink across cultures. Mackinnon *et al.*^[51] demonstrated that compared to those from collectivistic countries, young adults from individualistic countries have a stronger tendency to drink for positive reinforcement, such as social and personal enhancement. Moreover, Geusens *et al.*^[52] reported that the difference in legal drinking age across countries might reflect the social acceptability toward alcohol consumption. While the sale of alcohol to those under 21 years old is legally prohibited in the US, the legal drinking age in many other European countries is lower. This indicates that European cultures are more accepting of alcohol while American culture is more restrictive of alcohol. Such divergence leads to differences in people's process when responding to alcohol-related content online.

In the same vein, it is plausible to propose that alcohol-related posting behavior, which is considered one of many risky online behaviors, may be perceived differently depending on one's culture. The current research focused on young adults from America and Korea since both countries display apparent cultural differences and suffer from drinking problems among emerging adults. Chou *et al.*^[53] demonstrated that Americans showed higher alcohol abuse than Koreans, while Koreans showed higher alcohol dependence than Americans^[53]. Also, although the alcohol dependence rate in America was lower, alcohol-dependent Americans tended to seek treatments more actively than alcohol-dependent Koreans^[53]. Moreover, the US has an individualistic and alcohol-restricting culture^[52], whereas Korea is characterized by a collectivistic and alcohol-accepting culture^[54,55]. Thus, based on such cultural differences between the US and Korea regarding alcohol consumption, this study investigated the overall difference in alcohol-related posting behaviors and alcohol-related cognitions between Korean and American young adults.

Furthermore, this research attempted to discover what kind of photo is more likely to induce alcohol-related posting behaviors. More specifically, we focused on how culture can moderate the reactions toward different types of photos. As postulated, the photo with people holding alcoholic beverages (i.e., alcohol-in-use) induced higher intention to post alcohol-related content than alco-

hol-focused photos due to contagious positive emotion. It is conceivable that people who are prone to emotional contagion via interpersonal communication are more likely to be affected by the alcohol-in-use photo. Previous results show that people in collectivistic cultures (e.g., Japan) tend to be more influenced by others' emotions than people in individualistic cultures (e.g., the US), thus inducing stronger emotional contagion^[56,57].

Moreover, although beer and wine are commonly consumed in both America and Korea, people from Western cultures are relatively more familiar with wines than Asians since wines are more popularized in Western society^[58]. On the other hand, beer has little difference in perception across cultures. Such prior attitudes toward wine and beer could make Americans and Koreans react differently toward photos depicting different types of alcohol.

Finally, former research suggests that social media usage patterns vary across countries. Accordingly, the nature of content posted also varies across cultures^[55,59]. Thus, it is plausible to assume that while people may be from different countries, social media enable them to be familiar with different types of content and react to that content in one of a variety of ways to which that content lends itself. Building on this context, this research expected that culture would moderate the interaction effect of alcohol type and photo type on posting behavior and aimed to detect the specific point at which this difference emerged. Therefore, research question 1 is proposed.

Research question 1 (RQ1): Is there any cultural difference between Americans and Koreans in the whole process?

3. Methods

3.1. Participants

The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Institutional Review Board (or Ethics Committee) of Ewha Womans University. The research was launched in 2018–2019 as an online questionnaire. 233 ($N = 233$, male: 48.5%) Korean participants of 21 to 40 years old ($M = 30.72$, $SD = 5.62$) were recruited through Embrain, a Korean survey company. 67.4% ($N = 157$) reported being college graduates, and over two-thirds were worked full-time. All the Korean participants were culturally and ethnically Korean.

203 ($N = 203$, male: 50.7%) American participants of 21 to 40 years old ($M = 30.94$, $SD = 4.78$) were recruited through the platform Amazon Mechanical Turk (MTurk) (<https://www.mturk.com>). About two-thirds were White (76.8%), followed by Black or African-American (7.9%), Asian (6.4%), Hispanic or Latino (5.9%), and multiracial (3%). Half of the sample reported being college graduates, and over two-thirds worked full-time.

Participants were limited to those who used Facebook and were asked to give informed consent, stating that participation was voluntary and that answers would be analyzed anonymously.

3.2. Procedure

The participants completed the questionnaires in their native English or Korean languages. The English version of the questionnaire was created first. Then, it was translated into Korean using the back-translation method to ensure equivalence in meaning by a bilingual researcher who was blind

to the purpose of this research. Then, the authors, fluent in English and Korean, carefully compared and verified the English and Korean versions.

After agreeing on the consent form by clicking the check box, participants were asked to complete the online questionnaire. First, participants provided demographical information, including age, gender, ethnicity, education, and employment status. Next, they completed the first part of the questionnaire, including measurements of their alcohol use and Facebook use. Then, they were randomly assigned to one of the four photos (**Figure 1**) and told that it was posted on Facebook. Next, their alcohol expectancies, alcohol norms, and alcohol prototypes were measured again after they viewed the photo. Finally, their intentions to upload alcohol-related content on social media were measured after viewing the photo.

3.3. Experimental design

This study conducted a 2 (types of photos: alcohol focus versus alcohol-in-use) \times 2 (types of drinks: wine versus beer) \times 2 (cultures: the US versus Korea) between-subjects design online experiment. Participants in each culture were randomly assigned to one of the four experimental groups (alcohol focus-wine, alcohol-in-use-wine, alcohol focus-beer, and alcohol-in-use-beer). The brands and faces of people in the photos were covered to minimize any possible bias related to participants' preferences.



Figure 1. Photos used in the experimental survey.

3.4. Measures

All the items were measured on a 5-point Likert scale (“1” = strongly disagree to “5” = strongly agree) unless other response formats were specified. The items in the survey were alcohol use, Facebook use, alcohol expectancies, alcohol norms, alcohol prototypes, and intention to post alcohol-related content on social media.

Three items assessed the frequency and amount of alcohol use. The items were selected and revised from the Alcohol Use Disorders Identification Test (AUDIT)^[60]. A higher score indicates more alcohol use. A total of 98.5% ($N = 200$) of respondents reported having consumed alcohol regularly. On average, participants reported consuming two and a half drinks ($SD = 1.24$, range: 1 or less to 5 or more) on a typical day of drinking alcohol, and the average drinking frequency was about monthly (range: never to daily or almost daily). 91.4% ($N = 213$) of respondents reported consuming alcohol regularly. On average, participants reported consuming about 2 drinks ($SD = 0.99$, range: 1 or less to 5 or more) on a typical day of drinking alcohol, and the average drinking frequency is about monthly.

Four items assessed the frequency and time of Facebook use. The items were revised from Karl *et al.*^[24]. All participants have a Facebook account, and about 80% of the participants have had the account for more than 3 years. American participants have 374 friends on average ($SD = 394$, range = 0–2,500), and Korean participants have 163 friends on average ($SD = 372$, range = 0–5,000). In addition, American participants post something once per month on average, whereas Korean post something less than once a month on average.

Three items selected from the Alcohol Expectancy Questionnaire assessed the expected consequences of alcohol use^[45]. An example item is “Drinking alcohol makes a person feel good and happy.” The reliabilities (Cronbach’s α) are 0.84 for Americans and 0.83 for Koreans. Two items revised from Dal Cin *et al.*^[26] assessed the participants’ normative perceptions of alcohol use. An example item is “Most people have used alcohol.” The reliabilities (Cronbach’s α) are 0.82 for Americans and 0.67 for Koreans. Three items selected and revised from Blanton *et al.*^[61] assessed the participants’ impressions of the typical person who uses alcohol. An example item is “The typical person who uses alcohol is cool.” The reliabilities (Cronbach’s α) are 0.84 for Americans and 0.91 for Koreans.

Four items selected and modified from Gibbons *et al.*^[62] measured participants’ intentions to post alcohol-related content on social media. An example item is “Do you think you will post photos of drinking or alcohol on Facebook?” The reliabilities (Cronbach’s α) are 0.93 for Americans and 0.94 for Koreans.

3.5. Statistical analyses

For H1, H2, H3 and RQ1, a 2 (types of photos) \times 2 (types of drinks) \times 2 (culture) ANOVA was conducted. For H4, two separate multiple regression analyses (MMR) for Korean and American models were conducted. To protect against nonessential multicollinearity and to ease interpretation^[63], the continuous variables (alcohol expectancies, norms, and prototypes) were centered before entering into the equation. The types of photos and types of drinks were dummy-coded with the alcohol focus photo (=1) and the beer photo (=1) as a reference and included as covariates.

4. Results

The main effect for types of photos expected in H1 was significant, $F(1, 428) = 13.76, p < 0.001, \eta^2 = 0.03$. The alcohol-in-use photo showed more intention to post alcohol-related content ($M = 2.58, SD = 1.04$) than the alcohol focus photo ($M = 2.25, SD = 1.06$). Also, the main effect for types of drinks hypothesized by H2 was significant, $F(1, 428) = 14.44, p < 0.001, \eta^2 = 0.03$. The wine photo showed more intention to post alcohol-related content ($M = 2.59, SD = 1.06$) than the beer photo ($M = 2.24, SD = 1.05$). The interaction term of types of photos and types of drinks was not significant, rejecting the H3, $F(1, 428) = 0.17, p = 0.684, \eta^2 = 0.00$. Therefore, the data were consistent with H1 and H2, but not with H3.

RQ1 examined whether there was any cultural difference between Americans and Koreans at any point in the entire process. The main effect for culture was significant, $F(1, 428) = 5.77, p < 0.05, \eta^2 = 0.01$. Koreans had more intention to post ($M = 2.53, SD = 1.02$) than Americans ($M = 2.29, SD = 1.10$). The interaction term of types of photos and culture was significant, $F(1, 428) = 9.16, p < 0.01, \eta^2 = 0.02$. For Americans, the participants who were exposed to the wine photo showed more intention ($M = 2.62, SD = 1.13$) than the participants who viewed the beer photo ($M = 1.96, SD = 0.98$). In contrast, there was no difference between the wine photo ($M = 2.56, SD = 1.00$) and the beer photo ($M = 2.49, SD = 1.04$) among Koreans. The interaction term of types of drinks and culture was significant, $F(1, 428) = 14.25, p < 0.001, \eta^2 = 0.03$. For Americans, the alcohol-in-use photo showed more intention ($M = 2.65, SD = 1.11$) than the alcohol focus photo ($M = 1.93, SD = 0.98$). In contrast, there is no difference between the alcohol-in-use photo ($M = 2.52, SD = 0.98$) and the alcohol focus photo ($M = 2.53, SD = 1.06$) among Koreans. These interaction effects showed meaningful patterns in **Figure 2**. Finally, the three-way interaction term of culture, types of photos, and types of drinks was not significant, $F(1, 428) = 2.07, p = 0.151, \eta^2 = 0.01$.

Lastly, the MMR model for Americans was statistically significant, $F(5, 195) = 10.53, p < 0.001$, adjusted $R^2 = 0.19$. When each predictor was examined, however, no predictor was significant in predicting intention to post. The MMR model for Koreans was statistically significant, $F(5, 195) = 14.38, p < 0.001$, adjusted $R^2 = 0.22$. When each predictor was examined, alcohol expectancies and alcohol prototypes were significant in predicting intention to post, $b = 0.23, t = 3.25, p < 0.01$ and $b = 0.35, t = 5.36, p < 0.001$, respectively, while alcohol norms was not consistent, $b = -0.04, t = -0.64, p = 0.52$. Therefore, data were consistent with H4a and H4c among Koreans.

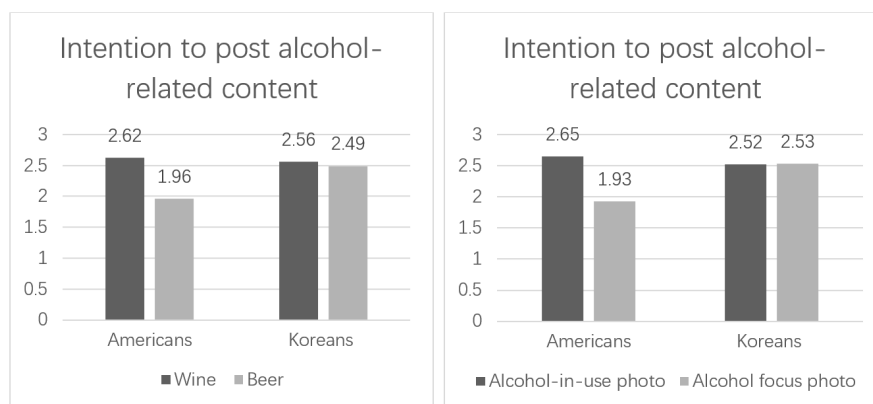


Figure 2. Cultural differences.

5. Discussion

This study aimed to enhance the understanding of influencing factors of alcohol-related posting behavior by examining what kind of alcohol-related content could induce alcohol-related posting on social media and to investigate the effect of alcohol-related cognitions on such behavior. Based on the Emotional Contagion Theory and Prototype Willingness Model, this experimental study demonstrated that different types of photos and alcohol could provoke various intentions to post alcohol-related content online and that alcohol-related cognitions can also stimulate this intention. Cultural differences were identified throughout the whole process.

Korean young adults were more likely to post alcohol-related content on social media than Americans. The expected effect of types of photos and alcohol was only significant among Americans. That is, Americans who were exposed to a photo of people holding a glass of wine or beer (i.e., alcohol-in-use condition) had a stronger intention to post alcohol-related content on their social media profiles than those who viewed a photo focusing on the alcoholic beverage without any people (i.e., alcohol focus condition). In contrast, Koreans showed no difference between these two types of photos. In other words, the emotional contagion might have occurred in the alcohol-in-use condition for Americans and made them feel positive about the behavior^[25]. Also, photos depicting wine evoked higher intention to post alcohol-related content than beer photos among American young adults. This could be explained by Korea's relatively permissive drinking culture^[9]. As Koreans are more familiar with drinking and related behaviors due to their unique excessive drinking culture, the study indicates that Koreans generally have a higher intention to post alcohol-related content online than Americans. This suggests that when it comes to Koreans, the emotional contagion effect deriving from the photos depicting people holding the drink (i.e., alcohol-in-use) might have been decreased by Koreans' high receptivity toward alcohol. A similar explanation pertains to the results regarding the type of alcohol as well. That is, Koreans' receptivity toward alcohol might have washed out relatively small effects of the beer photo on the intention to post due to its higher risk perception than of the wine photo. The beer photo also showed an indistinguishable level of impact on intention compared to the wine photo.

Regarding the three types of alcohol-related cognitions, namely alcohol expectancies, alcohol norms, and alcohol prototypes, only Koreans were significantly influenced by alcohol expectancies and prototypes. In other words, if the expectations of drinking outcomes and the typical drinker's image were positive, Koreans showed higher intention to post alcohol-related content. However, perceived pervasiveness did not matter for such behavior. This might be explained by the fact that Koreans are sensitive to positive image management (alcohol prototypes) and are highly motivated to avoid negative outcomes (alcohol expectancies). Still, they tend to be less influenced by pervasiveness (alcohol norms) since Koreans are already exposed to their excessive drinking culture and possibly got accustomed to it^[54].

Overall, the findings of this study reinforce the previously investigated relationship between exposure to alcohol references on social media and intention to engage in risky online behavior^[2-6]. Additionally, the current study is meaningful given that it specifically elucidated which type of alcohol-related photo and which type of internal factor is most influential in alcohol-related cognition based on an online experiment. A 10-year systematic review using 204 studies for the relationship between social media use and alcohol consumption showed that only 14 studies (7%) used an exper-

iment^[7], one of the most valid methods to identify a causal relationship. This research also contributed to the Cognition Theory by reconfirming the Prototype Willingness Model and adding a new theoretical explanation using the Emotional Contagion Theory. Furthermore, this study provides practical implications on how interventions aimed at decreasing problems resulting from posting alcohol-related photos on social media. For instance, intervention managers can put more emphasis on regulating the photos depicting people with alcohol (i.e., alcohol-in-use), especially when it comes to photos depicting people with wine. Also, culture-specific intervention programs can be designed based on the results of this study. For example, since Americans showed higher intention to post alcohol-related content when exposed to wine or alcohol-in-use photos, those photos should be regulated more rigorously. Additionally, Koreans showed consistently high intention to engage in the behavior regardless of the photo types or alcohol types, so interventions in Korean culture should aim to regulate content more broadly. Despite these contributions, the findings still require further study and deliberation due to their limitations.

5.1. Conclusion

This study provides implications on the literature on the Emotional Contagion Theory and Prototype Willingness Model as well as on designing effective intervention programs for anti-drinking. That is to say, the findings from this study may contribute to the interventions to decrease alcohol-related posts and problems resulting from this behavior. For example, since the photo of wine and the photo with alcohol in use influence factors of risky behavior for American young adults, interventions could focus on those specific types of photos more carefully. On the other hand, since Koreans show high intention to post regardless of the types of photos and alcohol, alcohol-related content on social media should be taken seriously in general. Moreover, since Korean young adults are influenced by their cognitions regarding alcohol consumption, campaign programs thoroughly designed to emphasize negative images of drinkers and the severe outcomes of drinking would be an effective way to prevent risky alcohol-related behavior among Koreans.

5.2. Limitations and future directions

Although the current study may offer a helpful step toward understanding alcohol-related posting behavior, its implications are constrained by several limitations. First, it is impossible to corroborate the process of how different alcohol-related photos evoked varying levels of posting intention in detail. The current work can be developed into a mediation model to catch the process of emotional contagion by adding variables like happiness or positive attitudes toward alcohol-related content as mediating factors. Also, it is difficult to generalize the conclusion for the cross-sectional property of this study. The study was conducted with a small number of samples and limited to two particular cultures. A wider group of samples can be considered in future research to examine the age and racial/ethnic differences in greater detail. Moreover, the reliance on self-reported measures is imperfect. Although self-report measures used in the current study are well-validated measures, participants may provide what they perceive to be more desirable answers than what reflects their reality. Besides, since the questionnaires were administered online, the participants may be biased in favor of those with high familiarity with the Internet.

Due to the limitations, more empirical studies are suggested for future research. Other variables should be taken into consideration to improve and generalize the conclusions. For example, Westgate *et al.*^[64] suggested that Facebook posting positively predicts alcohol cravings. This factor can

be taken as an additional variable as it can mediate the relationship between exposure to specific kinds of photos and alcohol-related posting.

Funding

This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF- 과제 번호)(NRF-2020S1A3A2A02095619).

Conflict of interest

The authors declare no conflict of interest.

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