

**A Content Analysis of U.S. Non-Profit Organizations'
College Drinking Awareness Facebook Pages:
Interactivity and Engagement**

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The purpose of this study is to analyze contents of Facebook for U.S. non-profit organizations related to college drinking, in order to understand how and to what extent the non-profit organizations related to U.S. college students' drinking have used Facebook to target and communicate with people to increase their engagements in the social media. Based on the analysis of a total of 153 posts in the top five Facebook pages of U.S. non-profit organizations for a one year period in the area of college drinking, two types of interactivity were examined: interactive feature and message type. The results showed that the most common interactive feature the posts used was photo or image sharing (92.2%). In terms of message type, about 50% of the posts contained a message regarding calls for

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involvement, and threat appeal was used most. Moreover, some relationships between interactive feature/ message type and engagement were found. Results indicate that non-profit organizations related to college drinking have not utilized Facebook's interactive features and messages effectively to attract U.S. college students to engage in their Facebook pages.

Key words : college drinking, interactivity, engagement

1. Introduction

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported that college drinking (e.g., binge drinking and underage drinking) is one of the most serious public health problems that college students are facing in the U.S.A (NIAAA, 2013). According to NIAAA's 2013 college drinking fact sheet, 80 percent of U.S. college students drink alcohol and almost 50 percent of them binge drink. Moreover, underage drinking is widespread, with about 10.4 million young people aged 12 through 20 who drank more than "just a few sips" of alcohol in 2009 and more than 80 percent of teens under 18 years old have had at least one drink (NIAAA, 2013). Besides being illegal to drink underage, the problem is that there is a strong correlation between college drinking among students aged 18-24 and other serious risks such as death, serious injuries, increased risk for physical and sexual assault,

academic problems and health problems (NIAAA, 2013).

There are serious negative health and social consequences of college student drinking. Among U.S. college students, the most widely used social media platform is Facebook (Pew Research Center, 2018a, 2018b). Facebook has accordingly become a prominent social media platform for many U.S. non-profit organizations that focus on the issue of college drinking, for example Aware Awake Alive. These organizations have used Facebook and other social media to increase awareness of the risk of drinking and to discourage college students' risky drinking behaviors.

In particular, since the popularity of Facebook among college students, contents posted on Facebook have the high potential to reach a large population of college students and to influence them. However, if the non-profit organizations have not utilized Facebook effectively to attract college students to engage in their Facebook pages, they do not take full advantage of powerful impacts of Facebook.

So far, most studies examining factors that affect people's intention to join pages have been focused on profit-organizations' social media such as Twitter and Facebook (e.g., brand pages and virtual brand community) (Chi, 2011; Logan, 2014; Muk & Chung, 2014). However, despite some studies about U.S. non-profit organizations' social media use (Park, Rogers & Stemmler, 2011; Waters, Burnett, Lamm, & Lucas, 2009; Waters & Jones, 2011), little is known about the contents of Facebook for non-profit organizations related to college drinking. In particular, because not only interactivity of a medium (modality interactivity) and message interactivity enhance the persuasive potential of messages on the

nature of user engagement (Oh & Sundar, 2015), but also people's social media use is related to engagement (Paek, Hove, Jung, & Cole, 2013), we need to consider role of interactivity and engagement in social media to promote health behaviors in terms of health communication perspectives.

Therefore, the purpose of this study is to analyze contents of Facebook for U.S. non-profit organizations related to college drinking, with focusing on digital media's interactivity, in order to understand how and to what extent the U.S. non-profit organizations related to U.S. college students' drinking have used Facebook to target and communicate with people to increase their engagements in the social media. Because college drinking is also one of the most serious public health problems that college students are facing in South Korea (Korea Center for Disease Control and Prevention (KCDC), 2017), the results will provide insights into how non-profit organizations in South Korea can strategically use their social media to increase individuals' engagements for their health.

2. Literature review

1) Influence of social media on alcohol related behaviors among college students

Previous studies revealed that exposures to alcohol-related contents through social media affect adolescents and young adults' offline alcohol

behavior (Moreno & Whitehill, 2015). Although this influence could be similar to the effects of traditional media such as TV, and movies, unlike traditional media, social media has contents that is generated and posted by adolescents' peers. That strong source of influence, peer modeling, can easily advance a warped sense of normative perceptions among adolescents who have many SNS friends and frequent visitors to these sites. That sense of similar to self can promote the imitation of behavior and makes SNSs a large source of influence on adolescents in terms of alcohol use (Huang et al., 2014; Moreno et al., 2010). Moreover, contact with risky online content can directly influence the risk behaviors of adolescents as well as affect the risk behavior of their friends (Huang et al., 2014).

In terms of content analysis of social media, so far, previous studies have investigated profile pictures on social media (Egan & Moreno, 2011; Moreno et al., 2010). Considering that images depicting alcohol use displayed in the social media affect adolescents' and college students' alcohol-related behaviors, two studies have investigated contents which display images and text depicting alcohol use on social media such as Facebook (Egan & Moreno, 2011) and MySpace (Moreno et al., 2010). In terms of contents of alcohol references on social networking sites, Moreno et al. (2010) conducted content analysis of displayed alcohol references on MySpace for people aged 17 to 20. The results showed that more than half of profiles (56.3%) among 400 profiles contained references to alcohol use. Moreover, among the alcohol references, the most common alcohol reference was explicit use, which included

statements in regard to alcohol use. In terms of the image references, the majority (about 94%) of image references were personal photographs depicting profile owners engaging in alcohol use (Moreno et al., 2010). Egan and Moreno (2011) examined college male students' Facebook profiles and found that about 85 percent of profiles presented alcohol references and 8.5 alcohol references was the average number of alcohol references per profile. When the college students are 21 or older (legal drinking age), alcohol references were 4.5 times more than underage students. Moreover, they found that the greater number of Facebook friends, the greater the number of alcohol references were displayed.

Since it is important to reduce college students' risky drinking behaviors, the role of non-profit organizations is important to help college students reducing their risky drinking. Therefore, it warrants investigating how non-profits organizations have used Facebook to help college students reducing their risky drinking and to encourage their engagements. However, despite the importance of thorough investigations of contents of Facebook for non-profit organizations related to college drinking, little is known about the context under which engagement and interactivity have been used on their Facebook pages. Therefore, given the potential influence of their contents on college students' drinking behaviors, it is necessary to investigate the aspects of engagement and interactivity in their Facebook pages.

2) Non-profit organizations' use of social media

Extant studies about non-profit organizations' use of social media have revealed that non-profit organizations have not used Facebook effectively (Park et al., 2011; Waters et al., 2009; Waters & Jones, 2011). Park et al. (2011) examined three aspects of contents (i.e., interactive features, social media channels, and brand/advertising techniques) to examine health organizations' use of interactive features and social media channels on Facebook. They defined interactive features as 14 interactive features: "comments/posts, e-mail, photo- or image-sharing, video-sharing, blogging, instant messaging, mobile/text messaging, e-cards, RSS feed, e-games, e-mail updates, widgets, links to bookmark the page, and e-mail newsletters" (p. 67). The results showed although non-profit organizations are active in posting to Facebook, they did not effectively use interactive features of social media or branding techniques. Waters et al. (2009) also found that non-profit organizations have not used interactive features of Facebook and YouTube effectively to develop social networking relationships with their stakeholders (Waters et al., 2009; Waters and Jones, 2011).

3) Social media's interactivity: Theory of Interactive Media Effects (TIME)

Social media platforms allow for higher interactive communication and message sharing online (Kaplan & Haenlein, 2010). Interactivity is

“the condition of communication in which simultaneous and continuous exchanges occur, and these exchanges carry a social, binding force” (Rafaeli & Sudweeks, 1997, p. 4). Sundar, Jia, Waddell and Huang (2015) propose a theory of interactive media effects (TIME). The TIME model conceptualizes technological attributes of interactive media as “affordances” and argues that these affordances can be perceived by searching for cues on the interface of the system. The TIME model explains that affordances can affect users’ cues and actions. In particular, people’s action afforded by the interface increases interactivity such as modality interactivity, message interactivity, and source interactivity. This interactivity leads to people having higher engagement (e.g., absorption, elaboration, contribution, and repeat usage) with media.

The TIME model defines that the medium or modality interactivity as an interactive tool offered by the interface (e.g., clicking, scrolling, dragging, and hovering). The message interactivity refers to the nature of exchanges between the users and the system or other users, such as the hierarchical layers of hyperlinks, buttons, and navigation tools. When people perceive that the system is possibly responding to them, they are more likely to engage in the website. The source interactivity is defined as how many users perceive themselves as the source of communication by creating and modifying content (Sundar, Jia, Waddell, & Huang, 2015).

One empirical study by Fox, Cruz, and Lee (2015) investigated whether users’ anonymity and level of interactivity with sexist content on social media influenced sexist attitudes and offline behavior, based on the

TIME model. The results showed that writing one's own sexist tweets (source interactivity) led to more negative attitudes toward sexism and interacting with sexist content online affect offline behaviors.

Because the interactivity is a potential factor to influence people's engagement and their online and offline behaviors (Fox, Cruz, & Lee, 2015; Sundar, Jia, Waddell, & Huang, 2015), it needs to be examined how and to what extent non-profit organizations related to college drinking have used Facebook's interactivity effectively. Thus, this study proposes the following research questions:

RQ1: What kinds of interactive features do non-profit organizations related to college drinking use on Facebook?

RQ2: To what extent are interactive features associated with levels of audience engagement (e.g., number of likes, number of shares, and number of comments)?

Besides, the message content of Facebook for non-profit organizations related to college drinking also influence individuals' use of social media (Paek, Kim, & Hove, 2010). In terms of messages, one study by Paek, Kim and Hove (2010) examined the message features in 934 anti-smoking videos on YouTube, in terms of types of message appeal (threat, social and humor) and relations between message characteristics and YouTube's interactive audience responses (number of viewers, viewer ratings, and number of comments). They operationally defined threat appeal as "the overall impression is that you will suffer in some way if you smoke by showing cancer patients, gross teeth or lungs, scary

images of people who suffer from smoking-related diseases,” social appeal as “visuals and major headline convey that you will have more friends, dates, and popularity if you do not smoke,” and humor appeal as “play on words, puns, use of incongruous visuals or nonsensical statements” (p. 1091). The results showed that the most prevalent message appeal was threat appeal. Moreover, there were main effects of message appeals on viewer responses (number of viewers, viewer ratings, and number of comments). In particular, threat appeals were more effective in drawing viewers’ attention than social appeals.

Given the lack of studies that examine the message content of Facebook for non-profit organizations related to college drinking, an updated examination of the contents of their Facebook pages is needed. Thus, this study proposes the following research questions:

RQ3: What kinds of message types (e.g., delivering information, encouraging prevention, and calls for involvement) have the non-profit organizations’ Facebook pages employed?

RQ4: What kinds of message appeals (e.g., threat, social, and humor) have the non-profit organizations’ Facebook pages employed?

RQ5: To what extent are message types and message appeals associated with people’s engagements (e.g., number of likes, number of shares, and number of comments)?

3. Methods

1) Sample Materials

This study conducted a content analysis of wall posts on Facebook for U.S. non-profit organizations related to college drinking. To select Facebook pages for non-profit organizations related to college drinking, systematic steps were taken.

(1) Selection of non-profit organizations

First, this study identified U.S. non-profit organizations related to college drinking by using Charity Navigator (<https://www.charitynavigator.org/>), which navigates and evaluates charities in the U.S. Previous studies on non-profit organizations used the site to gather information on non-profits (Seo, Kim, & Yang, 2009; Gordan, Knock, & Neely, 2009). Given that binge drinking and underage drinking are the most serious college drinking problems in the U.S.A. (NIAAA, 2013), by using search terms such as “binge drinking,” and “underage drinking,” a list of non-profit organizations was generated and those highly related to college drinking were selected. With this process, this study identified 19 non-profit organizations. Second, in order to find out other non-profit organizations which were not shown in Charity Navigator, this study added 14 non-profit organizations through Google search by using search terms such as “binge drinking,” “underage drinking,” “non-profit organization,” and “Facebook.” Thus, this study is based on a total of

33 non-profit organizations related to college drinking.

(2) Selection of Facebook pages

After identifying the 33 non-profit organizations, relevant websites and Facebook pages for these non-profit organizations were searched in this study. Among 33 non-profit organizations, 25 of them have their own Facebook pages. This study examined top 5 Facebook pages based on the highest number of fans: Mothers Against Drunk Driving (MADD), Students Against Destructive Decisions (SADD), Foundation for Advancing Alcohol Responsibility, Parents Empowered and Aware Awake Alive. The sample Facebook posts were gathered by selecting every third post in the top 5 Facebook pages related to college drinking for a one year period between November 1, 2014 and October 31, 2015, in order to cover the entire annual academic cycle. The unit of analysis is an individual wall posting on non-profit organizations' Facebook pages related to college drinking.

2) Measurement

Content analysis of wall posts on Facebook was measured for three dimensions: 1) interactive features, 2) message type, and 3) engagement.

(1) Interactive features

Each wall post on Facebook was coded for the presence or absence of six types of interactive features, operationally defined as functions for

interaction among participants by sharing posts and by posting their comments. These items were adapted from Park et al. (2011): 1) photo-or image-sharing, 2) video sharing, 3) link to a news article, 4) link to a website, 5) hashtag, and 6) e-mail.

(2) Message type

To see what types of message have been used on wall posts, messages on wall posts were categorized into 1) format of content, 2) message type, and 3) message appeal.

First, format of content was analyzed for 1) text only, 2) visual only (photo/image, and video), and 3) a combination of text and visual content. Second, a message type, operationally defined as an intended purpose of the message on wall post, was measured using six categories: 1) delivering information (e.g., statistics, and news articles), 2) prevention (e.g., focusing on encouraging people's preventive behaviors), 3) calls for involvement (e.g., encouraging participation to campaign, 4) supporting victims or survivors, 5) events or activities they held, and 6) other. Third, in terms of message appeals, a message appeal was operationally defined as an emotional appeal. This was measured by four categories: 1) threat appeal, 2) social appeal, 3) humor appeal, and 4) other. If a message emphasized negative health consequences of drinking such as disease, and death, it was coded as threat appeal. If a message emphasized social benefits or losses as consequences of drinking (e.g., social relationships, family, friends), it was coded as social appeal. If a message contained a play on word, puns, use of an incongruous visual or

a nonsensical statement, it was coded as humor appeal (Paek et al., 2010).

(3) Engagement

Many researchers have defined engagement as “the simple act of participating in an online environment” (Jayasingh, & Venkatesh, 2015, p. 20). The degree of engagement of each wall post was examined by three categories: 1) number of likes, 2) number of shares, and 3) number of comments on the Facebook page (Cvijikj, & Michahelles, 2013).

3) Coding procedure and Intercoder reliability

Coders were trained to implement the coding system by reviewing the coding manual and completing practice sessions. Then, the two coders independently coded 20 percent of the sample. Intercoder reliability was calculated by using Krippendorff's alpha. Intercoder reliability scores ranged from 0.78 to 1.00. Specifically, they are: format of contents (1.00), comments/posts (1.00), photo or image sharing (1.00), video sharing (1.00), links to news article (0.78), links to website (0.92), hashtag (1.00), delivering information (1.00), prevention (0.87), calls for involvement (0.93), supporting victims or survivors (1.00), activities or events held (1.00), threat appeal (1.00), social appeal (1.00), number of likes (1.00), number of shares (1.00), and number of comments (1.00). Each of the two coders independently coded the rest of the wall posts

on Facebook allocated for this study.

4. Results

In the top five Facebook pages of non-profits in the area of college drinking, a total of 153 posts were gathered for a one year period between November 1, 2014 and October 31, 2015. These 153 posts were retrieved from the Facebook pages of the following organizations: Mothers Against Drunk Driving (MADD) ($n=16$, 10.5%), Students Against Destructive Decisions (SADD) ($n=35$, 22.9%), Foundation for Advancing Alcohol Responsibility ($n=35$, 22.9%), Parents Empowered ($n=32$, 20.9%) and Aware Awake Alive ($n=35$, 22.9%).

First, in terms of format of contents, three types of format of contents were shown. About 95% of the posts used both text and visual contents ($n=144$, 94.1%). Only six posts used text only ($n=6$, 3.9%), and three posts used visual only (photo, image or video) ($n=3$, 2.0%). Second, among 153 posts, all posts except one received likes ($n=152$, 99.3%). The number of likes ranged from 0 to 1207 ($M=60.25$, $Mdn=19$, $SD=152.24$). About 80% of posts were shared ($n=122$). The number of shares ranged from 0 to 2231 ($M=40.86$, $Mdn=3$, $SD=204.75$). In terms of comments, 57 posts received comments (37.3%). The number of comments ranged from 0 to 69 ($M=2.68$, $Mdn=0$, $SD=7.79$). <Table 1> shows total number of likes, shares, and comments for all posts on each Facebook page. Last, on only seven posts (4.6%), the

〈Table 1〉 Summary of Posts by page

Facebook	Posts by Page (N)	Text only (N)	Visual only (N)	Both (N)	Likes (Total for All posts) (N)	Shares (Total for All posts) (N)	Comments (Total for All posts) (N)
Mothers Against Drunk Driving	16	0	2	14	4788	4727	173
SADD-Students Against Destructive Decisions	35	4	0	31	1250	519	74
Foundation for Advancing Alcohol Responsibility	35	1	0	34	381	115	25
Parents Empowered.org	32	0	1	31	2081	640	93
Aware Awake Alive	35	1	0	34	718	251	45
Total	153	6	3	144	9218	6252	410

administrator responded to a page member's posts or comments.

1) Interactive features

An interactive feature was measured to examine how and to what extent interactive functions are used to allow people to share contents of posts or to post comments. The results showed that the majority of the interactive features of the posts used was photo or image sharing ($n=141$, 92.2%), followed by: links to website ($n=55$, 35.9%), links to news article ($n=40$, 26.1%), hashtag ($n=38$, 24.8%), and video sharing

($n=7$, 4.6%).

In order to examine to what extent interactive features are associated with people's engagement, a t-test was conducted. For the t-test, each interactive feature (photo or image sharing, links to website, links to news article, hashtag, and video sharing) were coded as presence (1) or absence (0). The analysis found a statistically significant effect of presence/absence of a news article link in a post on the number of likes the post received ($t(151)=2.31$, $p<.05$). Results showed that there was a difference between posts with links to news article ($n=40$, $M=13.08$, $SD=11.39$) and those without links to news article ($n=113$, $M=76.95$, $SD=174.16$). However, no significant relationships were found between other interactive features and people's engagements, in terms of the number of likes the post received: photo or image sharing, $t(151)=-.59$, $p>.05$; video sharing, $t(151) =.25$, $p>.05$; a link to a website, $t(151) =-.11$, $p>.05$; and hashtag, $t(151)=.41$, $p>.05$ (See <Table 2>).

Furthermore, there were no effects of interactive features on people's engagement, in terms of the number of shares, and the number of comments the post received. The number of shares are as follows: photo or image sharing, $t(151)=-.41$, $p>.05$; video sharing, $t(151)=.16$, $p>.05$; links to news article, $t(151)=1.28$, $p>.05$; links to website, $t(151)=-.05$, $p>.05$; and hashtag, $t(151)=.70$, $p>.05$. The number of comments are as follows: photo or image sharing, $t(151)=-.31$, $p>.05$; video sharing, $t(151)=-.06$, $p>.05$; links to news article, $t(151)=1.86$, $p>.05$; links to website, $t(151)=.94$, $p>.05$; and hashtag, $t(151)=.38$, $p>.05$ (See <Table 2>).

〈Table 2〉 Interactive features on people's engagement

	Engagement		
	Number of likes	Number of shares	Comments
Photo or image sharing	$t(151)=-.59$	$t(151)=-.41$	$t(151)=-.31$
Links to websites	$t(151) =-.11$	$t(151)=-.05$	$t(151)=.94$
Links to news article	$t(151)=2.31^*$	$t(151)=1.28$	$t(151)=1.86$
Hashtag	$t(151)=.41$	$t(151)=.70$	$t(151)=.38$
Video sharing	$t(151) =.25$	$t(151)=.16$	$t(151)=-.06$

$P<.05^*$

2) Message type/Message appeal

(1) Message type

In terms of message type, results showed that about 50% of the message types were calls for involvement ($n=77$, 50.3%), followed by delivering information ($n=76$, 49.7%), prevention (focusing on encouraging people's preventive behaviors) ($n=33$, 21.6%), their activities or events held ($n=24$, 15.7%), supporting victims or survivors ($n=3$, 2%), and others ($n=10$, 6.5%).

Examples of message type were: "Connect with your teen and remind them to avoid underage drinking," "Join us and follow...", "Follow the link below" (calls for involvement); "Alcohol poisoning kills 6 Americans every day! According to CDC's 2015 Vital Signs report, 5% are people ages 15 to 24...", (delivering information); "Never forget that it's okay to ask for help," "When underage drinker...", the consequences can be

deadly-and preventable,” “Say no to underage drinking” (prevention); “We hope to reach even more victims and survivors to spread the word that MADD is here for them” (supporting victims or survivors).

In order to examine to what extent message types are associated with people’s engagement, a t-test was conducted. For the t-test, each message type (calls for involvement, delivering information, prevention, activities or events held, supporting victims or survivors, and others) were coded as presence (1) or absence (0). There were effects of message contents on people’s engagements, in terms of the number of likes: prevention, $t(151)=-2.31, p<.05$ and supporting victims or survivors, $t(151)=-2.09, p<.05$. Specifically, posts with prevention messages ($n=33, M=113.70, SD=280.03$) had a higher number of likes than those without prevention messages ($n=120, M=45.55, SD=86.64$). Moreover, posts that supported victims or survivors ($n=3, M=240.33, SD=51.60$) had a higher number of likes than those that did not support victims or survivors ($n=150, M=56.65, SD=151.46$). However, there were no effects of message type on people’s engagements, in terms of the number of likes: delivering information, $t(151)=1.01, p>.05$; calls for involvement, $t(151)=-.85, p>.05$; their activities or events held, $t(151)=.72, p>.05$; and others, $t(151)=-.85, p>.05$ (See <Table 3>).

In terms of the number of shares, there was an effect of prevention message on people’s engagements, $t(151)=-2.83, p<.05$. Posts with prevention messages ($n=33, M=128.06, SD= 429.92$) had a higher number of shares than those without prevention messages ($n=120, M=16.88, SD=34.03$). However, there were no effects of message type

on people's engagements, in terms of the number of shares: delivering information, $t(151)=-.33, p>.05$; calls for involvement, $t(151)=-.74, p>.05$; supporting victims or survivors, $t(151)=-.75, p>.05$; their activities or events held, $t(151)=.97, p>.05$; and others, $t(151)=.39, p>.05$ (See <Table 3>).

In terms of the number of comments, there were no effects of message type on people's engagements: delivering information, $t(151)=.12, p>.05$; prevention, $t(151)=-1.79, p>.05$; calls for involvement, $t(151)=-1.12, p>.05$; supporting victims or survivors, $t(151)=-1.81, p>.05$; their activities or events held, $t(151)=.55, p>.05$; and others, $t(151)=-1.19, p>.05$ (See <Table 3>).

<Table 3> Message type/ message appeal on people's engagement

	Engagement		
	Number of likes	Number of shares	Comments
Calls for involvement	$t(151)=-.85$	$t(151)=-.74$	$t(151)=-1.12$
Delivering information	$t(151)=1.01$	$t(151)=-.33$	$t(151)=.12$
Prevention	$t(151)=-2.31^*$	$t(151)=-2.83^*$	$t(151)=-1.79$
Activities or events they held	$t(151)=.72$	$t(151)=.97$	$t(151)=.55$
Supporting victims	$t(151)=-2.09^*$	$t(151)=-.75$	$t(151)=-1.81$
Others	$t(151)=-.85$	$t(151)=.39$	$t(151)=-1.19$
Threat appeal	$t(151)=-.75$	$t(151)=-3.05^*$	$t(151)=-.80$
Social appeal	$t(151)=.51$	$t(151)=.04$	$t(151)=.43$

$P<.05^*$

(2) Message appeal type

The majority of contents did not contain any of three appeal type ($n=125$, 81.7%). The message appeal type was shown in 35 posts: threat appeal ($n=29$, 19%), and social appeal ($n=6$, 3.9%). No humor appeal was shown. Examples of message appeal were: "10,076 people were killed last year in drunk driving crashes" (threat appeal); "A true friend won't turn their back when you are partying... Be a friend!" (social appeal).

<Table 3> shows that there was an association between threat message appeal and people's engagements, in terms of the number of shares, $t(151)=-3.05$, $p<.05$. In particular, posts with threat appeals ($n=29$, $M=142.52$, $SD=456.42$) had a higher number of shares than those without threat appeals ($n=124$, $M=17.09$, $SD=37.14$). However, there were no effects of social appeals on the number of shares, $t(151)=.04$, $p>.05$. Furthermore, there were no effects of message appeals, in terms of the number of likes and the number of comments. The number of likes are: threat appeal, $t(151)=-.75$, $p>.05$, and social appeals, $t(151)=.51$, $p>.05$. The number of comments are: threat appeal, $t(151)=-.80$, $p>.05$, and social appeals, $t(151)=.43$, $p>.05$.

5. Discussion

This study examined 153 posts for a one year period in the top five Facebook pages of U.S. non-profit organizations in the area of college

drinking, in terms of interactive features and message types. Overall, most of the posts (94.1%) used both text and visual contents. First, in terms of interactive features, the most common interactive features the posts used was photo or image sharing. Moreover, among the interactive features, there were relationships between a link to a news article and the number of likes. This result is in line with Park et al. (2011). Park et al. (2011) revealed that photo-sharing was the only interactive feature that non-profit organizations used.

Second, in terms of a message type, about half of the posts contained a message regarding calls for involvement, to encourage people's involvement. Moreover, among message types, prevention had relationships between the number of likes and the number of shares. Supporting victims or survivors had a relationship between the number of likes. Last, in terms of message appeal, the message appeal type was shown in 35 posts (22.9%). Threat appeal was used most, and there was a relationship between threat appeal and the number of shares. This result is in line with Paek et al. (2010). They also found that threat appeals (56/8%) were used more than social (9%) and humor appeal (15.3%) in antismoking YouTube videos.

This study found the relationships between a link to a news article and the number of likes as well as the number of comments, showing that posts without a link to a news article had a higher number of likes than those with a link to a news article. This implies that use of links to news article is not effective to increase people's engagements, because of the higher mean value of posts without links to news article than

those with links to news article. Results of this study indicate that news articles decrease people's engagement. Specifically, among 40 posts with a news link, 39 posts added some commentary with a news link. Only one post had simply the link to the article. Moreover, the types of news articles these organizations shared are as follows: delivering information ($n=31$), calls for involvement ($n=12$), prevention ($n=6$), and events they held ($n=5$).

The results point out a theoretical implication. The results of this study indicate how this model might not work for Facebook. TIME model suggests that the nature of exchanges between the users and the system like hyperlinks increase users' engagement in the website (Sundar et al., 2015). However, the results of this study imply that a news article through a news link which delivers information does not increase people's engagements effectively, in terms of the number of likes, the number of shares, and the number of comments. Moreover, other interactive features also did not show relationships between their interactive features and engagement. It is possible that hyperlinks are not effective on Facebook as Facebook allows many other interactive features. Moreover, because visual contents are more likely to be encoded easily, quickly and deeply into memory, visual contents can gain more superior salience in the perception than textual messages (Geise & Baden, 2014). Therefore, given that Facebook used both text and visual contents in most of the posts (94.1%), people are more likely to engage with visual contents and hyperlinks are not effective on Facebook.

Another key finding is that there were relationships between message

type and people's engagement. Results indicate that a prevention message and supporting victims or survivors increase people's engagement in terms of message type. Moreover, it implies that using threat appeal is an effective way to increase people's engagement, in terms of message appeal. Previous studies revealed that fear appeals are effective to increase the intentions to engage in preventive behaviors (Cho & Salmon, 2006) and to enhance the recommended behaviors (Siu, 2010). Witte and Allen's (2000) meta-analysis of fear appeals also revealed the effects of fear appeals. They suggested that strong fear appeals evoke a high level of perceived susceptibility and severity, and are more persuasive than weak fear appeals. Therefore, the results point out practical implications in the U.S as well as Korea. About 83% of people aged in 20s have used social media in Korea (Korea Information Society Development Institute, 2018). In order to increase people's engagement and participation on Facebook and further to reduce college students' risky drinking behaviors, non-profit organizations related to college drinking need to increase their efforts to use effective messages and message appeals on the Facebook pages.

The limitations of this study should be acknowledged. First of all, in terms of sample size, this study has a small sample of 153 posts in the top five Facebook pages related to college drinking. Because this study selected only every third post in the top five Facebook pages, it needs a further study by extending samples including every post in the top 10 non-profit organizations' Facebook pages in the area of college drinking. Second, because this study is based on content analysis, this study

examined the level of engagements based on the number of likes, the number of shares, and the number of comments on the posts, in order to examine the relationships between interactive feature/ message and engagements. However, we are unable to investigate whether posts with a higher number of likes, number of shares or number of comments represent those with high engagements. Therefore, experimental studies examining the relationships between interactive feature/message and users' engagements are warranted. Last, this study only evaluated non-profit organization's Facebook pages in the area of college drinking in the U.S. A further study is also needed to be updated and compare Facebook use of non-profit organizations and profit organizations, in order to better understand the effective use of Facebook.

In conclusion, we need to indicate that non-profit organizations related to college drinking have not utilized Facebook's interactive features and messages effectively to attract college students to engage on their Facebook pages. This study points to theoretical and practical implications in the U.S. and South Korea. This study suggests more scholarly attention and non-profit organizations' efforts are needed, in order to use Facebook's interactivity effectively, in terms of content and message on Facebook, which can help college students reduce risky drinking.

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대학생 음주와 관련된
미국 비영리단체 페이스북의 내용분석:
상호작용성(interactivity)과
참여(engagement)를 중심으로

강한나

(한남대학교 정치언론학과 조교수)

국내뿐만 아니라 미국에서도 대학생들의 음주 행위는 그들의 건강과 밀접한 관련이 있기 때문에 심각한 문제이다. 이에 본 연구는 절주 운동을 하는 미국 비영리기관들이 미국 대학생들이 많이 이용하는 페이스북을 얼마나 그리고 어떻게 활용하는지를 조사하고자, 비영리기관들의 페이스북 페이지의 내용을 분석하였다. 5개의 미국 비영리단체의 페이스북에 1년 동안 게재된 포스팅 중, 총 153개를 분석에 사용하여, 상호적 특성(interactive feature)과 메시지 타입(message type)을 통한 상호작용성(interactivity)을 분석하였다. 분석 결과, 가장 많이 사용된 상호적 특성은 사진 또는 이미지 공유(92.2%)로 나타났다. 가장 많이 사용된 메시지 타입으로는 관여 유도(calls for involvement)가 50%로 가장 많았고, 소구 방식으로는 공포 소구가 가장 많이 사용되는 것으로 나타났다. 또한, 상호적 특성과 메시지 타입은 대학생들의 참여(engagement)와 관련이 있는 것으로 나타났다. 연구결과는 대학생 음주와 관련된 미국 비영리단체들은 대학생들의 참여를 이끌어내기 위한 페이스북의 상호작용 기능을 효과적으로 사용하지 못하고 있음을 보여준다.

주제어 : 대학생 음주, 상호작용성, 참여