ASSESSING THEORETICAL MEDIATORS OF CAMPAIGN-INDUCED COMMUNICATION IN THE CONTEXT OF SOCIAL NORMS CAMPAIGNS

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ABSTRACT

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The present paper examines the role of campaign-induced communication on the effects of a social norms campaign by focusing on cognitive elaboration, perceived injunctive norms, and message recall as mediating variables. Participants (n = 252) read an injunctive norms campaign message about choosing not to drink at parties or when socializing and were randomly assigned to one of three conditions (*control*: received no prompts, *prompt only*; received prompts to engage in interpersonal communication about the campaign message with close others during the following week; *prompt & plan*: received prompts to engage in interpersonal communication with close others during the following week and to write a plan for the communication). The results revealed that the prompt (either alone or with the plan) significantly motivated participants to engage in positive conversations about the campaign message during the next week. Similar to past findings (Morgan et al., 2018), a higher frequency of positive conversations about the campaign message indirectly predicted better behavioral outcomes via higher cognitive elaboration. The findings suggest that social norms campaign developers should be encouraged to design social norms messages with a brief prompt to motivate the target audience to engage in interpersonal communication and need to account for such interpersonal communication and its indirect effects in evaluating campaign messages.

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INTRODUCTION

Many mass media campaigns have been conducted to influence individuals' health-related behaviors. Although the effect sizes are generally small, past meta-analyses found that mass-mediated health campaigns produced better behavioral changes than when such campaigns were absent (e.g., Snyder et al., 2004; Anker et al., 2016). The effects of mass media campaigns may not only be influenced by direct exposure to the campaign messages. According to the two-step flow theory (Katz & Lazarfeld, 1955), mass media messages may directly influence message recipients and indirectly influence those who engage in interpersonal communication about the messages with them. Guided by Katz and Lazarfeld (1955), Southwell and Yzer (2007) underscored the role of interpersonal communication in mass media campaigns in that interpersonal communication motivated by mass media campaigns can either mediate or moderate the effect of such campaigns. Therefore, the small effect size of mass-mediated health campaigns observed in past research might be explained, at least in part, by a failure to capture the impact of campaign-generated interpersonal communication. A recent meta-analysis (Jeong & Bae, 2018) confirmed that when people are exposed to a mass media health campaign, the odds of health-related outcomes were significantly higher in the presence of interpersonal communication induced by campaign messages than in the absence of such communication.

Southwell and Yzer (2007) suggest that interpersonal communication can mediate the relationship between exposures to mass media campaigns and campaign outcomes as interpersonal communication about campaigns can lead to (1) higher cognitive elaboration about messages, (2) learning injunctive norms regarding target behaviors, and (3) better recall of the campaign messages. Although much research has been done in investigating the effect of

campaign-induced interpersonal communication since Southwell and Yzer (2007) 's suggestions, only a small number of studies have focused on how campaign-induced interpersonal communication affects the outcome of health-related mass campaign messages (i.e., Morgan et al., 2018; Dillard et al., 2020). Morgan and colleagues (2018) tested cognitive elaboration and perceived injunctive norms as mediators between interpersonal communication regarding pictorial warnings on cigarette packs and attempts to quit smoking. Similarly, Dillard and colleagues (2020) conceptualized accuracy-motivated processing (i.e., fair minded and objective evaluation of campaign messages) as a key process in explaining the effects of campaign-induced interpersonal communication.

Campaign messages based on the social norms approach have been widely used to influence individuals' behaviors across various contexts (Yamin et al., 2019). The effects of social norms campaigns are heightened by interpersonal discussion according to past literature (e.g., Rimal et al., 2015) that shows audience members' behaviors are more influenced by social norms messages when they engage in interpersonal communication after exposure to such messages. However, the mechanisms of campaign-induced communication have not been examined in the context of social norms campaigns. Based on the previous findings, the present study focuses on the role of campaign-induced interpersonal communication on the effects of social norms campaigns via three mediators: cognitive elaboration, perceived injunctive norms from proximal groups, and message recall. The goals of the present paper are to test mechanisms of the effects of campaign-induced interpersonal communication (cognitive elaboration, perceived injunctive norms, message recall) based on previous findings (Southwell & Yzer, 2007; Morgan et al., 2018) in the context of a social norms campaign. To achieve these goals, the

present paper begins with literature reviews on social norms campaigns and campaign-induced interpersonal communication. Then, hypotheses, the method, results, and discussion follow.

LITERATURE REVIEW

Social Norms Campaigns

Social norms are individuals' perceptions regarding what other people in their social groups (referent groups) do or think in a given situation (Lapinski & Rimal, 2005). Social norms can be categorized into *descriptive norms* or individuals' perceptions of the prevalence of a behavior and *injunctive norms* or perceptions about what ought to be done; Cialdini et al., 1990). Both types of perceived social norms influence behaviors, but different underlying motivations characterize each type of social norm. For example, individuals tend to conform to descriptive norms because they would like to make the right decision in a short amount of time (i.e., 'There must be a good reason why so many people engage in this behavior'). In contrast, individuals conform to injunctive norms to gain social approval and to avoid social sanctions (i.e., 'People will judge me poorly if I engage in this behavior'; Chung & Rimal, 2016).

As perceived social norms are construed at the individual psychological level, sometimes people misperceive the nature of true norms (Lapinski & Rimal, 2005). For example, college students tend to overestimate the actual number of drinks their peers consume at social events, which affects their own excessive drinking (Cox et al., 2019). Social norms campaigns provide true normative information to the audience (e.g., '80% of students at X university reported that they have 0 to 3 drinks when they party') to correct misperceived norms. Most social norms campaigns have featured descriptive norms, however, campaigns featuring injunctive norm messages are rare. Social norms campaigns have been found to be an effective tool in correcting misperceived norms and increasing health-related behaviors in various contexts, including college drinking (Hembroff et al., 2019), suicide prevention (Silk et al., 2017), and drunk-driving

(Perkins et al., 2010), among other behaviors. However, social norms campaigns are not always successful (e.g., Thombs et al., 2004; Xiao & Borah, 2020), and a meta-analysis raised concern about the small and inconsistent effects of social norms campaigns in the context of alcohol misuse (Foxcraft et al., 2015).

One of the reasons for the inconsistent findings of the effects of social norms campaigns could be because interpersonal communication about the campaign messages has been omitted when assessing the effects of those campaigns. There are at least two reasons that the role of interpersonal communication should be examined in evaluating social norms campaigns. First, interpersonal communication plays a crucial role in building perceived social norms and boosting social norms' effects on behavioral outcomes. Social norms are a product of communicative phenomena as people learn about the prevalence and social acceptability of a target behavior by engaging in interpersonal communication with the members of a referent group (Geber & Hefner, 2019; Geber et al., 2019). Also, the effects of social norms on behavioral outcomes can be heightened by interpersonal communication (Chung & Rimal, 2016). Second, interpersonal communication about social norms campaigns can affect perceived descriptive or injunctive norms featured in the campaign message. People learn about others' perceptions via interpersonal communication and the accuracy of those perceptions can be developed through the interpersonal communication (McLeod & Chaffee, 1973). Social norms campaigns provide normative information in messages, including prevalence (actual descriptive norms) and acceptability of a behavior (actual injunctive norms). Interpersonal communication induced by social norms campaign messages among message recipients can either validate or invalidate such featured normative information (Southwell & Yzer, 2006). For example, interpersonal discussion with communication partners who support the normative information can enhance normative

effects on behavioral outcomes. Accurate normative information may be validated by recipients while talking about their estimation of descriptive and injunctive norms. For example, college students who believed in normative information from a campaign message had more accurate normative perceptions (Park et al., 2011). However, when college students do not believe normative information is accurate, they may invalidate it by not processing the social norms campaign message (Smith et al., 2006). Moreover, when the message recipients who do not believe normative information from the campaign message talk with others about their disbelief of the social norms message, other message recipients' perceived norms can be distorted or invalidated as well.

Past research recognized the importance of interpersonal communication in social norms campaigns. Interpersonal communication regarding a target behavior enhanced the effects of perceived descriptive norms on behaviors (Rimal et al., 2015; Real & Rimal, 2007) and heightened the influence of community norms on behavioral outcomes during a campaign (Rimal et al., 2013). However, the operationalizations of interpersonal discussion in the research were limited such that only the presence/absence of interpersonal discussion or a simple frequency of interpersonal discussions were measured. Thus, although past findings highlight the role of interpersonal discussion in social norms campaigns, it is still unclear why and how it can benefit or be a detriment to social norms campaign outcomes. To fully understand the dynamic between interpersonal discussion and social norms campaigns, the mechanisms of campaign-induced interpersonal communication need to be tested in the context of social norms campaigns.

Campaign-induced Interpersonal Communication (CIC)

Interpersonal communication is “a complex, situated social process in which people who have established a communicative relationship exchange messages in an effort to generate shared

meanings and accomplish social goals" (Burleson, 2010, p. 151). Burleson (2010)'s message-centered conceptualization of interpersonal communication recognizes communicators as social interactors who establish shared meaning of messages to achieve social goals and functions. This conceptualization of interpersonal communication by Burleson (2010) suggests that when people have interpersonal communication about the campaign messages, people communicate those messages to their interpersonal relations based on contextual and social information, using the shared symbols within their own community (Burleson, 2010). Such interpersonal communication about campaign messages among interpersonal relations can have positive effects on campaign outcomes (Southwell & Yzer, 2007; Salmon & Murray-Johnson, 2001). The effects of interpersonal communication about campaign messages on campaign outcomes are usually unintended and unexpected by campaign planners. Even when the campaigns clearly produce the impact of interpersonal communication on campaign outcomes, such effects are hard to capture when only direct effects of campaign message exposures are considered in evaluating interventions (Salmon & Murray-Johnson, 2001).

Campaign-induced interpersonal communication (CIC) refers to interpersonal interactions motivated by exposure to element(s) of mass-media campaigns when at least one of the interactants was exposed to the campaigns (Dillard et al., 2020). CIC explains the partial effects of mass media health campaigns on individuals' health-related outcomes, which is often not captured by the impact of direct exposure to mass-media messages. CIC is important for disseminating information from mass-media messages (Katz & Lazerfield, 1955) and for behavioral changes (Valente & Saba, 1998). Even when campaign message exposure did not directly influence the behavioral outcomes, CIC was significantly associated with those behavioral outcomes in some past studies (e.g., Van Den Putte et al., 2011; Hafstad & Aarø,

1997). These results suggest the possibility that CIC mediates the relationship between campaign exposures and campaign outcomes. In addition, CIC has shown positive direct effects on campaign outcomes in past research. In Dillard and colleagues' study (2020), a group of college students received a specific prompt to talk with other participants about PSAs regarding sugar-sweetened beverage consumption. Compared to those who did not receive the prompt to talk about the PSAs, participants who received the prompt and talked about the PSAs used more words representing cognitive processes related to campaign messages, which predicted heavy drinkers' intentions to reduce consumption of sugar-sweetened beverages. In the context of healthy sleep, participants who were asked to talk positively about a PSA reported significantly higher intentions to comply with the PSA compared to those who were asked to speak negatively about it (Robbins & Niederdeppe, 2016). A recent meta-analysis confirms that campaign-targeted goals, including behavioral outcomes (i.e., behavioral intentions, behaviors), are more likely to be achieved in the presence of CIC than in the absence of it (Jeong & Bae, 2018). Consistent with Burleson (2010)'s precondition of interpersonal communication, which is "the establishment of a communicative relationship" (p. 151), the present study limits the scope of CIC to CIC between close interpersonal relations where the sender has a clear intention to talk about the campaign message and the recipients have the intentions to receive the message. Similarly, the meta-analysis confirmed that when the CIC partners are in intimate relations with the individuals, such as peers and romantic partners, CIC had a positive impact on campaign outcomes (Jeong & Bae, 2018).

Social norms campaigns that are widely used across various target behaviors (Yamin et al., 2019) also show similar patterns where interpersonal communication heightens the campaign effects. For example, people who talked with their family or friends about a campaign topic

showed higher intentions to comply with the community-based social norms in Malawi (Rimal et al., 2013). However, it may not be simply the frequency of CIC that enhances normative effects. Instead, it is more likely to be the frequency of positively valenced conversation regarding the campaign topic that serves as a moderator between social norms and campaign outcomes (Brennan et al., 2016). Thus, it is expected that individuals who receive a prompt to talk about positive aspects of a social norms campaign message will be more likely to intend to practice a target behavior than those who do not (e.g., Burgoon et al., 1978). The following hypotheses can be proposed.

Hypothesis 1: *The prompt to engage in positive CIC about a social norms campaign message with close others (vs. no prompt) will predict a higher frequency of positive CIC.*

Hypothesis 2: *The prompt to engage in positive CIC about a social norms campaign message with close others (vs. no prompt) will predict higher intentions to practice the target behavior.*

In past studies, CIC has not always shown positive effects on campaign outcomes. David and colleagues (2006) found that CIC can yield undesirable consequences that are opposite to what the campaign advocates. In their study, participants, who were instructed to talk with their peers about an anti-drug advertisement they watched, reported significantly higher pro-marijuana normative pressure than those who watched the ad without later CIC. High sensation seekers communicated more than other participants in the chat condition, and they were likely to make pro-marijuana comments than low sensation seekers. Similar findings emerged in a longitudinal survey that showed the frequency of CIC about alcohol in general predicted positive attitudes toward general alcohol consumption and intention to consume alcohol (Mesman et al., 2020). These findings which are inconsistent with past literature findings underscore the importance of

understanding why and how CIC matters in order to specify the conditions where CIC can be effective in achieving outcomes that the campaign messages promote.

Only a few past studies have focused on why and how CIC matters. In contrast, most past research treated CIC as a simple moderator or mediator in the relationship between campaign exposure and campaign outcomes. For example, exposures to anti-smoking mass media content predicted intentions to quit smoking through the frequency/presence of CIC (Bas van den Putte et al., 2011; Jeong et al., 2015). Robbin and Nidderdepe's research (2016) also showed positively valanced CIC moderates the effects of PSAs on behavioral intentions. However, it is still not clear why and how CIC played such a role. Understanding the reasons behind the effects of CIC can help unpack the mixed results regarding the role of CIC in past research. There are three possible theoretical mechanisms regarding how CIC mediates the link between exposures to mass-media campaigns and health-related outcomes (Southwell & Yzer, 2007; Morgan et al., 2018). *First*, CIC can motivate people to engage in cognitive elaboration by thinking about campaign messages during CIC. The elaboration likelihood model (Petty & Cacioppo, 1986) suggests that high elaboration about messages yields more effective persuasive outcomes than low elaboration. CIC can directly impact cognitive elaboration, which predicts compliance with campaign messages when the CIC is positive. *Second*, CIC can yield perceived injunctive norms regarding a target behavior as individuals get to know whether their referent groups approve of such behavior while talking with them (e.g., Gerber et al., 2019). Increased perception of others' approval of a target behavior should positively predict compliance with campaigns. *Third*, individuals might recall the message more accurately by engaging CIC. CIC can reinforce information from campaigns and help individuals to retrieve such information more easily later.

To test these mediators proposed by Southwell and Yzer (2007), Morgan and colleagues (2018) conducted a longitudinal experiment regarding pictorial cigarette pack warnings. The frequency of CIC predicted participants' attempts to quit smoking through cognitive elaboration about the warning messages. The frequency of CIC significantly predicted increased perceived injunctive norms regarding quitting smoking, however perceived injunctive norms did not yield attempts to quit smoking. Cognitive elaboration was a key variable in addressing how CIC affected participants' attempts to quit smoking in Morgan and colleagues' study (2018). Although it is one of a few studies that tested the mechanisms of CIC, a few modifications need to be made for this partial replication. First, the valence of CIC was not captured in their study. As seen in the results from David and colleagues' study (2006), the valence of CIC can change the direction of the CIC effect. Conversational valence should influence behavioral intentions and perceived norms regarding a target behavior (Hendriks et al., 2020). The valence of CIC needs to be considered to uncover the conditions where CIC affects the campaign outcomes. Second, the recall of the message was not tested as a mediator in the final model due to the poor model fit. To overcome these limitations, the present study will test the three possible mediators suggested by Southwell and Yzer (2007) (i.e., cognitive elaboration, perceived injunctive norms, message recall) between positively valenced CIC and campaign outcomes.

As the context of the present study is a social norms campaign, a question can be raised as to the extent to which CIC can explain the variance of perceived injunctive norms as social norms messages may have influenced individuals' perceived injunctive norms before CIC takes place. Individuals' perceived injunctive norms may have already been affected by information featured in a social norms campaign, making it hard to capture the effect of CIC on perceived injunctive norms. Typically, social norms campaigns deliver normative information within a

large community (e.g., a specific university community), affecting an audience's perceived social norms shared within the large community (e.g., college students' estimation of other typical students' behaviors and approval of the behaviors). Individuals who engage in CIC with their social network will learn about injunctive norms within a proximal referent group (e.g., close friends), which is a significant predictor of behavioral outcomes (Campo et al., 2003) rather than a large community referent group. Thus, it is expected that positive CIC with close others will lead to stronger perceived injunctive norms among a proximal referent group, which is distinguished from injunctive norms within a large community that the participants will learn from social norms messages. Therefore, the following hypotheses are proposed.

Hypothesis 3: *Higher frequency of positive CIC will predict (a) higher cognitive elaboration (b), higher perceived injunctive norms from close others, and (c) better recall of the campaign message.*

Hypothesis 4: *(a) Higher cognitive elaboration, (b) higher perceived injunctive norms from close others, and (c) better recall of the campaign will predict higher intention to practice the target behavior*

Hypothesis 5a: *The relationship between the prompt to engage in positive CIC with close others (vs. no prompt) and intentions to practice the target behavior will be serially mediated by a higher frequency of positive CIC and cognitive elaboration.*

Hypothesis 5b: *The relationship between the prompt to engage in positive CIC with close others (vs. no prompt) and intentions to practice the target behavior will be serially mediated by a higher frequency of positive CIC and perceived injunctive norms from close others.*

Hypothesis 5c: *The relationship between the prompt to engage in positive CIC with close others (vs. no prompt) and intentions to practice the target behavior will be serially mediated by a higher frequency of positive CIC and better recall of the campaign message.*

METHOD

Target Behavior

The target behavior of occasionally choosing not to drink when partying or socializing with friends was chosen based on a university-wise survey conducted in the summer 2021 with over 1,200 undergraduate respondents at Michigan State University. The sample was randomly stratified that match the demographic information of the undergraduate student population who registered to the Fall 2021 semester. The survey result showed that 96% of respondents approved of other students occasionally choosing not to drink at parties or when socializing,[1] whereas 61% of the participants reported that they perceived most of their peers approve of occasionally choosing not to drink. This result indicates that actual injunctive norms[2] toward occasionally choosing not to drink when partying or socializing with friends exist among undergraduate students at Michigan State University, although only 61% of the participants perceived such norms exist. Based on these results, the injunctive norms message was designed to inform actual injunctive norms among the university students ("*More than 9 out of 10 MSU students approve of their fellow Spartans choosing not to drink when partying or socializing with friends* "; See Figure 1 for the message).

[1] Most participants indicated that they have occasionally chosen not to drink alcohol when partying or socializing. However, this question was a one-time binary measure (yes/no) that is not sensitive to the reception of a campaign message, nor does it imply future intentions.

[2] The survey showed that descriptive norms also exist among the undergraduate students in that 93.4% of the participants reported that they occasionally choose not to drink. However, the present study focuses on injunctive norms for two main reasons. First, the injunctive norms message for a drinking behavior is likely to be more believable than the descriptive norms message among undergraduate participants. Participants might not believe the message that more than 90% of their peers choose not to drink when party as they can directly observe the prevalence of the behavior. However, they are more likely to believe that 90% of their peers approve of them choosing not to drink as the injunctive norms message is about other people's perceptions which is less observable than prevalence of the same behavior. Second, a recent meta-analysis (Rhodes et al., 2020) found that injunctive norms manipulations are more effective in behavioral outcomes than descriptive norms manipulations.

Design

The present study is a pre-posttest design with a one-week interval. The design includes one between-subjects component, a three-level CIC prompt; *control*, *prompt only*, and *prompt & plan* conditions. Participants were randomly assigned to one of the three conditions. After filling out the initial questionnaire (T_0), all participants viewed the same injunctive norms message that more than 90% of MSU students approve of choosing not to drink when partying or socializing with friends. Participants in the *control* condition did not receive any prompt to engage in CIC. Participants in both *prompt only* and *prompt & plan* conditions received the prompt to engage in positive CIC after viewing the injunctive norms message. Participants in the *prompt & plan* condition wrote their plans about what they will discuss in the future CIC. The difference in the outcomes between the *prompt only* and *prompt & plan* conditions was not hypothesized: the *prompt & plan* condition was added to further motivate participants to talk about the campaign message in their personal lives based on the findings that planning communication improves chances of achieving communication goals (Berger, 1997; Ray et al., 2020). Every participant received another questionnaire to fill out a week after the initial questionnaire (T_1). A complete questionnaire can be found in Appendix C.

Procedure

A random sample of undergraduates was requested from the Office of the Registrar at Michigan State University. The sample was drawn proportionally across undergraduate grade levels. Those undergraduate students were recruited through email invitations. After providing consent, they were asked whether they consume alcoholic drinks ("*Do you drink alcoholic drinks?"*), and only those who clicked 'yes' were qualified to participate in the study. Every participant was asked to fill out an identical questionnaire in the initial wave (T_0; See Appendix

C for a complete questionnaire). At the end of the initial survey, every participant saw the injunctive norms message regarding approval of others choosing not to drink at parties or when socializing (See Figure 1 for the message).

After filling out the initial questionnaire and seeing the message, participants received one of three prompts. The prompt items were based on Dillard et al. (2020)'s research. Participants in the control condition did not receive any prompt after seeing the injunctive norms message. Participants in *the prompt only* and *prompt & plan conditions* received a prompt to talk positively about the message with their close friends for the next six days. This prompt guides participants in the *prompt only* and *prompt & plan* condition to talk about (1) what the campaign message was about, (2) how the campaign message can be effective in reducing alcohol-related issues in the university community, and (3) how the campaign successfully encourages alcohol-reduction in the university community. Only participants in the *prompt & plan* condition wrote about a chosen communication partner whom they are close with and their plans about how to address each discussion prompt to the partner. After receiving the prompts, all participants were notified that they would be contacted again in a week. Participants who reported back in one week were asked to fill out a questionnaire in the second wave (T_1 ; Appendix C). The questionnaire was identical regardless of the conditions. Every participant received a $5 gift card after completing the initial survey at T_0 regardless of the condition. After completing a second-wave survey at T_1 participants in the *control* condition received an additional a $5 gift card, and participants in both *prompt only* and *prompt & plan* conditions received an additional a $10 gift card. In sum, those who completed both surveys received a 10 (*control* condition) or a $15 (*prompt only, prompt & plan* conditions) gift card as an incentive to participate.

Participants

The invitation email was sent to 1,605 undergraduate students. Three hundred and twenty-nine participants completed a T_0 questionnaire (a 20% response rate; n_{control} = 112, $n_{\text{prompt only}}$ = 109, $n_{\text{prompt \& plan}}$ = 108). Two hundred and fifty-two participants completed a T_1 questionnaire one week later (a 77% retention rate[3]). Only participants who completed both T_0 and T_1 were included in the analyses (n_{total} = 252. n_{control} = 83, $n_{\text{prompt only}}$ = 86, $n_{\text{prompt \& plan}}$ = 83). Reported power for post-hoc F-test across three groups is 1.00. The average age of the participants was 20.26 years-old. Almost 70% of the participants were female (*n* = 174) and 31% of them was male (*n* = 77). Most of the participants identified themselves as White/Caucasian (*n* = 204; 81%) followed by Asian/Pacific Islander (*n* = 26; 10%), Hispanic/Latino (*n* = 25; 10%) and Black/African American (*n* = 14; 6%). Thirty-nine of the participants (15%) were members of Greek organizations. Eighty-six of the participants (34%) were Seniors, followed by Juniors (*n* = 67; 27%), Sophomores (*n* = 62; 25%) and Freshmen (*n* = 67; 15%).

Stimulus: Injunctive Norms Message

The poster containing an injunctive normative message was created using the format of a health campaign on campus where the research was conducted. The data were collected before the injunctive norms message was distributed to the campus as a part of an ongoing health campaign. At the top of the poster, the catchphrase was written as "Waddle your Own Way – it's a Spartan's choice how they play". The animal mascot of the health campaign was featured in the posters. At the bottom of the poster, a normative message was written as "More than 9 out of

[3] *Control* Condition = 74%, *Prompt Only* Condition = 79%, *Prompt & Plan* Condition = 77%, $X^2(2, n = 329) = .71$, $p = .70$.

10 MSU students approve of their fellow Spartans choosing not to drink when partying or socializing with friends[4]" (Figure 1). Participants spent 10.31 seconds (*SD* = 14.37) reading the message on average.

Measurement

Participants were asked to provide their demographic information only at T_0. Perceived injunctive/descriptive norms, behavioral intentions of occasionally choosing not to drink when partying or socializing, and control variables were asked twice in both T_0 and T_1 questionnaires. CIC recall, message recall, frequency of positive/negative CIC, cognitive elaboration, and their engagement in the target behavior during the past week (behavior) were asked at T_1. The complete questionnaire is attached in the appendix C. Confirmatory factor analyses (CFA)[5] were conducted to indicate unidimensional solutions using R lavaan for each scale, except for the frequency of CIC, perceived descriptive norms, typical alcohol consumption, and behaviors, which was a single-item measure. Variables measured at T_1 were used to test hypotheses.

Perceived Injunctive Norms from Close Friends

Four items based on Park and Smith (2007)'s measurement of perceived injunctive norms were adapted using a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Sample items include "Most of my close friends approve of me occasionally choosing not to drink alcohol when socializing or partying with friends." One item (*Most of my close friends think I should occasionally choose not to drink alcohol when socializing or partying with friends*) was

[4] The target behavior is '*occasionally* choosing not to drink when partying or socializing with friends". Thus, the measurements were based on the wording of the target behavior (*occasionally* choosing not to drink when partying or socializing with friends). Although the poster did not include the word 'occasionally,' the participants should have interpreted the message that a majority of their peers also approve of others *occasionally* choosing not to drink as approval of 'choosing not to drink' encompasses approval of 'occasionally choosing not to drink'.
[5] CFA was conducted for both T_0 and T_1measures. CFA results for T_1measures are reported in the present manuscript.

dropped due to the weak factor loading, $\chi 2(6, n = 252) = 330.08$, $p = .00$, CFI = .98, RMSEA = .10, SRMR = .04 [6]. The mean score of three items was used for further analyses, $M_{T0} = 5.57$, $SD_{T0} = 1.28$ (α = .82), $M_{T1} = 5.83$, $SD_{T1} = 1.16$ (α = .88),

Participants were also asked to report their estimation of the percentage of their close friends' who approve of occasionally choosing not to drink alcohol when socializing or partying with friends using a sliding scale (0-100%), $M_{T0} = 79.96$, $SD_{T0} = 24.01$, $M_{T1} = 80.96$, $SD_{T1} = 23.82$.

Intentions to Practice the Target Behavior (Behavioral Intentions)

Four 7-point Likert items from Park & Smith (2007) were used to measure behavioral intentions (e.g., "*I intend to occasionally choose not to drink at parties or when socializing*"; 1 = strongly disagree, 7 = strongly agree), $\chi 2(6, n = 252) = 330.08$, $p = .00$, CFI = .98, RMSEA = .10, SRMR = .04. The mean score of the four items was used for further analyses, $M_{T0} = 4.76$, $SD_{T0} = 1.68$ (α = .93), $M_{T1} = 5.04$, $SD_{T1} = 1.63$ (α = .96).

Plan for CIC

At the end of the T_0 questionnaire, those participants in *the prompt and plan* condition were asked to write about their plan for CIC. They were asked to write about who they were going to talk with and what they were going to talk about in the specific conversation items from the prompt. Sample responses from the participants include, "*I am going to discuss the fun duck cartoon on the graphic and say that most students approve of choosing not to drink*", "*It is about giving people the option to not drink when going out and socializing with friends and shows us that our friends support us in our choice to not drink*". This variable was not used to test

[6] This result is with 4 items before dropping the item. CFA cannot be run after dropping one item as at least 4 items are needed to run the analysis.

hypotheses but to motivate participants to think about talking with a friend in the present study. Future research will analyze these open-ended responses to gain a better understanding of *the prompt & plan* condition, including whether the specifics of the planned messages predict better communication results.

Message Recall

At the end of a questionnaire at T_1, participants were asked to respond to 5 true-false items about the campaign message they saw the previous week (i.e., *The new MSU campaign poster you saw last week contains information about other MSU students' approval of occasionally choosing not to drink alcohol when socializing or partying with friends* -True; *The new MSU campaign poster you saw last week contains information about the number of drinks other MSU students have at parties* - False). The number of correct responses that range from 0 to 5 was used to represent message recall (Greene et al., 1990), M = 3.15, SD = 1.35, Range = [0, 5].

Frequency of Positive/Negative CIC

A single item was developed based on Morgan and colleagues' research (2018) to measure the frequency of positive/negative CIC (*During the last 7 days, how many times did you talk to close friends positively/negatively about the new MSU campaign poster that we presented to you last week?*). Participants entered the number of times using an open-ended response option, M_{positive}= 1.17, SD_{positive} = 1.60, M_{negative}= .17, SD_{negative} = .63.

Cognitive Elaboration

Four items from Morgan and colleagues (2018)'s research were used to measure cognitive elaboration (e.g., *During the last 7 days, how much did the new MSU campaign poster that you saw last week cause you to think about occasionally choosing not to drink at parties or*

when socializing?). The response option ranged from 'Not at all (1)' to 'All the time (7)'. One item (*During the last 7 days, how often did you think about drinking non-alcoholic drinks when socializing or partying with friends?*) was dropped due to the weak factor loading, $\chi 2(6, n = 115^{7}) = 110.89$, $p = .00$, CFI = .94, RMSEA = .17, SRMR = .06. The mean scores of the remaining three items were used for further analyses. $M = 3.15$, $SD = 1.35$ ($\alpha = .75$).

CIC Recall

All participants regardless of their post message prompt condition were asked to think of the most memorable conversation they had about the campaign message. They wrote about whom they talked with about the campaign and how they addressed each discussion item from the prompt. Participants who indicated they had zero conversations about the campaign message did not receive this item. Sample responses from the participants include "*An individual having the ability to choose not to drink alcoholic beverages without being judged for not drinking*," "*Less peer pressure from friends to drink, which may lead to getting drunk/potential alcohol poisoning in severe cases*" "*By not being judged for one's personal reason to not drink, more students are more likely to control the amount of alcohol they consume, instead of being persuaded or convinced to drink more than they can handle*" "*I told them that this message would allow for better decision-making by students at Michigan State,."* and "*I told them about the choice to not drink emphasizing it was a choice.*".

Other Variables

Perceived descriptive norms about close friends. Perceived descriptive norms about close friends was measured using a single item. Participants were asked to estimate the percentage of

[7] Due to a programming error, cognitive elaboration measurement was not displayed to the participants who indicated they did not have CIC. Cognitive elaboration was measured among those who at least had one conversation about the injunctive norms message.

close friends who occasionally choose not to drink alcohol at parties or when socializing using a sliding scale (0-100%), M_{T0}= 44.86, SD_{T0} = 27.05, M_{T1}= 48.37, SD_{T1} = 27.32.

Typical alcohol consumption. To measure alcohol consumption, participants were asked to report how many drinks containing alcohol they typically have when socializing or partying with friends. As noted earlier, only participants who reported that they drink alcoholic drinks were eligible to participate in the study. The table of the approximate number of standard drinks in different alcohol drinks was provided for reference (Figure 6). M_{T0}= 4.67, SD_{T0} = 2.77, M_{T1}= 4.45, SD_{T1} = 2.60.

Attitudes. Positive attitudes toward occasionally choosing not to drink at parties or when socializing were measured with four items based on 7-point semantic differential scales ("*Occasionally choosing not to drink at parties or when socializing is bad—good, undesirable—desirable, negative—positive, harmful—beneficial*"). Fishbein & Raven, 1962), $\chi 2$(6, n = 252) = 330.79, p = .00, CFI = 1.00, RMSEA = .00, SRMR = .01. The mean score was used for the analyses, and the higher number indicates more positive attitudes toward the target behavior, M_{T0}= 5.39, SD_{T0} = 1.13 (α = .80), M_{T1}= 5.62, SD_{T1} = 1.09 (α = .81).

Behaviors. In the T_1 questionnaire, participants were asked how many times they chose not to drink when socializing between T_0 and T_1. M = 2.40, SD = 1.65.

Similar campaign message recall. As the injunctive norms message was in the format of an ongoing health campaign on campus, participants' previous exposures to similar campaign messages might influence their responses, including perceived norms, attitudes, and behaviors. Participants were asked whether they recalled seeing any campaign messages with the same animal mascot about alcohol around campus. More than half of the participants answered 'Yes' (n = 153, 60%), and 40% of the participants selected 'No' (n = 99). This variable was measured

as a possible covariate. However, there were no statistically significant correlations with other key variables of the study (e.g., $r_{injunctive\ norms}$ = .05, $p_{\ injunctive\ norms}$ = .41; $r_{behavioral\ intentions}$ = -.04, $p_{\ behavioral\ intentions}$ = .56; $r_{attitudes}$ = -.06, $p_{\ attitudes}$ = .39). Therefore, this variable was not included in the final analyses.

RESULTS

Baseline characteristics by conditions, descriptive statistics, and the correlation matrix are reported in Tables 1, 2 and 3, respectively. There were no statistically significant differences in baseline characteristics (T_0) across the three prompt conditions (Table 1). Only 3 participants in the control group (*n* = 83, 3.6%) reported that they had conversations about the campaign message with close others between T_0 and T_1. Fifty-four participants in the *prompt only* condition (*n* = 86, 62.8%) had such conversations with close others between T_0 and T_1. Similarly, fifty-nine participants in the prompt and plan condition (*n* = 83, 71.1%) reported they had talked about the campaign message with close others between T_0 and T_1.

The Effects of Prompt on CIC and Behavioral Intentions

H1 hypothesized that the prompt to engage in positive CIC about the campaign message would predict a higher frequency of positive CIC. The results of a one-way ANOVA showed a statistically significant effect of the prompt condition on the frequency of positive CIC, *F* (2, 249) = 38.06, *p* = .00. The mean difference between the control condition (M_{control} = .10, SE_{control} = .06) and the prompt only condition ($M_{\text{prompt only}}$ = 1.51, $SE_{\text{prompt only}}$ = .18) was statistically significant. The mean of positive CIC frequency was also significantly higher in the prompt & plan condition (M_{control} = 1.90, SE_{control} = .18) compared to the control condition. A planned contrast (-2 = *control*, +1 = *prompt only*, +1 = *prompt & plan*) revealed that average frequency of positive CIC was 1.41 standard deviations higher among participants who received the prompt than among those who did not receive the prompt, *d* = 1.41, *p* < .01, *95% CI* [1.72, 2.85]. There were no statistically significant differences between the prompt only condition and

the prompt and plan condition. H1 was consistent with the data in that the prompt did lead to a higher frequency of CIC.

H2 predicted that participants who received the prompt to engage in positive CIC would report higher intentions to practice the target behavior. A one-way ANOVA revealed that there were no statistically significant differences in behavioral intention at T_1 between those who did not receive the prompt (M_{control}= 5.19, SE_{control} = .19) and those who received the prompt ($M_{\text{prompt only}}$ = 5.12, $SE_{\text{prompt only}}$ = .17; $M_{\text{prompt \& plan}}$ = 4.81, $SE_{\text{prompt \& plan}}$ = .18), F (2, 249) = 1.31, p = .27. A planned contrast (-2 = *control*, +1 = *prompt only*, +1 = *prompt & plan*)[8] did not reveal any statistical differences across the conditions, d = -.45, p = .30. Therefore, H2 was not consistent with the data in that the prompt did not lead to higher intentions to practice the target behavior.

The Relationships between Frequency of Positive CIC, Cognitive Elaboration, Perceived Injunctive Norms, Message Recall, and Behavioral Intentions

H3 predicted the positive relationship between the frequency of positive CIC and (a) higher cognitive elaboration, (b) higher perceived injunctive norms, and (c) better recall of the campaign message. **H4** hypothesized that (a) cognitive elaboration, (b) perceived injunctive norms, (c) recall of the campaign message would positively predict intentions to practice the target behavior. Mediation analyses were conducted to test H3 and H4 simultaneously. H3a and H4a (the relationships between frequency of positive CIC, cognitive elaboration, and behavioral intentions) were tested separately from other hypotheses due to the different sample sizes as not

[8] To see the possible contrast between *prompt & plan* and other two conditions, another planned contrast analysis was conducted (+1 = *control*, +1 = *prompt only*, -2 = *prompt & plan*). Consistent with previous results, there were no statistically significant differences across the conditions, d = -.70, p = .11.

every participant was asked to complete cognitive elaboration measures due to a survey programing error.

Cognitive elaboration A simple mediation analysis was conducted between the frequency of positive CIC (independent variable), cognitive elaboration (mediator), and behavioral intention (dependent variable) using SPSS PROCESS with 10,000 bootstraps (Model 4, 95% confidence intervals). The control variables were the prompt conditions, participants' Greek status, typical alcohol consumption, and attitudes toward the target behavior. Only participants who completed cognitive elaboration measurements were included in the analysis (n = 114) to test H3a and H4a.

It was hypothesized that more frequent positive CIC would lead to higher cognitive elaboration (**H3a**). As predicted in H3a, when cognitive elaboration was a dependent variable, R^2 = .17, $F(5, 109) = 4.46$. $p < .01$, frequency of positive CIC significantly predicted cognitive elaboration, b [9]= .31, SE = .08, $p < .01$, *95% CI* [.16, .47]. None of the control variables were statistically significant predictors of cognitive elaboration. Therefore, the data were consistent with H3a in that more frequent positive CIC led to higher cognitive elaboration.

H4a predicted that higher cognitive elaboration would predict higher intentions to practice the target behavior. Cognitive elaboration positively predicted behavioral intention, R^2 = .22, $F(6, 108) = 5.22$. $p < .01$, b = .33, SE = .1, p = .01. Among control variables, attitude toward the target behavior was also a statistically significant predictor of behavioral intentions, b = .33, SE = .1, p = .01. The data were consistent with H4a in that higher cognitive elaboration statistically predicted higher behavioral intentions.

The full results of the mediation analysis are reported in Table 4 and Figure 2. Frequency of positive CIC did not directly influence behavioral intentions, b = -.13, SE = .10, p = .22.

[9] Unstandardized beta

However, indirect effects of frequency of positive CIC on behavioral intentions were statistically significant via cognitive elaboration, b = .10, SE = .04, *95% CI* [.04, .19]. The results revealed that more frequent positive CIC leads to higher behavioral intentions as participants think more about the campaign message.

Perceived injunctive norms and message recall A parallel mediation analysis (n = 252) was conducted to test H3b, H3c, H4b, and H4c, using SPSS PROCESS with 10,000 bootstraps (Model 4, 95% confidence intervals). The frequency of positive CIC was entered as an independent variable. Perceived injunctive norms and message recall were entered as two separate mediators. The control variables were the prompt conditions, participants' Greek status, typical alcohol consumption, and attitudes toward the target behavior. The full results are reported in Table 5 and Figure 3.

H3b predicted that more frequent positive CIC would lead to higher perceived injunctive norms of close others. When the dependent variable is perceived injunctive norms of close others, R^2 = .21, F(5, 246) = 13.20. p = .00, frequency of positive CIC did not predict perceived injunctive norms, b = .01, SE = .05, p = .81. Among the control variables, positive attitudes toward the target behavior positively predicted perceived injunctive norms, b = .46, SE = .06, p < .01. Therefore, the data were not consistent with H3b in that the frequency of positive CIC did not yield higher perceived injunctive norms.

H3c stated that more frequent positive CIC would predict better message recall. When the dependent variable is message recall, R^2 = .02, F(5, 246) = .88. p = .50, frequency of positive CIC did not predict message recall, b = -.03, SE = .06, p = .63. Therefore, the data were not consistent with H3c in that frequency of positive CIC did not predict message recall.

It was hypothesized that perceived injunctive norms (**H4b**) and message recall (**H4c**) would positively predict intentions to practice the target behavior, respectively. When the behavioral intention is a dependent variable, R^2 = .35, $F(7, 244) = 18.48$. $p < .01$, perceived injunctive norms were a statistically significant predictor of behavioral intentions, b = .34, SE = .08, $p < .01$. Message recall did not predict behavioral intentions, b = -.01, SE = .08, $p < .01$. Among the control variables, typical alcohol consumption, b = -.12, SE = .03, $p < .01$ and attitudes toward the target behavior, b = .48, SE = .09, $p < .01$, were positively related to behavioral intentions. Greek status (0 = no, 1 = yes), b = -.65, SE = .24, p = .01, and the prompt condition (1 = control, 2 = prompt only, 3 = prompt and plan), b = -.28, SE = .12, p = .02, were negatively related to behavioral intentions. Therefore, the data were consistent with H4b in that perceived injunctive norms positively predicted behavioral intentions, but not with H4c in that message recall did not predict behavioral intentions.

The indirect effect of frequency of positive CIC on behavioral intention via perceived injunctive norms was not statistically significant, b = .00, SE = .02, *95% CI* [-.03, .03]. Message recall did not mediate the relationship between frequency of positive CIC and behavioral intentions either, b = .00, SE = .00, *95% CI* [-.01, .01].

The Indirect Effects of the Prompt Conditions on Behavioral Intentions

H5a predicted the serial mediation between the prompt to engage in positive CIC with close others (vs. no prompt) and intentions to practice the target behavior via a higher frequency of positive CIC and *cognitive elaboration*. However, due to the error in data collection whereby only participants who reported they had CIC between T_0 and T_1 were asked to report cognitive elaboration, only 4 participants in the control condition reported their cognitive elaboration (all participants reported perceived injunctive norms and message recall). Fifty-four participants in

the *prompt only* condition and fifty-nine participants in the *prompt & plan* condition were asked to report cognitive elaboration. Since very few participants in the control condition filled out cognitive elaboration measure, H5a cannot be tested with the present data set as the antecedent variable is the prompt condition (participants who received the prompt vs. no prompt).

H5b hypothesized that the prompt conditions would indirectly influence behavioral intentions via the frequency of positive CIC and *perceived injunctive norms*. A serial mediation analysis was performed using SPSS PROCESS with 10,000 bootstraps (Model 6, 95% confidence intervals, $n = 252$). The prompt conditions and behavioral intentions were entered as independent and dependent variables, respectively. The independent variable was multicategorical (control, prompt only, prompt & plan conditions) and the control condition was set as a referent point. Frequency of positive CIC and perceived injunctive norms were entered as mediators. Control variables were perceived descriptive norms, participants' Greek status, typical alcohol consumption, and attitudes toward the target behavior. Compared to the control condition, both the 'prompt only' condition, $b = 1.36$, $SE = .22$, $p < .01$, *95% CI* [.92, 1.79], and 'prompt and plan' condition, $b = 1.77$, $SE = .22$, $p < .01$, *95% CI* [1.33, 2.11], had significantly stronger impacts on frequency of positive CIC. In other words, compared to participants in the control condition, participants who received the prompt to engage in positive CIC had more frequent positive CIC. Perceived injunctive norms from close others were not influenced by frequency of positive CIC, $b = .02$, $SE = .05$, $p = .43$, *95% CI* [-.07, .11]. Perceived injunctive norms significantly predicted behavioral intentions, $b = .23$, $SE = .09$, $p = .01$, *95% CI* [.07, .40]. Compared to participants in the control condition, participants in the prompt and plan condition reported lower behavioral intentions, $b = -.61$, $SE = .24$, $p = .01$, *95% CI* [-1.08, -.15]. There were no relative differences between participants in the prompt only condition and the control

condition in reported behavioral intentions, b = -.19, SE = .22, p = .41, *95% CI* [-.63, .26]. Relative to the control condition, there was no statistically significant serial mediation between the prompt conditions and behavioral intentions via the frequency of positive CIC and perceived injunctive norms, $b_{\text{prompt only}}$ = .01, $SE_{\text{prompt only}}$ = .02, 95% $CI_{\text{prompt only}}$ = [-.02, .04], $b_{\text{prompt and plan}}$ = .01, $SE_{\text{prompt and plan}}$ = .02, 95% $CI_{\text{prompt and plan}}$ = [-.03, .05]. Therefore, the data were not consistent with H5b in that there was no serial mediation between the prompt conditions, the frequency of positive CIC, perceived injunctive norms, and behavioral intentions. The full result of the analysis is reported in Table 6.

The same serial mediation analysis was repeated to test whether different prompt conditions predicted behavioral intentions via the frequency of positive CIC and *message recall* (**H5c**). Instead of perceived injunctive norms, message recall was entered as a second mediator (n = 252). Consistent with the H5b results, the 'prompt only' condition, b = 1.33, SE = .22, p < .01, *95% CI* [.90, 1.77] and the 'prompt & plan' condition, b = 1.79, SE = .22, p < .01, *95% CI* [1.35, 2.23] each had a significantly stronger impact on the frequency of positive CIC compared to the control condition. However, frequency of positive CIC did not significantly predict message recall, b = -.00, SE = .06, p = .99, *95% CI* [-12, 12]. Similarly, message recall did not predict behavioral intentions, b = .01, SE = .07, p = .93, *95% CI* [-12, 13]. Relative indirect effects of the prompt conditions on behavioral intentions through the frequency of positive CIC and message recall were not statistically significant, $b_{\text{prompt only}}$ = .00, $SE_{\text{prompt only}}$ = .00, 95% $CI_{\text{prompt only}}$ = [-.01, .01], $b_{\text{prompt and plan}}$ = .00, $SE_{\text{prompt and plan}}$ = .01, 95% $CI_{\text{prompt and plan}}$ = [-.01, .02]. H5c was not consistent with the data in that the prompt conditions did not indirectly influence behavioral intentions via the frequency of positive CIC and message recall. The full result is reported in Table 7.

Post-Hoc Analyses

The results of the main hypotheses tests highlighted the role of cognitive elaboration as a key mediator between the frequency of positive CIC and behavioral intentions. A simple mediation analysis was conducted to see whether the frequency of positive CIC could also influence the number of times participants chose not to drink between T_0 and T_1 via cognitive elaboration, using SPSS PROCESS with 10,000 bootstraps (*n* = 115, Model 4, 95% confidence intervals). The control variables were the prompt conditions, perceived descriptive norms, participants' Greek status, typical alcohol consumption, and attitudes toward the target behavior. The frequency of positive CIC did not directly influence the number of times participants chose not to drink between T_0 and T_1, *b* = -.01, *SE* = .12, *p* = .89, *95% CI* [-.25, .22]. However, the indirect effect was statistically significant via cognitive elaboration, *b* = .12, *SE* = .05, *95% CI* [.04, .23]. To rule out the possibility that cognitive elaboration led to more frequent positive CIC, another mediation analysis was conducted between cognitive elaboration, frequency of positive CIC, and behaviors. The indirect effect of cognitive elaboration on the number of times participants chose not to drink was not statistically significant, *b* = .02, *SE* = .03, *95% CI* [-.06, .07]. Therefore, the frequency of positive CIC led to engagement in the target behavior as the participants reported more cognitive elaboration (Figure 4).

Across testing the various hypotheses, positive attitudes toward the target behavior which was entered as a control variable in the analyses, showed a significant impact in predicting behavioral intentions. Although it was not hypothesized, the relationships between the frequency of positive CIC, attitudes, and behavioral intentions were tested. It is possible that frequent and positive conversations about the campaign message led to positive attitudes toward the target behavior, which predicted intentions to practice the behavior. A simple mediation analysis was

conducted between the frequency of positive CIC (independent variable), attitudes toward the target behavior (mediator), and behavioral intention (dependent variable) using SPSS PROCESS with 10,000 bootstraps (Model 4, 95% confidence intervals). Typical alcohol consumption, Greek status, and the prompt conditions were entered as control variables. Frequency of positive CIC positively predicted attitudes toward the target behavior, b = .13, SE = .05, p = .01, *95% CI* [.04, .23]. Attitudes toward the target behavior predicted behavioral intentions, b = .64, SE = .08, p < .01, *95% CI* [.47, .80]. Frequency of positive CIC did not directly predict behavioral intentions, b = -.02, SE = .06, p = .75, *95% CI* [-.14, .10]. However, the indirect effect was statistically significant that the frequency of positive CIC predicted behavioral intentions via attitudes toward the target behavior, b = .09, SE = .03, *95% CI* [.03, .15][10] (Figure 5). Thus, it can be inferred that when participants had more frequent and positive conversations about the campaign message, they were likely to have higher intentions to practice the target behavior as their attitudes toward the target behavior become more positive.

[10] To rule out the possibility that attitudes lead to more frequent positive CIC, a mediation analysis between attitudes, frequency of positive CIC, and behavioral intentions was performed. The indirect effect was not statistically significant, b = -.01, SE = .02, *95% CI* [-.04, .03].

DISCUSSION

The two-step flow theory (Katz & Lazarfeld, 1955) suggests that mass media information is disseminated to a wider network through opinion leaders' word of mouth, in addition to individuals' direct exposure to the information. Whereas two-step flow theory focuses on disseminating information through social networks via interpersonal communication about the mass media messages, the present study was conducted to focus on individuals' psychological processes of mass media information when engaging in interpersonal communication about the mass media messages. Consistent with the predictions, participants who received the prompt to engage in positive conversation about the mass media campaign message had more frequent positive conversations about the campaign message with close others than those who did not receive the prompt. Also, the study found that cognitive elaboration positively mediates the relationship between the frequency of positive conversations about the campaign message and behavioral outcomes (behavioral intentions and behaviors), which confirms the past findings (Morgan et al., 2018).

The present study found that the prompt to engage in positive CIC elicited a higher frequency of positive CIC. There was a statistically significant difference in the frequency of positive CIC between the participants who received a prompt to engage in CIC and those who did not. As the campaign message used in this study was not available to the public when the data were collected, participants needed to initiate CIC if they wanted to engage in CIC about the message. Two groups of the participants received the prompt to engage in positive CIC. Whereas one group only received the prompt about what items they needed to discuss with their close others (*the prompt only condition*), the other group was asked to write about their

plans regarding how they would address each item from the prompt (*the prompt & plan condition*). Although past research highlighted planning messages before communicating enhances the probability of achieving communication goals (i.e., Berger, 1997; Ray et al., 2020), there were no statistical differences in the frequency of positive CIC and outcome variables between the prompt only condition and the prompt & plan condition. The result shows promise that requiring planning is not necessary for the audience to initiate positive conversations about campaign messages, but that a prompt is enough to elicit such discussions.

The result also implies that *the prompt only* condition might bring more desirable outcomes than *the prompt & plan* condition. The prompt & plan condition negatively predicted intentions to practice the target behavior such that their behavioral intentions were lower than those from the control condition. Participants might have found they were asked to do too much, such as planning communication, typing the plan, and initiating conversations with close others in real life, which might have led to lower behavioral intentions. They may have felt fatigue toward communication about occasionally choosing not to drink and therefore showed lower intentions to practice the target behavior than those who did not have to plan communication (i.e., So et al., 2017; Kim & So, 2020). Or they might have experienced psychological reactance as they may have felt their freedom to think/behave was threatened by the instruction of planning and having positive conversations about the campaign message (Brehm, 1966; Brehm & Brehm, 1981). Although participants infrequently reported they had talked negatively about the campaign message (Table 2), the lowest behavioral intentions among the participants in the prompt & plan condition might be explained by psychological reactance which can result in decrease in behavioral outcomes to restore threatened freedom (Brehm, 1966; Brehm & Brehm, 1981). The mean score of intentions to practice the target behavior for the prompt & plan

condition is significantly higher than the mid-point of 4, $t(82) = 4.50$, $p < .00$, *95% CI* [.45, 1.16]. The decrease in behavioral intentions from the control condition to the prompt & plan condition might not be critical as behavioral intentions are still significantly higher than the midpoint. However, the results also illustrate that the prompt & plan condition did not yield a significant higher frequency of positive CIC compared to the prompt only condition, and participants in the prompt & plan condition showed the lowest intentions to practice the target behavior across the three conditions. The prompt only condition was not only more convenient, just by asking participants to engage in positive CIC, but also was more effective in achieving higher behavioral intentions in a practical sense compared to the prompt & plan condition.

The present study shows that the positive discussion prompt about possible campaign effects led to positive conversations about the campaign messages. Past research found that individuals are more likely to talk about the campaign message when the message is arousing (e.g., pictorial warning on cigarette packs; Morgan et al., 2018). Brennan and colleagues (2017) suggest that novelty and controversy of the campaign message also might lead to the occurrence of conversation about the message. However, it is not always possible and appropriate to design every campaign message to be controversial or emotionally arousing. For example, messages that elicit too much emotional arousal (e.g., intense fear appeals) can be perceived as manipulative by the message recipients, which can lead to a negative evaluation of the messages (Shen & Coles, 2015). The present study shows that simply providing the discussion prompt can lead the campaign audience to have positive conversations about the campaign. Some other existing campaigns encourage the audience to engage in CIC. For example, Substance Abuse and Mental Health Service Administrations launched "*Talk, They Hear You*" campaign targets parents to talk about substance usage with their offspring to prevent alcohol consumption and

substance usage (Substance Abuse and Mental Health Service Administrations, 2022). The prompt used in the present study was designed for the audience to think and positively talk about perceived campaign effects, and this led to frequent positive conversations about the campaign. If the instruction forced the participants to talk positively about the campaign, participants instead might have talked negatively about the campaign message to restore their threatened freedom (e.g., Brehm, 1966; Brehm & Brehm, 1981). The discussion suggestion regarding the expected effects of the campaign message can prevent possible psychological reactance and elicit positive conversations about the message. Future social norms-based campaigns can also encourage the audience to talk positively with their peers about the message by adding a few discussion items regarding positive aspects of the effects of campaign messages.

As discussed above, the prompt conditions did not predict higher behavioral intentions compared to the control group in the present study. This is not consistent with the past findings from a meta-analysis (Jeong & Bae, 2018) that found that CIC has a greater effect on the campaign outcomes when the prompt is present compared to when the one is absent. Although the prompt did not directly predict higher behavioral intentions, the prompt conditions yielded more frequent positive CIC, which indirectly influenced behavioral intentions via cognitive elaboration. The findings from the present study highlight the role of cognitive elaboration as a mediating variable between CIC and behavioral outcomes. This confirms the finding from Morgan and colleagues (2017) that cognitive elaboration mediates the frequency of CIC and behavioral outcomes in the context of college students' drinking. It also advances their finding which explained the relationship between the frequency of general CIC and cognitive elaboration, such that positively valenced CIC predicts higher cognitive elaboration, but not

negatively valenced CIC[11]. Therefore, researchers and practitioners need to pay attention when designing interventions that the campaigns elicit positive CIC, which leads to higher behavioral outcomes, rather than negative CIC.

The findings from the present study also have implications for a social norms-based campaign message. The present study was conducted in the context of CIC regarding an injunctive norms campaign message. Injunctive norms messages exert stronger effects on behavioral outcomes compared to descriptive norms messages, according to a recent meta-analysis (Rhodes et al., 2020). Every participant was exposed to the injunctive norms message regardless of the prompt conditions. Participants' perceived injunctive norms from close others increased from T_0 (M = 5.57, SE = .08) to T_1 (M = 5.83, SE = .07), $t(251) = -4.18$, $p = .00$. The referent group of the provided injunctive norms message was the university students ("*9 out of 10 MSU students approve of other fellows Spartans choosing not to drink when partying or socializing with friends*"). Participants' CIC did not influence their perceived injunctive norms from close friends, unlike the past finding that conversation influences proximal normative perceptions (Campo et al., 2003). The result shows that social norms messages based on the university population can also influence college students' perceived injunctive norms from their personal proximal group. It can be explained by the fact that participants' close friends whom they drink with are likely to be other students who attended the same university. This finding highlights the importance of social norms campaigns in university communities to foster a healthy culture among college students. Individuals' decision making is closely related to perceived norms from proximal (Campo et al., 2003) and specific referent groups (Neighbors et al., 2010). It is not feasible to design personalized social norms messages as researchers cannot

[11] There was no statistically significant correlation between cognitive elaboration and frequency of negative CIC, r = -.08, p = 42

know what the audience's family/close friends do or think regarding the target behavior. The finding indicates that social norms campaigns that use university communities as referent groups are feasible to design and can achieve desirable outcomes as the campaigns can influence perceived norms from personal and proximal referent groups that are highly related to individuals' behavioral decisions.

The present study emphasizes that social norms messages need to be designed to encourage the audience to engage in cognitive elaboration. In other words, the audience needs to be encouraged to both talk about and think about the message and the topic of the message to achieve desirable campaign outcomes. Perceived injunctive norms and cognitive elaboration directly predicted behavioral intentions in the present study. Further, cognitive elaboration also predicted desired behaviors (the number of times participants chose not to drink) between T_0 and T_1. When the participants thought more about the injunctive norms message and the target behavior, they were likely to intend to practice the target behavior and actually engaged in the behavior.

One way to increase cognitive elaboration in the future is to highlight the relevance of the topic (Southwell & Yzer, 2009). The elaboration likelihood model underscores the role of personal involvement in persuasion as recipients' motivation to process persuasive messages is closely related to whether a topic is personally relevant to them or not (Petty & Cacioppo, 1981). The audience thinks more about the message when they have genuine interests and motivations for a topic. When the audience thinks the topics of the persuasive messages affect their abilities to achieve goals, values, or desirable impressions to others (Johnson & Eagly, 1989), they are likely to engage in cognitive elaboration when processing the persuasive messages. Therefore, future social norms-based campaign messages need to emphasize personal relevance in the

message to show why the topic matters to them. This can be beneficial in many ways, such that personal relevance not only predicts cognitive elaboration (Petty & Cacioppo, 1986) but also the occurrence of CIC (Southwell & Yzer, 2009; Brennan et al., 2017; Hwang & Southwell, 2007). Future studies also can examine whether perceived personal relevance can moderate the relationship between the frequency of positive CIC, cognitive elaboration, and behavioral outcomes. When the audience finds a message or topic relevant to them, they are expected to engage in more thought processing. However, it is also possible that the role of CIC may be limited to those who are already heavily involved in a campaign topic. Future studies can uncover the role of the audience's perceived relevance to the message topic in the context of CIC.

The present study's measurement of message recall was thorough as it used a composite score of memory tests rather than a single binary item to measure whether participants remembered the message or not. However, the result was not consistent with the hypotheses. Whereas cognitive elaboration and perceived injunctive norms from close others were found to be statistically significant predictors of behavioral outcomes in the present study, message recall was neither related to CIC nor behavioral outcomes. There were statistical differences in message recall scores across different prompt conditions M_{control} = 3.20, SE_{control} = .15, $M_{\text{prompt only}}$ = 2.85, $SE_{\text{prompt only}}$ = .15, $M_{\text{prompt \& plan}}$ = 3.42, $SE_{\text{prompt \& plan}}$ = .14, F (2, 249) = 4.00, p = .02. The difference between the prompt only and prompt & plan conditions was statistically significant. It may be surprising that the prompt only condition had lower message recall scores than the control condition. One of the plausible explanations is that participants from the prompt & plan condition had a chance to reinforce the information from the social norms message by typing out their CIC plan right after exposure to the message. Thus, it makes

sense that the prompt & plan condition had the highest message recall scores. It should be noted again that every participant was exposed to the injunctive norms message only once. The data was collected before the injunctive norms message was widely distributed to the campus. It means that participants could not revisit the injunctive norms message during CIC to verify the information. When participants in the prompt only condition engaged in CIC as they were instructed to, information from the injunctive norms message may have been distorted by the conversation between them and their close others, unlike the participants in the control condition who were not asked to engage in CIC. In real-life settings, the audience can revisit the campaign messages as much as they want during the CIC. They might even share the campaign messages on social media to close others to initiate CIC (e.g., Jeong, 2018). Therefore, rather than concluding that the prompt only condition deters the audience's message recall or message recall is not related to CIC based on the present study's findings, future research needs to be conducted to examine the relationship between CIC and message recall without limiting participants' message exposures. Also, this seemingly confusing result about message recall could have been clarified if the content of CIC were captured rather than a using a self-report recall measure. Future studies can use computer-mediated communication to capture the content of CIC to explore what people are actually communicating about (e.g., David et al., 2006; Robbin & Niedderdepe, 2016) and how such content influences people's perceptions and behavioral outcomes.

Overall, the prompt and positive CIC played a subtle but important role in predicting persuasive outcomes in the present study. The present findings suggest that when the audience is instructed to talk positively about the effects of the campaigns, they tend to talk positively about the campaign, which can lead to higher compliance with the campaign message via cognitive

elaboration. Although the results are promising, future research needs to be conducted to generalize these findings. The campaign message used in the present study featured an existing animal mascot from a large health campaign project on campus. More than half of the participants reported they recalled that they saw a similar campaign message on campus. The fact that they saw a similar campaign message with the same animal mascot on campus did not directly influence any of the key variables of interest in the present study; however, the perceived familiarity of the campaign might have interacted with the effects of positive CIC. The results regarding positive CIC may be different when the audience is induced to talk about a novel and unfamiliar message. Future studies will help generalize the present findings and further specify conditions when CIC is effective in campaign outcomes.

LIMITATIONS

This study is not without limitations. First, cognitive elaboration was not measured for those who did not have CIC about the injunctive norms message due to a programming error. Although the result indicates that a more frequent positive CIC leads to cognitive elaboration, more insights will come when comparing cognitive elaboration between those who had conversations about the campaign message and who did not have such conversations. Future research needs to capture cognitive elaboration for every participant regardless of their CIC status. Second, cognitive elaboration measurement is generic in that only the quantity of cognitive elaboration was captured rather than its quality. The present study only captured self-reported responses about how much the participants thought about the topic and the campaign message. It is not clear what kind of thought processing they engaged in and what aspects of the topic/message they thought about. Future studies need to develop more sophisticated measure of cognitive elaboration and take more holistic approach in capturing individuals' cognitive elaboration using open-ended questions or thought-listing techniques (Cacioppo & Petty, 1979). Third, the operationalization of CIC is not fully matched with its conceptual definition. Conceptually CIC includes conversations about the message and the topic of the message. In the current operationalization, only conversation about the campaign message was measured as CIC. Future studies need to include the conversation about the target behavior/topic when measuring CIC. Lastly, the present study did not measure participants' behaviors after T_1. Time order between frequency of positive CIC, cognitive elaboration, and behaviors at T_1 cannot be confirmed as those were measured at the same time. Future research should add one more time-wave to follow participants' behavioral compliance in addition to T_0 and T_1.

CONCLUSION

Interpersonal communication and mass communication behaviors are closely related to each other. Individuals' mass-media selection and consumption can be guided by a social desire to have interpersonal communication (Atkin, 1972) and interpersonal communication contributes to dissemination of mass-media information (Katz & Lazarfeld, 1955). Guided by the past research, the findings of the present study confirm that positive conversations about campaign messages can bring desirable campaign outcomes. By having positive conversations about the campaign message with close friends, individuals can think about the campaigns which influenced their behavioral decisions. Based on the findings, future social norms-based campaigns can include simple discussion prompts to encourage the audience to have positive conversations about the campaigns. Also, the future campaigns can emphasize relevance of the topic to motivate the audience to engage in cognitive elaboration. The findings of the present study suggest that interpersonal communication needs to be accounted in evaluating campaign messages. The campaigns may not have intended direct effects, but interpersonal communication induced by campaigns might have more subtle effects.

APPENDICES

APPENDIX A: TABLES

Table 1. Frequency table of participants' baseline characteristics

Baseline Characteristic	All (n = 252)	Control Condition (n = 83)	Prompt Only Condition (n = 86)	Prompt & Plan Condition (n = 83)
Mean of Age (SD)	20.26 (1.55)	20.38 (1.87)	20.17 (1.25)	20.17 (1.48)
Sex				
Male	77	26	29	22
Female	174	56	57	61
Class level				
Freshman	37	14	12	11
Sophomore	62	21	19	22
Junior	67	16	26	25
Senior	86	32	29	25
Ethnicity				
Black/African American	14	6	5	3
Asian/Pacific Islander	26	7	12	7
Hispanic/Latino	25	9	8	9
White/Caucasian	204	68	69	67
American Indian	1	0	0	1
Other	1	0	0	1
Greek Status				
Greek	39	13	17	9
Non-Greek	213	70	69	74
Student Status				
International Students	9	3	2	4
Domestic Students	243	80	84	79

Note: There were no statistically significant differences in the participants' baseline characteristic across the conditions

Table 2. Descriptive statistics by condition

	All		Control Condition		Prompt Only Condition		Prompt & Plan Condition	
Variables	Mean	SD	Mean	SD	Mean	SD	Mean	SD
T0 Measure								
PIN	5.57	1.28	5.54	1.32	5.48	1.31	5.70	1.23
PIN%	79.96	24.01	80.27	22.42	79.56	25.41	80.07	24.35
PDN%	44.86	27.05	44.64	27.25	41.93	28.16	48.15	25.59
Behavioral Intentions	4.76	1.68	4.77	1.63	4.90	1.76	4.62	1.63
Attitudes	5.39	1.13	5.30	1.15	5.46	1.05	5.40	1.19
Typical Alcohol Consumption	4.67	2.77	4.55	2.70	4.81	3.24	4.65	2.32
Message Exposure (seconds)	10.31	14.37	9.67	8.45	9.26	19.98	12.04	11.91
T1 Measure								
Freq. Positive CIC*	1.17	1.60	0.10	0.53	1.51	1.70	1.90	1.65
Freq. Negative CIC	0.17	0.63	0.08	0.67	0.27	0.77	0.16	0.37
PIN	5.83	1.16	5.71	1.11	5.80	1.17	5.98	1.21
PIN%	80.96	23.82	81.28	22.63	79.84	24.12	81.80	24.88
PDN%	48.22	27.37	46.62	26.00	45.33	28.23	52.81	27.53
Cognitive Elaboration†	3.57	1.24	4.22	1.02	3.60	1.28	3.51	1.21
Message Recall*	3.15	1.35	3.20	1.38	2.85	1.35	3.42	1.26
Behavioral Intentions	5.04	1.63	5.19	1.71	5.12	1.54	4.81	1.63
Attitudes	5.62	1.09	5.45	1.18	5.77	0.97	5.64	1.11
Typical Alcohol Consumption	4.45	2.60	4.48	2.67	4.37	2.81	4.51	2.33
Behaviors*	2.40	1.65	2.01	1.26	2.47	1.75	2.73	1.81

Note: PIN = perceived injunctive norms, PDN = perceived descriptive norms

*Statistical differences across the conditions, $p < .01$

† Cognitive elaboration was not measured for every participant ($n_{\text{control}} = 3$, $n_{\text{prompt only}} = 54$, $n_{\text{prompt \& plan}} = 58$).

Table 3. Correlation matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.Prompt	1													
2. Greek	-.05	1												
3. PDN T0	.05	-.10	1											
4. PIN T0	.05	.03	.35**	1										
5. BI T0	-.04	-.14*	.29**	.34**	1									
6. Att T0	.04	-.13*	.28**	.37**	.41**	1								
7. + CIC	.46**	.12	.00	.07	-.02	.00	1							
8. PIN T1	.10	-.05	.33**	.70**	.27**	.35**	.11	1						
9. CE T1	-.07	.03	.04	.06	.12	.19*	.37**	.09	1					
10. Att T1	.07	-.06	.19**	.34**	.30**	.48**	.17**	.45**	.20*	1				
11. Recall	.07	-.02	.07	-.02	-.04	-.06	-.01	.05	-.09	-.05	1			
12. BI T1	-.10	-.20**	.24**	.28**	.62**	.36**	-.02	.40**	.29**	.46**	-.04	1		
13. PDN T1	.09	-.14*	.69**	.34**	.26**	.28**	.01	.35**	.06	.33**	.07	.38**	1	
14. Beh T1	.18**	.03	.22**	.03	.20**	.09	.14*	.07	.28**	.14*	-.11	.14*	.17**	1

Note: Prompt (1 = control, 2 = prompt only, 3 = prompt & plan), Greek (0 = Non-Greek, 1 = Greek), PIN = perceived injunctive norms, PDN = perceived descriptive norms, BI = behavioral intentions, Att = attitudes, + CIC = a frequency of positive CIC, CE = cognitive elaboration, Recall = message recall, Beh = behaviors

* $p < .05$ ** $p < .01$

Table 4. The relationships between positive CIC, cognitive elaboration, and behavioral intentions

Predictor	*b*	*SE*	*p*	95% CI	
Mediator model (Cognitive Elaboration): R^2 = .17, F(5, 109) =4.46, p <.01					
Constant	2.59	.84	.00	.93	4.25
Frequency of Positive CIC**	.31	.08	.00	.06	.16
Prompt	-.27	.20	.18	-.66	.13
Greek	-.11	.29	.72	-.69	.48
Attitudes	.17	.12	.15	-.40	.47
Typical Alcohol Consumption	-.03	.04	.54	-.11	.06
Dependent variable model (Behavioral Intentions): R^2 = .22, F(6,108) = 5.22, p <.01					
Constant	1.56	1.06	.14	-.54	3.66
Frequency of Positive CIC	-.13	.10	.22	-.33	.08
Cognitive Elaboration**	.33	.12	.01	.10	.56
Prompt	-.02	.24	.92	-.50	.46
Greek	-.39	.36	.27	-1.10	.31
Attitudes**	.52	.14	.00	.24	.80
Typical Alcohol Consumption	-.07	.05	.19	-.17	.03
Direct Effect of Freq. Positive CIC on Behavioral Intentions					
	-.13	.10	.22	-.33	.08
Indirect effect of Freq. Positive CIC on Behavioral Intentions					
Cognitive Elaboration	.10	.04		.04	.19

** p < .01

Table 5. The relationships between positive CIC, perceived injunctive norms, message recall, and behavioral intentions

Predictor	*b*	*SE*	*p*	95% CI	
Mediator model (Perceived Injunctive Norms): R^2 = .21, $F(5, 246)$ =13.20, p <.01					
Constant	3.16	.42	.00	2.33	4.00
Frequency of Positive CIC	.01	.05	.81	-.08	.11
Prompt	.08	.09	.38	-.10	.26
Greek	-.05	.19	.79	-.42	.32
Attitudes**	.46	.06	.00	.34	.59
Typical Alcohol Consumption	-.03	.03	.36	-.08	.03
Mediator model (Message Recall): R^2 = .02, $F(5, 246)$ =.88, p =.50					
Constant	3.00	.55	.00	1.91	4.07
Frequency of Positive CIC	.14	.12	.25	-.15	.09
Prompt	-.12	.24	.63	-.59	.36
Greek	-.12	.24	.63	-.59	.36
Attitudes	-.05	.08	.55	-.21	.11
Typical Alcohol Consumption	.05	.04	.15	-.02	.11
Dependent variable model (Behavioral Intentions): R^2 = .35, $F(7, 244)$ = 18.48, p <.01					
Constant	1.64	.62	.01	.41	2.87
Frequency of Positive CIC	-.02	.06	.75	-.14	.10
Perceived Injunctive Norms**	.34	.08	.00	.18	.50
Message Recall	-.01	.06	.87	-.14	.12
Prompt*	-.28	.12	.02	-.52	-.05
Greek	-.65	.24	.01	-1.12	-.18
Attitudes**	.48	.09	.00	.30	.65
Typical Alcohol Consumption**	-.12	.03	.00	-.19	-.06
Indirect effect of Freq. Positive CIC on Behavioral Intentions					
Perceived Injunctive Norms	.00	.02		-.03	.03
Message Recall	.00	.00		-.01	.01

*p < .05, ** p < .01

Table 6. The serial mediation between the prompt conditions, positive CIC, perceived injunctive norms, and behavioral intentions

Predictor	*b*	*SE*	*p*	95% CI	
Mediator model (Frequency of Positive CIC): R^2 = .26, $F(6, 245)$ =13.74, p <.01					
Constant	-1.10	.54	.04	-2.15	-.04
Prompt Only Condition**	1.36	.22	.00	.92	1.79
Prompt & Plan Condition**	1.77	.22	.00	1.33	2.21
Attitudes**	.22	.09	.01	.05	.40
Perceived Descriptive Norms	-.00	.00	.68	-.06	.09
Typical Alcohol Consumption	.02	.04	.68	-.06	.09
Greek*	.54	.25	.03	.05	1.04
Mediator model (Perceived Injunctive Norms): R^2 = .25, $F(7, 244)$ =11.17, p <..01					
Constant	3.25	.39	.00	2.48	4.02
Prompt Only Condition	-.05	.17	.78	-.39	.29
Prompt & Plan Condition	.15	.18	.43	-.21	.51
Frequency of Positive CIC	.02	.05	.69	-.07	.11
Attitudes**	.38	.07	.00	.26	.51
Perceived Descriptive Norms**	.01	.00	.00	.00	.01
Typical Alcohol Consumption	-.01	.03	.60	-.07	.04
Greek	.00	.18	.99	-.36	.36
Dependent variable model (Behavioral Intentions): R^2 = .36, $F(8, 243)$ = 16.08, p <.01					
Constant	1.68	.58	.00	.54	2.82
Prompt Only Condition	-.19	.22	.41	-.63	.26
Prompt & Plan Condition**	-.61	.24	.01	-1.08	-.15
Frequency of Positive CIC	-.02	.09	.69	-.15	.10
Perceived Injunctive Norms**	.23	.09	.01	.07	.40
Attitudes**	.41	.09	.00	.23	.59
Perceived Descriptive Norms**	.01	.00	.00	.00	.02
Typical Alcohol Consumption**	-.11	.03	.00	-.19	-.04
Greek*	-.52	.24	.03	-.99	-.05
Direct Effect of the Prompt Conditions on Behavioral Intentions					
Prompt Only Condition (vs. Control)	-.19	.22	.41	-.63	.26
Prompt & Plan Condition (vs. Control)**	-.61	.23	.02	-1.08	-.15
Indirect Effect of the Prompt Conditions on Behavioral Intentions via Two Mediators					
Prompt Only Condition (vs. Control)	.01	.02		-.02	.04
Prompt & Plan Condition (vs. Control)	.01	.02		-.03	.05

*p < .05, ** p < .01

Note: Control Condition was entered as a baseline

Table 7. The serial mediation between the prompt conditions, positive CIC, message recall, and behavioral intentions

Predictor	*b*	*SE*	*p*	95% CI	
Mediator model (Frequency of Positive CIC): R^2 = .26, $F(6, 245)$ =13.94, p <.01					
Constant	-1.19	.53	.03	-2.25	-.14
Prompt Only Condition**	1.33	.22	.00	.90	1.77
Prompt & Plan Condition**	1.79	.22	.00	1.35	2.23
Attitudes**	.23	.09	.01	.05	.40
Perceived Descriptive Norms	-.00	.00	.38	-.01	.00
Typical Alcohol Consumption	.02	.04	.52	-.05	.09
Greek*	.54	.25	.03	.05	1.04
Mediator model (Message Recall): R^2 = .05, $F(7, 244)$ =11.17, p =.12					
Constant	3.17	.52	.00	2.16	4.19
Prompt Only Condition	-.34	.23	.14	-.78	.11
Prompt & Plan Condition	.24	.24	.33	-.24	.71
Frequency of Positive CIC	-.00	.06	.99	-.12	.12
Attitudes	-.06	.09	.47	-.23	.11
Perceived Descriptive Norms	.00	.00	.29	-.00	.01
Typical Alcohol Consumption	.05	.03	.18	-.02	.11
Greek	-.07	.24	.77	-.55	.41
Dependent variable model (Behavioral Intentions): R^2 = .34, $F(8, 243)$ = 14.79, p <.01					
Constant	2.39	.55	.00	1.30	3.48
Prompt Only Condition	-.19	.23	.41	-.64	.26
Prompt & Plan Condition**	-.57	.24	.02	-1.04	-.09
Frequency of Positive CIC	-.02	.06	.79	-.14	.11
Message Recall	.01	.07	.93	-.12	.13
Attitudes**	.51	.09	.00	.34	.68
Perceived Descriptive Norms**	.01	.00	.00	.01	.02
Typical Alcohol Consumption**	-.11	.03	.00	-.18	-.05
Greek*	-.53	.24	.03	-1.01	-.05
Direct Effect of the Prompt Conditions on Behavioral Intentions					
Prompt Only Condition (vs. Control)	-.19	.22	.41	-.63	.26
Prompt & Plan Condition (vs. Control)**	-.61	.23	.02	-1.08	-.15
Indirect Effect of the Prompt Conditions on Behavioral Intentions via Two Mediators					
Prompt Only Condition (vs. Control)	.00	.00		-.01	.01
Prompt & Plan Condition (vs. Control)	.00	.01		-.01	.02

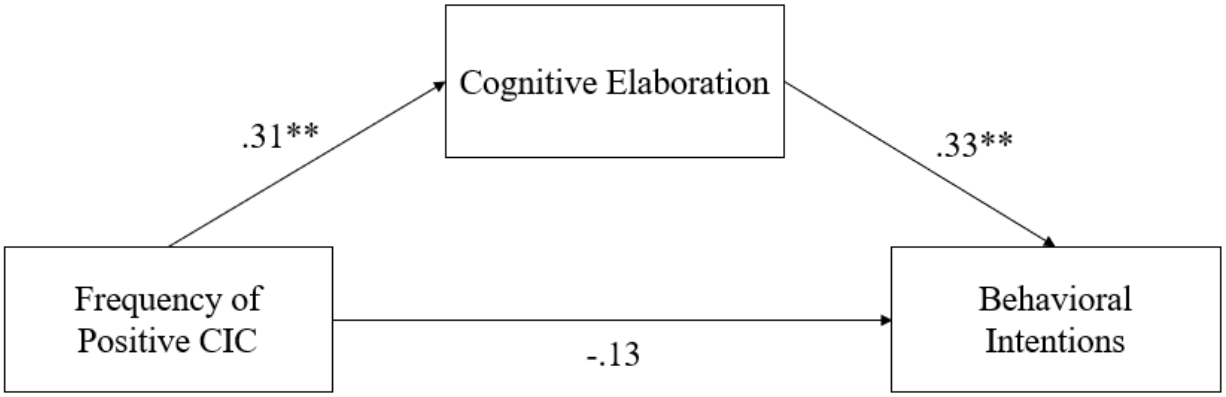
*p < .05, ** p < .01

Note: Control Condition was entered as a baseline

APPENDIX B: FIGURES

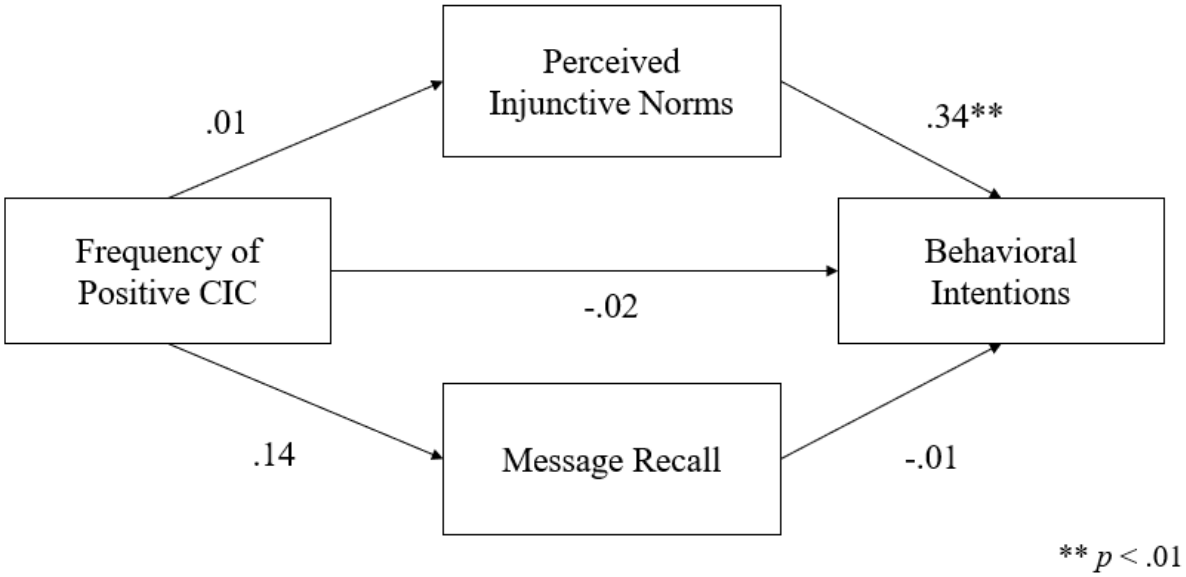
Figure 1. Injunctive norms message

Figure 2. The relationships between frequency of positive CIC, cognitive elaboration, and behavioral intentions



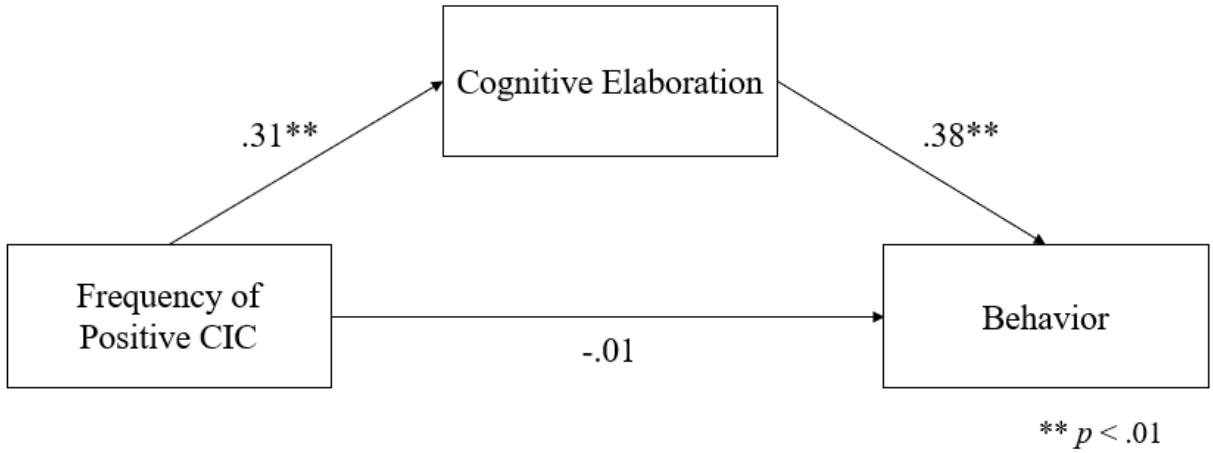
- Indirect effect (w/ 95% bootstrapped CIs): .10 [.04, .19]

Figure 3. The relationships between frequency of positive CIC, perceived injunctive norms, message recall, and behavioral intentions



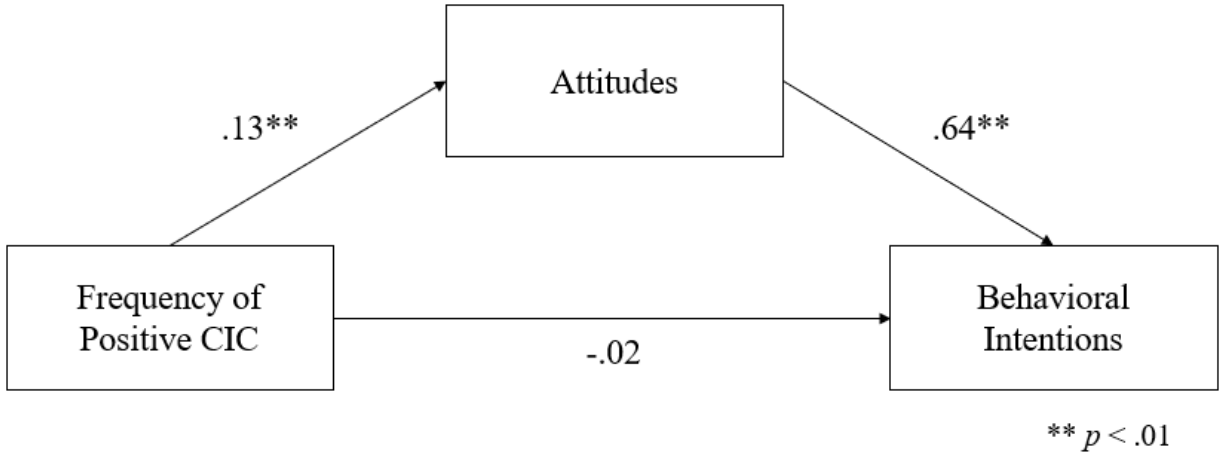
- Indirect Effect via Perceived Injunctive Norms (w/ 95% bootstrapped CIs): .00 [-.03, .03]
- Indirect Effect via Message Recall (w/ 95% bootstrapped CIs): .00 [-.01, .01]

Figure 4. The relationships between frequency of positive CIC, cognitive elaboration, and behaviors



- Indirect effect (w/ 95% bootstrapped CIs): .12 [.04, .23]

Figure 5. The relationships between frequency of positive CIC, attitudes, and behavioral intentions



- Indirect effect (w/ 95% bootstrapped CIs): .09 [.03, .15]

Figure 6. The table of the approximate number of standard drinks

STANDARD DRINK EQUIVALENTS	APPROXIMATE NUMBER OF STANDARD DRINKS IN:
BEER or COOLER	
12 oz.  **~5% alcohol**	12 oz. = 1 16 oz. = 1.3 22 oz. = 2 40 oz. = 3.3
MALT LIQUOR	
8-9 oz.  **~7% alcohol**	12 oz. = 1.5 16 oz. = 2 22 oz. = 2.5 40 oz. = 4.5
TABLE WINE	
5 oz.  **~12% alcohol**	a 750 mL (25 oz.) bottle = 5
80-proof SPIRITS (hard liquor)	
1.5 oz.  **~40% alcohol**	a mixed drink = 1 or more* a pint (16 oz.) = 11 a fifth (25 oz.) = 17 1.75 L (59 oz.) = 39 *Note: Depending on factors such as the type of spirits and the recipe, one mixed drink can contain from one to three or more standard drinks.

APPENDIX C: QUESTIONNAIRE

*Note: *Item dropped due to weak factor loading*

<T0 Questionnaire>

Perceived Injunctive Norms from Close Friends (7-point Likert Scale; Park & Smith, 2007)

- Most of my close friends approve of me occasionally choosing not to drink alcohol when socializing or partying with friends.
- Most of my close friends endorse my choice of occasionally choosing not to drink alcohol when socializing or partying with friends.
- Most of my close friends support that I occasionally choosing not to drink alcohol when socializing or partying with friends.
- Most of my close friends think I should occasionally choose not to drink alcohol when socializing or partying with friends.*

Perceived injunctive norms from close friends (%)

- In your estimation, what percentage of your close friends approve of occasionally choosing not to drink alcohol when socializing or partying with friends? [0-100%]

Intentions to Practice the Target Behavior (7-point Likert Scale)

- I intend to choose not to drink alcohol occasionally when socializing or partying with friends.
- In the future, I will choose not to drink alcohol occasionally when socializing or partying with friends.
- I plan to choose not to drink alcohol occasionally when socializing or partying with friends.
- I will choose not to drink alcohol occasionally when socializing or partying with friends.

Attitudes

- Choosing not to drink alcohol occasionally when socializing or partying with friends is (good—bad, undesirable—desirable, positive—negative, harmful—beneficial)

True injunctive norms

- I approve of my close friends deciding not to drink alcohol occasionally when socializing or partying with friends (Yes/No).

True descriptive norms

- I occasionally choose not to drink alcohol when socializing or partying with friends. (Yes/No)

Perceived descriptive norms (%)

- In your estimation, what percentage of your close friends occasionally choose not to drink alcohol when socializing or partying with friends? [0-100%]

Alcohol Consumption

- How many drinks containing alcohol do you have when you party?

Prompt for Positive CIC

With your close friend(s), discuss the following items in next 6 days.

(1) What the campaign message is about
(2) How this campaign message can be effective in reducing alcohol-related issues in MSU
(3) How this campaign successfully encourages alcohol-reduction in MSU

Plan for CIC

- Describe close friend(s) you are planning to talk with about the campaign message (including gender, age, university/school, etc.). Please do NOT provide any identifiable information (e.g., name). [short essay box]
- How would you address the following items with your communication partner? Describe what you are going to say. [short essay box for each question]
    - What the campaign message is about
    - How this campaign message can be effective in reducing alcohol-related issues in MSU
    - How this campaign successfully encourages alcohol-reduction in MSU

Demographic Information

- Your age
- Your biological sex [male/female/other/prefer not to answer]
- I am currently [freshman/sophomore/junior/senior/other]
- Nationality
- Ethnicity
- Greek membership status (Fraternity/sorority/non-member of Greek organization)

<T1 Questionnaire>

CIC Recall

- Describe close friend(s) you talked with about the campaign message (including gender, age, university/school, etc.). Please do NOT provide any identifiable information (e.g., name). [short essay box]
- Think of most memorable conversation you've had about the campaign message. How did you address the following items with your communication partner? Describe what you said. [short essay box for each question]
    - What the campaign message is about
    - How this campaign message can be effective in reducing alcohol-related issues in MSU
    - How this campaign successfully encourages alcohol reduction in MSU

Frequency of positive talk about the mass media message (Morgan et al., 2018)

During the last 7 days, how many times did you talk to close friends <u>positively</u> about the new MSU campaign poster that we presented to you last week?

[open-ended] time(s)

During the last 7 days, how many times did you talk to close friends <u>positively</u> about choosing not to drink alcohol occasionally when socializing or partying with friends?

[open-ended] time(s)

Frequency of negative talk about the mass media message (Morgan et al., 2018)
"During the last 7 days, how many times did you talk to close friends negatively about the new MSU campaign poster that we presented to you last week?"

[open-ended] time(s)

"During the last 7 days, how many times did you talk to close friends negatively about choosing not to drink alcohol occasionally when socializing or partying with friends?

[open-ended] time(s)

Cognitive Elaboration (Borland et al., 2009; Hammond et al., 2003; Morgan et al., 2018)
"During the last 7 days, how much did the new MSU campaign poster that you saw last week cause you to think about choosing not to drink alcohol occasionally when socializing or partying with friends?"

- Semantic differentials: Not at all (1) - all the time (7)

"During the last 7 days, how often did you think about the information that the new MSU campaign poster conveys?"

- Never (1) – all the time (7)

"During the last 7 days, how often did you think about drinking non-alcoholic drinks when socializing or partying with friends?"*

- Never (1) – all the time (7)

"During the last 7 days, how often did you think about choosing not to drink alcohol occasionally when socializing or partying with friends?"

- Never (1) – all the time (7)

Perceived Injunctive Norms from Close Friends (7-point Likert Scale; Park & Smith, 2007)

- Most of my close friends approve of me choosing not to drink alcohol occasionally when socializing or partying with friends.
- Most of my close friends endorse my choice of choosing not to drink alcohol occasionally when socializing or partying with friends.
- Most of my close friends support that I choose not to drink alcohol occasionally when socializing or partying with friends.
- Most of my close friends think I should choose not to drink alcohol occasionally when socializing or partying with friends.*

Perceived injunctive norms from close friends (%)

- In your estimation, what percentage of your close friends approve of choosing not to drink alcohol occasionally when socializing or partying with friends? [0-100%]

Intentions to Practice the Target Behavior (7-point Likert Scale)

- I intend to choose not to drink alcohol occasionally when socializing or partying with friends.
- In the future, I will choose not to drink alcohol occasionally when socializing or partying with friends.

- I plan to choose not to drink alcohol occasionally when socializing or partying with friends.
- I will choose not to drink alcohol occasionally when socializing or partying with friends.

Attitudes

- Choosing not to drink at parties is (good—bad, undesirable—desirable, positive—negative, harmful—beneficial)

True injunctive norms

- I approve of my close friends choosing not to drink at parties. (Yes/No)

True descriptive norms

- I usually choose not to drink at parties. (Yes/No)

Perceived descriptive norms (%)

- In your estimation, what percentage of your close friends choose not to drink at parties? [0-100%]

Alcohol Consumption

- How many drinks containing alcohol do you typically have when socializing or partying with friends?
- **On average per a party/socializing event**, how many drinks containing alcohol did you have for the last six days?

Similar Campaign Message Recall

- Do you recall seeing any Duck messages on posters, flyers, ads, digital screens, billboards, bulletin boards, bathroom stalls, placards, table tents, T-shirts, etc., around campus about alcohol? (Yes/No)

Practicing Choosing not to Drink (Behaviors)

- After we presented a new MSU campaign poster to you last week, how many times did you choose not to drink alcohol when socializing or partying with friends? [open-ended]

Message Recall

(1) The new MSU campaign poster you saw last week contains information about other MSU students' approval of occasionally choosing not to drink alcohol when socializing or partying with friends. (**True**/False)
(2) The new MSU campaign poster you saw last week contains information about the number of drinks other MSU students have at parties. (True/**False**)
(3) The Sparty mascot is featured in the new MSU campaigns poster you saw last week (True/**False**)
(4) The MSU campaign poster you saw last week was based on 90% of MSU students (**True**/False).
(5) The MSU campaign poster you saw last week was based on 70% of MSU students (True/**False**).

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