

RESPONSIBLE DRINKING MESSAGES VIA THE INTERNET: STRATEGIES  
THAT COULD POTENTIALLY INDUCE AN INTENDED ATTITUDE CHANGE  
AMONG COLLEGE STUDENTS

BY  
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A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF ARTS IN COMMUNICATION

WASHINGTON STATE UNIVERSITY  
Edward R. Murrow School of Communication

MAY 2007

To the faculty of Washington State University:

The members of the Committee appointed to examine the thesis of NIDHI KIRPAL find it satisfactory and recommend that it be accepted.

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CHAIR

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## ACKNOWLEDGMENT

I would like to thank Dr. Moon J. Lee, Dr. Douglas Blanks Hindman, and Dr. E. Lincoln James for their invaluable guidance and encouragement through the course of this study.

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Abstract

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May 2007

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Using past literature on message framing, information processing, risk-taking tendencies, and persuasion, as its theoretical base, this study attempted to analyze what kinds of Internet-mediated responsible drinking messages are likely to predict message elaboration, acceptance, and attitude change among college students. Two strategies were tested, namely using fear and humor messages, and within those messages the study tested the use of direct and indirect referencing as a means of predicting message elaboration, acceptance, and attitude change. It was also hypothesized that college students' risk-taking tendencies, particularly disinhibition tendencies would influence these variables. For low disinhibitors it was found that fear messages rather than humor messages predicted greater message elaboration, acceptance, and attitude change. For high disinhibitors, it was found that humor as a strategy could perhaps predict message acceptance. Specifically, it was found that indirect-referenced humor messages predicted greater message acceptance than direct-referenced humor messages for high disinhibitors.

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## INTRODUCTION

Alcohol-related problems have been a common cause of concern on college campuses. According to Hingson, et al. (2005), 599,000 students between the ages of 18 and 24 years are unintentionally injured under the influence of alcohol. More than 696,000 students are assaulted by another student who has been drinking, and at least 97,000 students are victims of alcohol-related sexual assault or date rape. A third of the adolescents in the U.S. between the age of 16 and 21 years have reported to have driven after drinking and ridden in a car with a driver who had consumed alcohol (Ozer, et al., 1997).

Public service announcements (PSAs) and paid advertisements by liquor companies advocating “responsible drinking” behavior have been conspicuous media interventions. While print and television have been widely used and studied, this study seeks to explore specifically what strategies of using direct and indirect referencing in fear and humorous print Internet-mediated responsible drinking messages could potentially induce an attitude change towards responsible drinking practices among college students. The proposed research question is addressed by reviewing past literature related to message framing, information processing, and persuasion.

It would also be important to establish why this study focuses specifically on the Internet as a medium to communicate responsible drinking messages to college students. The Internet has been chosen for two reasons: (a) the high popularity of the medium among college students; and (b) the highly interactive nature of the medium, providing marketers and advertisers the ability to target messages directly to the requisite audience;



*The use of the Internet by college students and marketers:*

Email and other CMC technologies have become important social gadgets especially for young people today (Herring, 2004). Recchiuti (2003) explores the reasons for college students' heavy use of the Internet (email, IM, and chat rooms). According to her, they use email, as it is convenient and easy, a good pass time, and an escape from work pressures. IM is used for reasons of companionship and anonymity, along with reasons of escape from the daily humdrum. Email is used by students for information seeking and task-oriented communication, and IM for more social activities such as entertainment and interpersonal communication.

The Internet today is also an integral part of college students' overall university experience and culture. According to the Pew Internet and American Life Project (2005), Internet users between the age of 18 and 28 years spend about 82% of their time using email (Fox & Madden, 2005). Further, according to the Pew Internet and American Life Project (Sept. 2002) study, on average, 74% college students spend more than 4 hours a week on the internet and 19% for more than 12 hours. College students also frequently look for email, with 72% of them checking it at least once a day (Jones & Madden, 2002). The heavy use of the medium has thus, made it a large part of college students' active online social life, making the Internet a powerful medium to reach out to them.

Owing to the highly interactive nature of the medium, marketers and advertisers have the opportunity to provide consumers with personalized and customized information and other such new capabilities that are missing in traditional media (Burke, 1997; Rainie, 2007). Moreover, consumers are also more likely to respond to personalized

media messages that are in accordance with their interests (Stewart, Pavlou, & Ward, 2002).

While such characteristics emphasize the different possibilities of what web advertising can have on users, it also draws attention towards understanding the impact consumers can have on Internet-mediated advertising (Cross & Smith, 1995). This relates specifically to issues of how and when they interact with a message if at all, goals and motivation of the users to interact, and so forth.

These issues beg inquiry particularly into strategies that could potentially predict circumstances under which the persuasive goals of Internet-mediated responsible drinking messages could work for their target audiences. As mentioned earlier, this study specifically attempts to test the effectiveness of using fear and humorous responsible drinking messages in predicting attitude change among college students. Further, as discussed in detail under the literature review section, studies have also tested the strategy of using direct and indirect referencing particularly in fear-appeal messages to induce relevance and persuasion for different audiences. This study, thus, seeks to test the strategy of using Internet-mediated fear and humor-appeal responsible drinking messages, and within those appeals, it seeks to explore the strategy of using direct and indirect referencing as a means of predicting message acceptance and persuasion among college students.

In order to further explore aspect such as acceptance of responsible drinking messages by college students, as precursors towards attitude change, a discussion about the role played by alcohol on college campuses, and college students' predispositional factors like their goals and motivation to drink, attitudes towards drinking, and so forth,

would be useful. It would provide helpful insights into college students' reasons and motivations to indulge in excessive drinking, given that "each person evaluates the components of a message in relation to his or her prior experiences, culture, and personality characteristics" (Witte, 1992). Thus, past literature related to message framing, information processing, and persuasion will also be reviewed, in order to establish a connection between college students' attitudes, personality predispositions, information processing, and persuasion that go hand in hand on being exposed to responsible drinking messages.

## LITERATURE REVIEW

### *Alcohol use among college students: reasons and motivations:*

Given that excessive consumption of alcohol has various negative physical and psychological consequences like: injuries (fatal and non-fatal), poor academic performance, violence, unintended pregnancies, and STDs (Goldman, 2002; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Perkins, 2002a; Wechsler et al., 2000), why do 50% college students in the U.S. indulge in what has been operationalized as “dangerous drinking”? (O’Malley & Johnston, 2002).

Clearly they see compelling motivational gains in excessive and sometimes dangerous drinking. Theoretically, researchers have explained this behavior with the help of the theory of reasoned action (Fishbein & Ajzen, 1975) and the social norms theory (Berkowitz & Perkins, 1986; Haines & Spear, 1996; Perkins, 1997).

According to Dewey (1929) and Kolb (1984), learning occurs through experience and is influenced by degrees of positive and/or negative outcomes (Fishbein & Ajzen, 1975). Adapting this explanation to the issue of drinking on college campuses, it is argued that college students apply a similar cognitive exercise and social comparison (Bandura, 1986) of their behaviors, attitudes, and perceptions regarding alcohol consumption with those of their peers and learn to be a part of a culture that they perceive is most “acceptable” on campus. This is in turn, influenced by their varying degrees of motivations and perceptions of possible positive or negative outcomes (Fishbein & Ajzen, 1975) that predict their embracing the drinking culture on college campuses.

Studies have indicated that students attach various positive outcomes to drinking alcohol on college campuses. For instance, they believe that alcohol plays an important

role in developing relationships and social bonds (Hanson, 1984; Rabow & Duncan-Schill, 1995). Studies have also demonstrated that students associate drinking alcohol with a symbol of becoming mature, and treat it as a way to make friends, and explore personal identities (Maggs, 1997; Paschall & Flewelling, 2002). They also turn towards alcohol to cope with stress and anxiety associated with a new environment (Paschall & Flewelling, 2002).

Another factor that contributes considerably towards excessive and sometimes irresponsible alcohol consumption among college students is their belief that college culture in itself is perceived as being synonymous with excessive drinking (Lederman, 1993). Theoretically, this has been further explained by the social norms theory. Social norms theory describes situations when individuals incorrectly perceive attitudes and behaviors of others and measure the appropriateness of their own behavior against those of their peers/others (Berkowitz & Perkins, 1986; Haines & Spear, 1996; Perkins, 1997).

The theory proposes that individuals misperceive prevalent norms of behavior as different from them, when in reality they aren't. Relating this to the problem of excessive alcohol consumption on college campuses, the authors suggest that students misperceive the fact that their peers drink more than them, when they actually don't (Berkowitz & Perkins, 1986; Bourgoise & Bowen, 2001; Lederman et al., 1998; Perkins, 1997). This myth in turn, pressurizes students to resort to high alcohol consumption in order to keep up with their peers (Lederman & Stewart, 2005). College students, thus, justify the act of too much alcohol consumption and ignore healthy lifestyles (Berkowitz, 2005). As demonstrated by these scholars, it is then no surprise that drinking on college campuses is not always responsible and could get dangerous.

*Receptivity of responsible drinking messages among college students:*

If excessive drinking among college students is a function of their perceived positive motivations as mentioned in the previous section, these attitudes are likely to influence their receptivity of a responsible-drinking message. Thus, the success of Internet-mediated responsible drinking messages, like any other media message, would depend largely, upon their ability to induce an intended attitude change among college students.

Various components of the message would predict the persuasiveness of the message. It would depend not only upon the persuasive information in the message, but also students' reactions towards the information, their environmental and social predispositions, and their attitudes towards drinking, for instance will be some factors. This is given that "each person evaluates the components of a message in relation to his or her prior experiences, culture, and personality characteristics" (Witte, 1992). Thus, people selectively attend to information that is personally relevant to them (Greenwald & Leavitt, 1984; Krugman, 1988; Pechmann & Stewart, 1988).

Various individual differences like motivation, ability, prior learning, and emotional reactions towards the message impact how consumers process advertising messages, if at all (Thorson, 1990). According to Zillmann and Bryant (1994), this is selective exposure where people tend to attend to communications that are consistent with their predispositions and are perceived to be personally relevant to them.

Theoretically, this is explained as follows: It has been mentioned earlier that learning of social norms is a function of social comparisons (Bandura, 1986), and experiential learning (Dewey, 1929; Kolb, 1984). Festinger (1957) extends these

assumptions to the fact that people select information that is consistent with their existing attitudes and beliefs and avoid information that is discrepant or inconsistent. This is in keeping with Heider's (1958) balance theory and Osgood and Tannenbaum's (1955) congruity theory, which maintains that people seek cognitive consistency. As explained by the social norms approach, since students observe their peers and start believing that they support excessive drinking on campus (Perkins, 1997; Perkins, Meilman, Leichliter, Cashin, & Persley, 1999; Perkins & Wechsler, 1996), they too start resorting to high amounts of alcohol consumption.

This behavior is also moderated by their belief that their friends and peers drink more than they do (Berkowitz & Perkins, 1986; Bourgeois & Bowen, 2001; Lederman et al., 1998; Perkins, 1997). Since misconceptions such as this reinforce students' pre-existing beliefs and knowledge, along with the positive motivations to consume excessive amounts of alcohol, it could be inferred that college students may have an automatic tendency to have an unfavorable reaction to responsible drinking messages.

Barriers to receptivity and attention for college students, for instance, may occur on seeing messages with certain terms they believe don't apply to them. Studies, for instance, have demonstrated that college students do not believe terms such as "problematic" or "abnormal" drinking apply to them. In one study researchers found that 92% students did not believe themselves as binge drinkers even though 35% of them drank at amounts corresponding with the operational level of binge drinking (Lederman, Stewart, Laitman, Goodhart, & Powell, 2000). Thus, providing "accurate" information about dangers of excessive drinking to college students may back-fire, leading them to disbelieve, and/or reject the message.

While it has been established that message congruity with the recipients' cognitive and social environment are important aspects of message receptivity, how do their personality traits and factors such as message reliability moderate information processing?

*College students' personality traits, message reliability, and information processing:*

As has been mentioned earlier, attitude change through mediated messages depends on various moderating variables (Cartwright, 1949; Hovland, Lumsdaine, & Sheffield, 1949; Shills & Janowitz, 1948; et al.). Contemporary approaches to mass-mediated persuasion focus on attitudes, or people's predisposition to favorably or unfavorably evaluate a message, which in turn, predicts their exposure to a message and a consequent behavioral change (Petty, Priester, & Brinol, 2002).

According to McGuire (1985, 1989), there are five independent variables (input) that predict twelve dependent variables (output) that can be measured in order to predict message persuasion. According to him, the message source, message framing, recipients' traits and characteristics, the channel of communication, and context predict message exposure, attention, interest, comprehension, (knowledge) acquisition, attitude change, memory, retrieval, decision, action, reinforcement, and consolidation.

Considering that the steps in the output variables are independent of each other, and don't necessarily sequentially predict the next steps of the output variables (Petty, Priester, & Brinol, 2002), this study takes into consideration primarily message framing and recipients' personality traits in order to predict attitude change, within the context of Internet-mediated responsible drinking messages to college students. For the purview of the study, message framing and personality traits, as a covariate are hypothesized to



predict message acceptance, elaboration, and persuasion (the intentions towards attitude change).

While McGuire's (1985, 1989) model is helpful in determining some dependent variables, it tells us little about other factors that might induce attitude change, like message relevance and reliability. This limitation has been addressed by the cognitive response theory (Greenwald, 1968; Petty, Ostrom & Brock, 1981). According to this theory, the impact of variables on persuasion is dependent upon the degree to which individuals relate message ingredients to their existing information and attitudes. Where more favorable thoughts towards a message yield more persuasion and less favorable thoughts exercise less influence over persuasion towards an attitude change. However, the cognitive response theory provides these insights only when audience members are actively processing the information they receive. The elaboration likelihood model of persuasion (ELM) accounts for persuasion when recipients are not actively processing information.

According to the ELM, persuasion occurs at both times of high thinking and low thinking, but through two routes of persuasion (Petty & Cacioppo, 1981, 1986, Petty & Wegener, 1999). The "central route to persuasion involves effortful cognitive activity" (Petty, Priester, & Brinol, (2002), pp. 165), drawing on prior experience and close scrutiny of the message or issue involvement, which in turn, predicts favorable or unfavorable thoughts towards the persuasive message. A decision reached through this route after investing a lot of cognitive energy and weighing the information and arguments provided in the message predicts a long term and strong attitude formation.

However, a careful analysis of the message and attitude formation does not predict “the right” or “recommended” attitude change as aimed by the message. It could well be that the message reiterates the opposite belief of what it was meant to posit. The reason for this could be in keeping with the past discussion on people’s propensity to select information and interpret it in ways that are consistent with their existing attitudes and beliefs and to avoid information that is discrepant or inconsistent.

The peripheral route being opposite to the central route suggests that attitude change is not always a function of “effortful evaluation of the information presented” (Petty, Priester, & Brinol, 2002, pp. 168). Persuasion through this route is a function of impulsive, spontaneous decision making through simple cues. This route is selected when the recipients’ motivation to process information is low. This occurs when there is “an absence of issue-related thinking” (Lee & Bichard, 2006, p. 300). Thus, in order to create the motivation to elaborate upon information, issue involvement is important.

Again, the peripheral route does not imply that persuasion would occur according to the persuasive message’s desired path, but suggests a short term attitude change (Petty, Priester, & Brinol, 2002) that is either in keeping with the message recommendation or against it. This study does not seek to predict long term or short term persuasion among college students on being exposed to responsible drinking messages. It simply seeks to explore under what conditions of humor/fear responsible drinking messages would college students elaborate upon, accept, and perhaps consider an attitude change.

According to the dual decision-making approaches as proposed by ELM, it thus, suggests that responsible drinking messages that induce students to expend greater cognitive energy to process the information in the message, would also predict their

greater involvement with the problems associated with drinking on college campuses (issue involvement). As mentioned earlier, persuasion is mediated by the viewers' prior knowledge, dispositions, and personality traits.

*Risk-taking and information processing.* Prior research on substance use and personality traits particularly, has found a strong positive relationship between young people's risk-taking pre-dispositions and drug use, cigarette, and alcohol use (Zuckerman & Neeb 1980). Young people, especially in their late teens and early twenties have a high appetite for both sensation seeking and risk taking tendencies (Zuckerman, 1979; Ferguson, Valenti, & Melwani, 1991).

According to Zuckerman, et al.'s (1979) disinhibition scale (DIS) in particular is one conceptualization of risk-taking. Disinhibition is defined as young people deriving pleasure through activities such as partying, drinking, and experimental sexual activities. Further, disinhibition is known to peak in late teens and early 20s, and declines thereafter. People have varying levels of sensation-seeking (Zuckerman et al., 1964), which is exhibited through different types of risk-taking tendencies (Ferguson, et al, 1991) such as drinking, extreme sports, and so forth. These tendencies consequently interact with how the messages are framed and in turn, influence people's reactions to the message (Lee & Ferguson, 2002).

In a study by Schoenbachler and Whittler (1996), for instance, it was found that sensation seeking was an important moderating variable while predicting response to a threat communication focusing on drug use. They reported that adolescents who scored high on sensation-seeking found more counter arguments and had a stronger negative attitude towards the communication than low sensation-seekers and produced more

counter arguments towards the messages. Thereby, “response to threat communications may come from a repertoire of responses rather than from the communication itself” (p. 47).

It could therefore be argued that college students’ risk taking behavior (such as consuming high amounts of alcohol, drinking and driving, et al.), perceived benefits of drinking, and framing of responsible drinking messages, are some factors that would play an important role in predicting their acceptance or rejection of the message and a consequent persuasion (attitude change intention).

These assumptions are consistent with past literature stressing that in order for the message to effectively persuade the target audience towards an intended attitude change, it should seek to create an attitude change by keeping consistency with and recognizing the particular context of attitudes and predispositions. How could this be achieved in the case of fear and humorous Internet-mediated responsible drinking messages?

*Fear versus humor, direct versus indirect referencing, information processing, and attitude change:*

According to ELM, creating the motivation to think (elaborate) about a message by making it personally relevant to the recipient is one way to induce persuasion, as it creates a sense of issue involvement. It has been found that by framing messages according to people’s existing values and self-conceptions increases message processing by inducing personal relevance and issue involvement (Petty & Wegner, 1998; Petty, Wheeler, & Bizer, 2000). How can this be achieved in communicating responsible drinking practices to a college students?

In the past, the strategy of using fear and humor appeals, in health communication to induce attitude change and persuasion has been a common one. The effectiveness of using fear and humor appeals has been examined by many scholars with varying opinions. Scholars such as Hovland, Janis, and Kelley (1953) and Boster and Mongeau (1984), for example, predicted that fear arousal of a message enhances persuasion. Scholars such as Hale and Dillard (1994) on the other hand have reported that fear appeals are not always effective persuaders, especially for young people.

*Fear appeals.* Fear is defined as a negative emotion that is accompanied by a high level of arousal, induced by a threat that is perceived to be severe and personally relevant (Easterling & Leventhal, 1989). An often predicted outcome in fear appeal research is message acceptance, which is defined as a change in an attitude/behavioral intention (Witte, K. 1992). Studies suggest that an increase in fear is accompanied by increase in message acceptance (Giesen & Hendrick, 1974; Rogers, 1983). Fear leads to message cognitions through the evaluation of perceived threat, susceptibility and efficacy, which in turn, leads to message acceptance and a consequent persuasion (Leventhal, 1970, and Rogers, 1975, 1983).

According to the Extended Parallel Processing Model (EPPM) (Witte, 1992), threat perception initiates and motivates message processing, as the fear aroused leads to greater attention, thus making the message more involving through depictions of susceptibility (Witte, 1992). As suggested earlier, message involvement through cognition and relevance plays a significant role in persuasion (Johnson & Eagly, 1989; Petty & Cacioppo, 1986; Witte, 1992). Conversely, if threat perceptions of a message are low, people are not motivated to process the message, as the threat is perceived to be

either irrelevant or insignificant (Witte, 1992). Thus, there is no message acceptance. Further, according to Witte (1991) there is least amount of attitude, intention, and behavior change in a low threat message condition. Thus, according to EPPM, fear is an important factor in creating personal involvement and message persuasion.

In a study by Keller and Block (1996), the authors demonstrate how increasing direct-self references in messages can increase the persuasive impact of low fear messages. They manipulated the self-reference condition by directly targeting the reader, like “cigarette smoking is dangerous to your health” (p. 457). They manipulated the other-reference condition by reaching out to the readers by targeting people close to them, like “cigarette smoking is dangerous to the health of those close to you” (p. 458). According to them, this difference in referencing impacted elaboration of the message content and its recommended remedial solutions, which in turn, predicted attitude change (persuasion) among people.

They analyzed conditions under which messages that appeal to low or high amount of fear are effective. They found that messages that are too low on arousing fear associated with smoking among college students maybe ineffective as they induce low elaboration on the harmful consequences associated with the non-compliance of the recommended actions in the message. As a corollary, they also found that messages that are too high on arousing fear associated with smoking among college students maybe ineffective as they induce too much elaboration on the harmful consequences associated with the non-compliance of the recommended actions in the message.

As also explained in the EPPM, they suggested that the persuasive impact of fear-evoking messages is “assessed by the level of elaboration and agreement with the

advocated solution” (Keller & Block, 1996, pp. 448). This is also in keeping with the ELM that suggests enhancing personal relevance in a message as a means of increasing message elaboration and issue involvement, making it a better predictor of persuasion. Drawing from Janis and Feshbach (1953) and in keeping with previously stated literature on the persuasiveness of fear-appeals in predicting message elaboration, acceptance, and attitude change, the following hypotheses are suggested:

*H1: Direct-referenced fear-appeal responsible drinking messages would predict greater elaboration of the issue of responsible drinking among college students than indirect-referenced fear-appeal responsible drinking messages.*

*H2: Direct-referenced fear-appeal responsible drinking message would predict greater acceptance of responsible drinking messages among college students than indirect-referenced fear-appeal responsible drinking message.*

*H3: Direct-referenced fear-appeal responsible drinking messages would predict greater persuasion of responsible drinking attitudes among college students (e.g. intent to follow responsible drinking practices) than indirect-referenced fear-appeal responsible drinking messages.*

*“Indirect” fear appeals: Processing of fearful messages, mediated by risk-taking tendencies.* While it has been stated that fear appeals are effective persuaders, there is evidence that suggests that fear as a persuasive strategy does fail. This is, once again explained theoretically with the help of Witte's (1992) EPPM. EPPM attempts to explain when and why fear appeals work and fail. According to the model, fear in itself can be both, a barrier or a motivator to behavior or attitude change, depending upon how the message is framed.

While fear leads to an increase in the personal relevance of a threat, which in turn induces the motivation to do something about the threat, it could also act as a barrier. This occurs when people are so frightened that they cannot act and deny or defensively avoid a threat.

Thus, according to EPPM, there are two general paths that people use to evaluate fear appeals. One is when they are motivated to control the danger of the threat and the other is when they are motivated to control their fear about the threat. When people are motivated to control the danger, they consciously think about the fear appeal and think of ways to remove or lessen the threat. They carefully think about the recommended responses advocated in the persuasive message and adopt those as a means to control the danger.

Alternatively, when people are motivated to control their fear, they no longer think about the fear appeal or danger of the threat. Instead, they focus on how frightened they feel and attempt to get rid of their fear through denial ("It won't happen to me"), defensive avoidance ("this is just too scary, I'm not going to think about it"), or reactance ("they're trying to manipulate me, I'm going to ignore them"). Thus, EPPM suggests that messages should emphasize the threat in a way that audiences feel they can do something about it.

The idea of fear-appeals being rejected or received with defensive reactance has been frequently reported among sensation-seekers and risk-takers. Thus, as pointed out in the previous section, "responses to threat communications may come from a repertoire of responses rather than from the communication itself" (Schoenbachler & Whittler, 1996, pp. 47). Sensation-seeking has proved to be an important moderating variable in



predicting a response to threat communications (Schoenbachler & Whittler, 1996).

Further, it has also been mentioned that pre-dispositions such as sensation-seeking and risk taking tendencies interact with how messages are framed, which in turn influence people's reactions to the message (Lee & Fergusson, 2002).

According to Lee and Ferguson (2002) for instance, college students, particularly those who are smokers are likely to resist anti-tobacco messages that use realistic fear appeals as a strategy to induce attitude change. Even though, these messages though negative, are meant to create high levels of arousal (Witte & Allen, 2000), and are thereby meant to induce a high degree of personal relevance, which in turn, is believed to induce greater information processing among people (Hyman & Tansey, 1990).

However, it has been seen that risk-taking tendencies such as smoking interacts with the fear-appeals making them ineffective persuaders. This is in keeping with the premise that "each person evaluates the components of a message in relation to his or her prior experiences, culture, and personality characteristics" (Witte, 1992). This, and subsequent studies show how recipients' risk-taking tendencies mediate message processing and acceptance.

In Lee and Ferguson's (2002) study on effects of anti-tobacco advertisements using fear and vulgar humor among college students, it was found that though realistic fear advertisements created greater interest among high risk-takers, the advertisements' intention to induce an attitude change did not occur. College students did not intend to quit smoking. This study is in keeping with past literature on EPPM that suggests that when people are faced with a high fear appeal, they engage in "defensive maneuvers" (Keller & Block, 1996, pp. 449). These include mechanisms such as message avoidance,

selective attention, reducing the severity of the threat or discounting it, and denying its personal relevance (Eagle & Chaiken, 1993; Rogers, 1983; Leventhal, 1970; Witte, 1992; Witte & Allen, 2000).

*Indirect referencing in fear appeals.* One strategy that has been tested in the past to create an “optimal level” of threat perception to increase persuasion among high risk-taking recipients is the strategy of using an indirect approach to persuasion in fear-appeals. In a study conducted by Lee and Bichard (2006), it was found that when message content and information was related to someone else, it provoked an “indirect perception of relevance” (p. 302). They operationalized this indirectness by exposing high risk takers, who indulged in binge-drinking to gender inconsistent episodic messages and found that rebellious participants showed a higher intention to change their drinking behavior than those in the gender consistent condition.

In the gender consistent condition, high risk-takers “responded defensively” (p. 306) and exhibited lower intention to change their behavior. Thus, according to them, “it may be beneficial to use a more indirect approach when designing messages” (p. 306) for high risk-taking participants, thereby reducing chances of defensive mechanisms and rebelliousness.

In the previously stated study by Keller and Block (1996), a “balance” was suggested by using what they called elaboration enhancing (EE) interventions like increasing self-reference through imagery and/or language in low fear messages (referred to as “direct-reference”) to predict higher elaboration of the harmful consequences associated with the non-compliance of the recommended actions amongst smokers in low and high fear messages, and a consequent behavioral change.

Likewise, they found that by using, what they call elaboration suppression (ES) techniques like reducing self-reference through imagery and/or language, and referring to others in high fear messages (referred to as “indirect reference”), could better predict attitude change. This is in keeping with the EPPM literature as well as the literature on sensation-seeking that suggest the need for a strategy that lowers the “threat” perception of fear-appeal messages among the recipients in order to avoid such mechanisms as avoidance and denial.

Relating this strategy to the current context of the study, it could then be inferred that in fear-appeal responsible drinking messages, that seek to induce greater problem-elaboration through direct-reference in high risk-taking students (high on disinhibition), i.e. those students who indulge in heavy drinking and derive pleasure out of it, would predict lesser persuasion towards responsible drinking attitudes among college students. On the other hand, would indirect reference in fear-appeal responsible drinking messages predict greater problem-elaboration and persuasion towards responsible drinking attitudes among high risk-taking college students?

*H4: Indirect-referenced fear-appeal responsible drinking messages will predict greater message elaboration, acceptance, and attitude change among high disinhibitors than direct-referenced fear-appeal responsible drinking messages*

The proposed hypothesis is in keeping with prior research on substance use, personality traits like risk-taking, and message processing. Moderated by college students’ drinking habits, disinhibition tendencies, and attitude towards heavy drinking in general, as seen in Keller and Block’s (1996) and in Lee and Bichard’s (2006) study, indirect-referenced fear-appeal messages are better persuaders with this audience.

Keller and Block (1996) suggest a strategy of including either self or other-reference in fear messages in order to create direct and indirect referencing among the viewers. Lee and Bichard (2006) suggest it though the strategy of gender inconsistent or gender consistent messages. In this study, direct-referencing is induced in both fear-appeals and humor messages by using the pronoun “you”. Indirect-referencing is induced by third person pronouns like “s/he, him/her, they, one”, et al.

*Testing the strategy of using humor Vs fear-appeals.* Where using humor as a persuasive strategy is concerned, Mohanan (1994) suggested that using humor in PSAs and advertisements about issues such as anti-smoking and responsible drinking also creates arousal, but a positive and favorable feeling towards the message. This in turn, reduces the viewers’ defensiveness towards the intended outcomes. Positive affects further, lead to greater message receptivity (Janis, Kay, & Kirschner, 1965). This, also in turn leads to viewers’ greater intent to comply with the message (Grube & Wallack, 1994; Austin & Meili, 1994; Wyllie, Zhang, & Casswell, 1998).

Though humor is an effective strategy to get the viewers’ initial attention (Madden & Weinberger, 1984) and create a positive feeling towards the message by reducing chances of defensiveness (Mohanan, 1994), its effectiveness in harm reduction messages like promoting smoking prevention or rehabilitation has not been established (Lee & Ferguson, 2002). In keeping with past literature, where elaboration, as a result of referencing (direct or indirect) predicts message acceptance and persuasion, it would be worth investigating to what extent direct-reference or indirect references in humorous messages predict attitude change.

RQ1: Are direct-referenced or indirect-referenced humorous responsible drinking messages better predictors of elaboration, acceptance, and attitude change among college students?

RQ2: Are humorous or fear-appeal responsible drinking messages better predictors of elaboration, acceptance, and attitude change among college students?

RQ3: Of the 4 message conditions, which condition proved to be the most optimal strategy of message elaboration, acceptance, and attitude change?

## METHOD

An experiment involving a post-test only 2 (type of message: fear or humor) X 2 (type of referencing: direct or indirect) between-subjects experimental design was used to test the proposed hypotheses and research questions. The four variations of responsible drinking messages used were: (a) fear appeals using direct self reference through language and/or imagery; (b) fear appeals using no direct self reference through language and/or imagery; (c) humorous messages using direct self-reference; and (d) humorous messages using no direct self-reference. Each of these conditions had 4 images under them (Appendix B). Participants' disinhibition tendencies, particularly those related with drinking and seeking pleasure through excessive drinking and partying, and their self-reported drinking habits were included in the analysis.

### *Participants:*

One hundred and sixty two students participated. Of these, 51% of the participants were male (N = 84) and 44% were female (N = 73).

Participants' self-reported alcohol, smoking, and drug use habits was also collected. Eighty percent were non-smokers (N=132), 4% were smokers (N=7), and 13% (N=22) were social smokers. Only 9% reported to have consumed illegal drugs (N=15) other than marijuana and 8% reported to have used hallucinogens like LSD and Acid (N=13).

The table below sums up the percentage break-up of participants' behavior after consuming alcohol:

Table 1

% of participants (in the past 30 days) who were:	10+ Times	1-2 Times	Never
Nauseated	2% (N=3)	34% (N=57)	52% (N=85)
Hung-over	2% (N=3)	39% (N=64)	46% (N=76)
Hurt/injured	1% (N=2)	13% (N=21)	82% (N=135)
Sick/vomited	2% (N=3)	27% (N=45)	62% (N=103)
Forgot where they were/what they did	1% (N=2)	29% (N=48)	58% (N=96)
Involved in a fight	.6% (N=1)	13% (N=22)	78% (N=128)
Drove after drinking	1% (N=2)	11% (N=18)	83% (N=137)
Engaged in unplanned sex	1% (N=2)	12% (N=20)	80% (N=133)

*Apparatus:*

The stimulus consisted of 4 responsible drinking messages, under each of the 4 conditions: fear in/direct and humor in/direct. There were ultimately, four treatments in all: Fear “direct referenced”, fear “indirect referenced”, humor “direct-referenced”, and humor “indirect”. The messages were pre-tested among a group of undergraduate students and the stimulus was refined in order to arrive at in/direct fear and humorous responsible drinking messages.

The manipulation of the direct-referenced condition in both fear and humor messages was carried out by using second person pronouns like “you” and “your” (c.f. “It is in your hands”) (Keller & Block, 1996). The manipulation of the “indirect reference” in both fear and humor messages was carried out by either using no reference or using

third person pronouns like “him/her” and “one” (c.f. “If only she had been responsible”) to induce objective processing of information (Burnkrant & Unnava,1989), in order to avoid defensive mechanisms like avoidance and denial.

*Procedure:*

An online survey was developed and emailed to an introductory communication class of 300 undergraduate students in a large north western university. Students were offered 2.5 extra credits for participation. One hundred and sixty-two surveys were recorded and analyzed.

The online survey was designed in such a way that participants were randomly assigned to one of the four conditions. The first part of the survey asked questions about their disinhibition tendencies and drinking habits, which was developed by Fergusson et al. (1991) and was refined by Lee and Fergusson (2002) (attached in Appendix A).

The computer manipulation involved presenting participants with one of the four sets of responsible drinking messages (Appendix B): (a) direct-referenced fear-appeal responsible drinking messages (Condition 1); (b) direct-referenced humorous responsible drinking messages (Condition 2); (c) indirect-referenced fear-appeal responsible drinking messages (Condition 3); and (d) indirect-referenced humorous responsible drinking messages (Condition 4).

Each of the four messages under each condition was preceded by a “subject line” which the participants had to click on in order to view the message. These subject lines appeared in an Inbox like interface attempting to provide an impression of an email inbox. Each message was followed by a set of 25 words like relevant, frightening, persuasive, et al. that sought to get a sense of the participants’ evaluation of each of the



images. The words were presented in a Likert scale from 0-9, from “strongly agree” to “strongly disagree”. This procedure was repeated for each of the 4 messages.

After the students had evaluated each of the 4 images in a condition, as described above, they answered a set of questions that sought to assess their level of message acceptance, issue elaboration and involvement, and the intention towards attitude change. These were the three dependent variables of the study.

*Measures:*

Two independent variables were identified: the four kinds of messages (the stimulus) and participants’ risk-taking and disinhibition tendencies, which were assessed through questions about their drinking habits and 11 items of a disinhibition scale, adapted from Zuckerman et al.’s (1978), Form V. There were also 3 dependent variables, for which indexes were created to measure each of them. The dependent variables were: elaboration, message acceptance, and attitude change.

*Participants’ disinhibition tendencies:*

Data on students’ disinhibition tendencies was collected and analyzed. The questions were adapted from the one created by Fergusson et al (1991), and was refined by Lee and Fergusson (2002) (Appendix A). In keeping with the a fore mentioned literature on ELM and risk taking/DIS behavior, it has been hypothesized that students’ disinhibition tendencies would influence their message: elaboration, acceptance, and attitude change intention as a result of being exposed to the messages in the different conditions.

*Developing the disinhibition (DIS) scale:*

There were 11 items that sought to measure levels of disinhibition. Defined as the act of derive pleasure through activities such as partying, drinking, and experimental sexual activities Zuckerman's (1979), the items of the DIS scale were adapted from Zuckerman's Form V scale of sensation-seeking (Zuckerman, et al., 1978).

The items were factor analyzed using principle component analysis Varimax rotation for similarities to identify items that would better conceptualize the DIS scale. Six items under the scale were identified ( $\alpha = .85$ ). These were: "I like people who are partiers"; "I tend to drink more when others drink"; "I'm likely to do drugs when I party"; "I cannot have fun at a party unless I'm drinking"; "I like wild parties"; and "Having alcohol is the key to a really good party".

After this, the average score of the 6 items were computed into 1 "disinhibition scale". The scale was later categorized into "high disinhibition" and "low disinhibition" was created using a median split. Scores from 0-4 were labeled "low" (N=114, 70%) and scores from 5-9 were labeled "high" (N=41, 25%) on the disinhibition scale.

### *Dependent variables*

#### *Elaboration:*

The variable was operationalized as: (a) the likelihood of thinking about the message (cognitive energy expended), (b) thinking about the issues associated with drinking irresponsibly in general (issue involvement). There were 19 items in all, of which 9 items measured cognitive energy expended and 10 items measured issue involvement.

The rationale behind the sub-scales of the "elaboration" measure is that cognitive energy expended and thinking about an issue (issue involvement), determines the

motivation to process information and a consequent attitude change (Keller & Block, p. 449).

Items under each of the sub-scales were factor analyzed using principle component analysis Varimax rotation. This ensured categorizing sub-items that would better identify the sub-scale.

*Cognitive energy expended.* Seven items under cognitive energy expended were identified ( $\alpha = .84$ ). These were: “I was consciously trying to process the information presented in the messages”; “I did not consciously process the information presented in the messages”; “The messages made me think”; “I actively thought about the information presented to me in the messages”; “I critically evaluated the information in the messages”; “The messages didn’t really make me think about anything”; “I think the messages motivated me to think”. The means of the 7 items under “cognitive energy expended” were computed to create a “cognitive energy expended scale”.

*Issue involvement.* All 10 items under issue involvement were selected ( $\alpha = .92$ ). These were: “I actively thought about the issue of responsible drinking”; “I found myself consciously thinking about the problems associated with irresponsible drinking”; “The messages didn’t really make me think about drinking issues”; “These messages made me think about my drinking habits”; “These messages made me think about how college students drink sometimes”; “The messages made me think about the importance of staying in control when drinking”; “The messages made me think about safety issues in general when drinking”; “The messages made me think about the situations college students could get into because of drinking”; “The messages made me think about the

potential outcomes of drinking too much”; “The messages contained weak scenarios and arguments for drinking responsibly”.

The means of the 10 items under issue involvement were computed to create the “issue involvement scale”.

After this, a Pearson test of correlation was conducted between the 2 sub-scales: cognitive energy expended and issue involvement, to see if they were correlated to each other. There was a strong correlation between the 2 sub-scales  $r=.81, p<.001, N=143$ . The final scores of the items of the 2 sub-scale were computed to create an “elaboration scale”.

*Message acceptance:*

This variable was operationalized as: (a) liking, (b) relevance, (c) interest, (d) agreement, and (e) Intent to “click” on the message to read the messages. There were 23 items in all, of which 4 items measured liking, 5 items measured relevance, 4 items measured interest, 6 items measured agreement, and 4 items measured the intent to click and read the message.

The rationale of the sub-scales of the “message acceptance” measure is in keeping with Janis, Kay, and Kirschner’s, (1965) notion of positive feelings towards a message lead to greater message receptivity, which in turn leads to viewers’ greater intent to comply with the message (Grube & Wallack, 1994; Austin & Meili, 1994; Wyllie, Zhang, & Casswell, 1998). According to the cognitive response theory (Greenwald, 1968; Petty, Ostrom & Brock, 1981) persuasion is dependent upon the degree to which individuals relate message ingredients to their existing information and attitudes. Where more favorable thoughts towards a message yield more persuasion and less favorable

thoughts exercise less influence over persuasion towards attitude change. These factors are pre-cursors of accepting the message. Relevance is an important pre-cursor of persuasion, as people selectively attend to information that is personally relevant to them (Greenwald & Leavitt, 1984; Krugman, 1988; Pechmann & Stewart, 1988). Interest is a sub-set to test favorable and unfavorable attitude towards the message. Agreement “facilitates liking” (Eagly & Chaiken, 1993, pp. 314) and predicts likelihood of persuasion (Keller & Block, p. 448).

Items under each of the sub-scales were factor analyzed using principle component analysis Varimax rotation. This ensured identifying and categorizing sub-items that would better identify the item.

*Liking.* Four items under liking were identified ( $\alpha = .80$ ). These were: “I did not like the messages at all”; “I liked the messages very much”; “I enjoyed the messages very much”; “The messages were entertaining”. The means of these 4 items under linking were computed to create a “liking scale”.

*Intent to click and read the message.* Five items under intent to click and read the message were identified ( $\alpha = .79$ ). These were: “I am likely to forward the messages to my friends”; “If messages like these show up in my inbox (email), I am likely to click on them and read them”; “If messages like these show up in my inbox (email), I am likely to delete them”; “If messages like these show up in my inbox (email), I am likely to avoid them”. The means of these 5 items were computed to create an “intent to click and read the messages scale”.

*Interest.* Four items under interest were identified ( $\alpha = .70$ ). These were: “I found the messages arousing”; “The messages truly held my interest”; “The messages made for

interesting topics to talk about”; “The messages were very boring”. The means of these 4 items under interest were computed to create an “interest scale”.

*Relevance.* Five items under relevance were identified ( $\alpha = .74$ ). These were: “I was able to personally relate to the messages”; “The messages were relevant to my friends”; “The messages are relevant to young people like me”; “The messages talk about relevant issues related to college drinking”; and “The message made me think, this could happen to anyone, including me”. The means of these 5 items were computed to create a “relevance scale”.

*Agreement.* Five items under agreement were identified ( $\alpha = .73$ ). These were: “I agree with the main points of the messages”; “The messages were informative”; “I think messages such as these would be a good way to communicate responsible drinking practices to college students”; “I don’t believe these situations could happen to someone like me”; “These messages led me to think, these situations could happen to me”. The means of these 5 items were computed to create an “agreement scale”.

These 5 sub-scales were then factor analyzed using principle component analysis Varimax rotation in order to identify similarities. All items loaded onto 1 factor ( $\alpha = .85$ ). After this, the average score of the items of the 5 sub-scales were computed into a single “message acceptance scale”.

*Attitude change:*

The variable was operationalized as: (a) persuasiveness of the messages (b) the likelihood/ intent to follow message recommendations and take concrete steps to ensure responsible drinking practices (c) likelihood of networking with peers and friends to address the problem of drinking irresponsibly on campuses. There were 41 items in all, of

which, 19 items measured message persuasiveness, 12 items measured the likelihood/intent to follow message recommendations and take action, and 10 items measured the likelihood of networking with peers to address the problem of over consumption of alcohol on college campuses.

Items under each of the sub-scales were factor analyzed using principle component analysis Varimax rotation. This ensured identifying sub-items that would better identify the item.

*Intent to follow message recommendations and take action.* Six items were identified ( $\alpha = .79$ ). These were: “I intend to be more careful while driving after I drink”; “I intend to take steps to ensure that I drink responsibly”; “I am more likely to have a designated driver when I go out drinking”; “I intend to be more careful next time I go out drinking”; “I intend to avoid the situations presented in the messages”; “The messages made me think about the possible steps I could take to ensure that I drink responsibly”.

The means of the 6 items were computed to create the “intent to follow message recommendations and take action scale”

*Networking with peers to address the issue.* Five items were identified ( $\alpha = .82$ ). These were: “I will take steps to make sure that my friends drink responsibly next time we go out drinking”; “I plan to discuss the serious consequences of irresponsible drinking with my friends”; “I’d like to persuade my friends to think about the negative outcomes of drinking too much”; “I’d like to make sure that my friends are alright when we go out drinking”; “I am likely to talk about the messages with my friends”

The means of the 5 items were computed to create the “networking with peers to address the issue scale”

*Message persuasiveness.* Seven items were identified ( $\alpha = .88$ ). These were: “The messages were persuasive”; “The messages motivated me to be more aware of responsible drinking practices”; “I felt motivated to do something to avoid possible dangers associated with heavy drinking”; “The messages reminded me of the risks associated with heavy drinking”; “These messages made me think about scenarios when unwanted things could happen to people as a result of drinking too much”; “The messages made me think “prevention is better than cure”; “The messages made me worry about my safety when I drink”.

The means of the 7 items were computed to create the “message persuasiveness scale”. After this, the 3 sub-scales were factor analyzed using principle component analysis Varimax rotation in order to test if the 3 sub-scales would load onto one factor, in order to best identify the “attitude change” scale. All 3 sub-scales loaded onto one factor ( $\alpha = .89$ ). The final scores of the items of the 3 sub-scales were computed in order to create an “attitude change scale”.

*Message manipulation:*

In order to check the manipulation of the fear and humor messages, and the direct and indirect reference in the messages, 11 statements for each were incorporated. The scales of humor and fear messages were developed from the one used by Lee and Fergusson (2002). These items were factor analyzed, using principle component analysis Varimax rotation. This was done to better identify the sub-constructs of the 2 conditions and separate them.

*Fear scale:*



Six items for the fear scale emerged ( $\alpha = .77$ ). These were: “The messages scared me about the dangers of too much drinking”; “The messages made me sick in the stomach”; “I had a very strong negative emotional reaction to the messages”; “The messages made me afraid of drinking irresponsibly”; “The messages were not at all amusing”; “The messages were fearful”. The means of these 6 items were computed to create a “fear scale”.

*Humor scale:*

Five items for the humor scale emerged ( $\alpha = .87$ ). These were: “I found myself laughing when I saw the messages”; “One of the things I liked about the messages was how funny they were”; “The messages I saw were funny”; “I had a positive feeling after viewing the messages”; “I enjoyed the humor used in the messages”. The means of these 5 items were computed to create a “humor scale”.

*Manipulation check for fear and humor scales:*

In order to ensure if the manipulation was successful, independent sample T-tests were then conducted to test levels of humor and fear on selected humorous and fearful messages. The manipulation was done in order to ensure that humorous messages be perceived as being more humorous than the fear-appeal messages in the humor condition. A significant group differences were found,  $t(141) = -10.33, p < .01$ . Humorous messages,  $M = 4.46, SD = 1.94, n = 75$ , were perceived to be more humorous than fear-appeal messages,  $M = 1.54, SD = 1.53, n = 79$ .

Similarly, In order to ensure if the manipulation was successful, fear-appeal messages would be perceived as being more fearful than the humorous messages in the fear-appeal condition. Significant group differences were found,  $t(150) = 8.86, p < .01$ .

Fear-appeal messages,  $M= 4.9$ ,  $SD= 1.55$ ,  $n= 81$ , were perceived to be more fearful than humorous messages,  $M= 2.59$ ,  $SD= 1.35$ ,  $n= 71$ . Thus, the fear-humor manipulation was successful.

*In/direct scales:*

The 11 items for the direct and indirect condition were factor analyzed, using principle component analysis Varimax rotation. This was done to better identify the sub-constructs of the 2 conditions and separate them. Three items for the direct condition were identified. These were: I think the messages were talking “directly” to me; I think these messages are showing me how people like me behave; and I think these messages are designed to target someone like me ( $\alpha = .77$ ).

The same procedure was followed for the indirect condition and again 3 items could be identified. These were: I think these messages “talking” to me indirectly, I think these messages are trying to send me a message by giving me examples of others, and I noticed words like “they” “he” she in the messages ( $\alpha = .5$ ).

*Manipulation check for in/direct scales:*

In order to ensure if the manipulation was successful, independent sample T-tests were then conducted to test in/direct levels on selected direct and indirect-referenced messages. The manipulation was done in order to ensure that indirect-referenced messages be perceived as being more indirect than the direct-referenced messages in the indirect-referenced condition. Significant group differences were found,  $t(155) = -1.96$ ,  $p < .05$ . Indirect-referenced messages,  $M=4.7$ ,  $SD=1.8$ ,  $n= 75$  were perceived to be more indirect-referenced than direct-referenced messages,  $M=3.7$ ,  $SD=1.8$ ,  $n= 82$ , in the indirect-referenced condition.

Similarly, In order to ensure if the manipulation was successful, direct-referenced messages would be perceived as being more direct than the indirect-referenced messages in the direct-referenced condition. However, no significant group differences were found,  $t(154) = -1.19, p = .12$ . Direct-referenced messages,  $M = 3.3, SD = 2.2, n = 82$ , were not perceived to be significantly different from the indirect-referenced messages,  $M = 2.87, SD = 2.13, n = 74$ . Thus, while the indirect-reference manipulation was successful, the direct-referenced manipulation was unsuccessful.

## RESULTS

### *Hypotheses testing:*

H1 stated that direct-referenced fear-appeal responsible drinking messages would predict greater elaboration of the issue of responsible drinking among college students than indirect-referenced fear-appeal responsible drinking messages. An independent sample T-test was conducted among the 2 fear conditions: indirect and direct on the “elaboration scale”.

There were no significant differences of the fear-appeal message conditions on elaboration  $t(71)=-.75, p=.23$ . Thus, since direct-referenced fear-appeal responsible drinking messages,  $M=5.9, SD=1.6, n=36$  did not predict significantly lesser elaboration than indirect-referenced fear-appeal responsible drinking messages,  $M=5.6, SD=1.8, n=37$ , H1 was not supported.

H2 stated that direct-referenced fear-appeal responsible drinking message would predict greater acceptance of responsible drinking messages among college students than indirect-referenced fear-appeal responsible drinking message.

An independent sample T-test was conducted among the 2 fear conditions: indirect and direct on the “message acceptance scale”. There were no significant differences of the 2 fear-appeal message conditions on message acceptance  $t(71)=.24, p=.4$ . Thus, since direct-referenced fear-appeal responsible drinking messages,  $M=4.8, SD=1.4, n=38$ , did not predict significantly lesser message acceptance than indirect-referenced fear-appeal responsible drinking messages,  $M=4.7, SD=1.4, n=35$ , H2 was not supported.

H3 stated that direct-referenced fear-appeal responsible drinking message would predict greater persuasion of responsible drinking attitudes among college students (e.g. intent to follow responsible drinking practices) than indirect-referenced fear-appeal responsible drinking messages. Again, an independent sample T-test was conducted among the 2 fear conditions: indirect and direct on the “attitude change scale”.

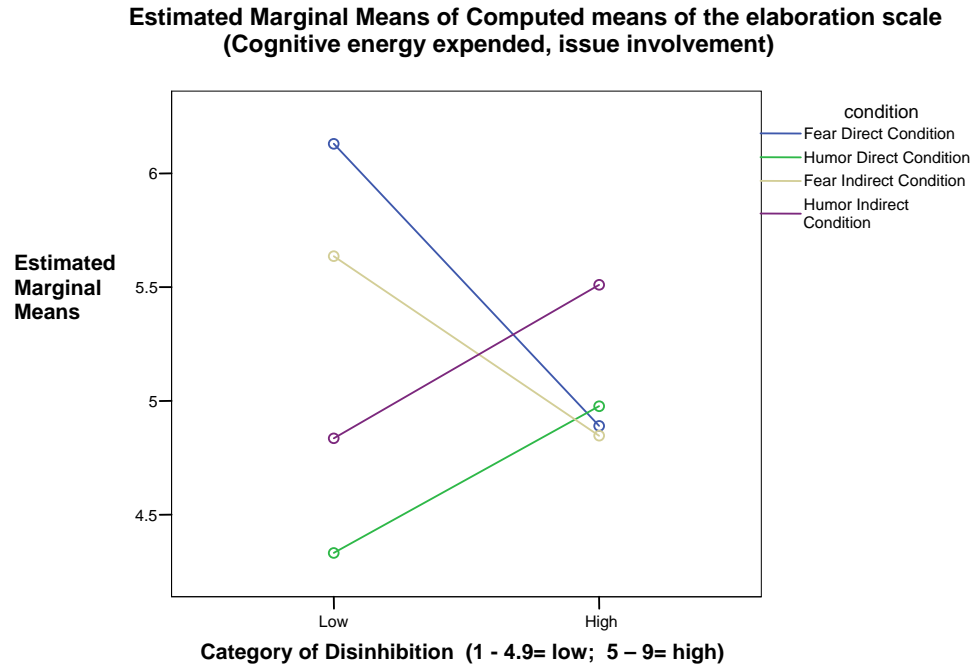
There were no significant differences of the fear-appeal message conditions on attitude change  $t(77)=.54, p=.30$ . Thus, since direct-referenced fear-appeal responsible drinking messages,  $M=5.9, SD=1.6, n=40$ , did not predict significantly lesser attitude change than indirect-referenced fear-appeal responsible drinking messages,  $M=5.5, SD=1.8, n=39$ , H3 was not supported.

H4 stated that indirect-referenced fear-appeal responsible drinking messages will predict greater message elaboration, acceptance, and attitude change among high disinhibitors than direct-referenced fear-appeal responsible drinking messages

A univariate analysis was conducted using the General Linier Model in order to test the interaction effect of the 4 message conditions and high and low disinhibitors on message elaboration, acceptance, and attitude change. Near significant interaction effects were noted between message conditions and high and low levels of disinhibition on message elaboration  $F(3, 129)=2.35, p=.09$  and message acceptance  $F(3, 129)=2.35, p=.076$ , but not in the case of attitude change  $F(3, 139)=.75, p=.52$ . The results of the further post-hoc tests for each are discussed below.

*Elaboration of direct and indirect referenced fear messages.* There was a near significant interaction effect between message conditions and levels of disinhibition (low

and high) on elaboration,  $F(3, 129)=2.35, p=.09$ . Graphically, the interaction effect is as follows:



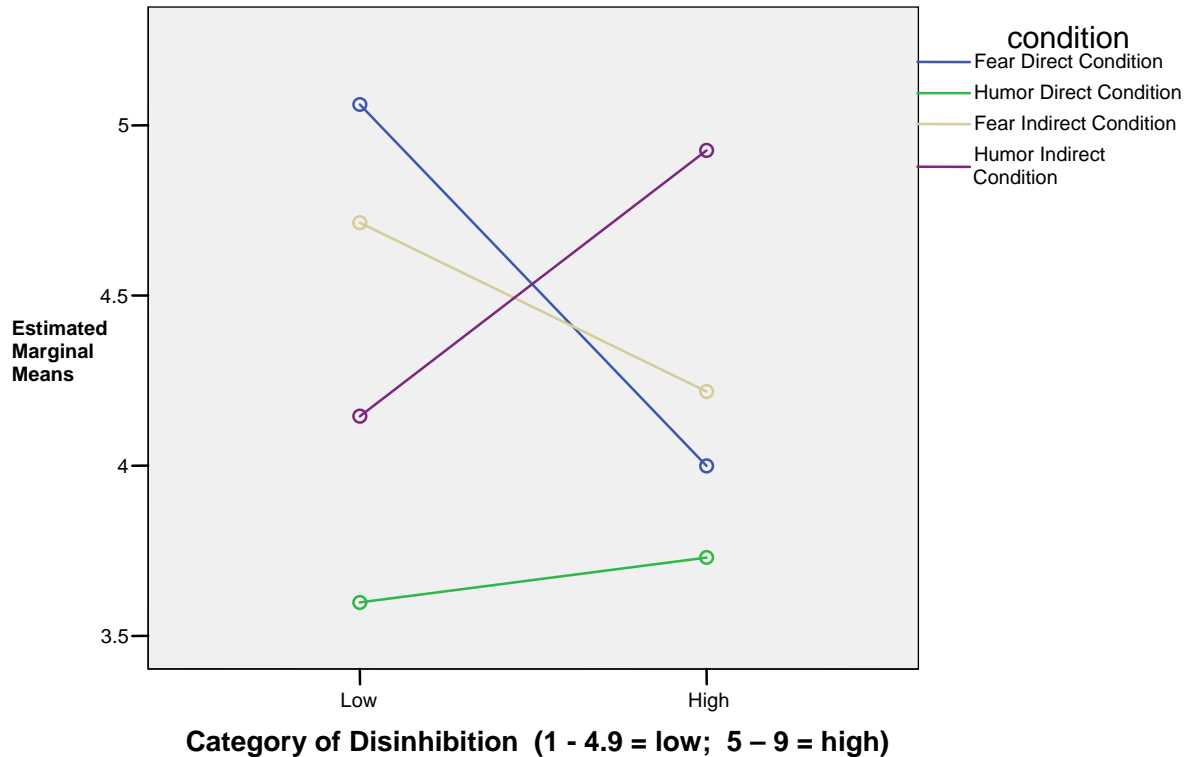
In order to further analyze the interaction effects of low and high disinhibitors and the 4 message conditions on message elaboration, a one-way ANOVA and post hoc analysis were conducted.

In the case of low disinhibitors, significant differences were noted among the 4 message conditions on message elaboration,  $F(3, 101)=6.1, p<.05$ . The post hoc results showed that direct-referenced fear messages,  $M=6.13, SD=1.6, n=28$  and indirect-referenced fear messages,  $M=5.64, SD=1.75, n=30$  predicted greater elaboration than direct-referenced humor messages,  $M=4.3, SD=1.88, n=27$  and indirect referenced humor messages,  $M=4.84, SD=1.34, n=20, p<.05$ .

In the case of high disinhibitors, no significant differences were noted among the 4 message conditions on message elaboration,  $F(3, 29)=.38, p=.76$ .

*Acceptance of direct and indirect referenced fear messages.* There was a near significant interaction effect of the message conditions and levels of disinhibition (low and high) on message acceptance,  $F(3, 129)=2.35, p=.076$ . Graphically, the interaction effect is as follows:

**Estimated Marginal Means of Computed means of the Acceptance scale (Liking, intent to click & read, interest, relevance, agreement)**



In order to further analyze the interaction effects of low and high disinhibitors and the 4 message conditions on message acceptance, a one-way ANOVA and post hoc analysis was conducted.

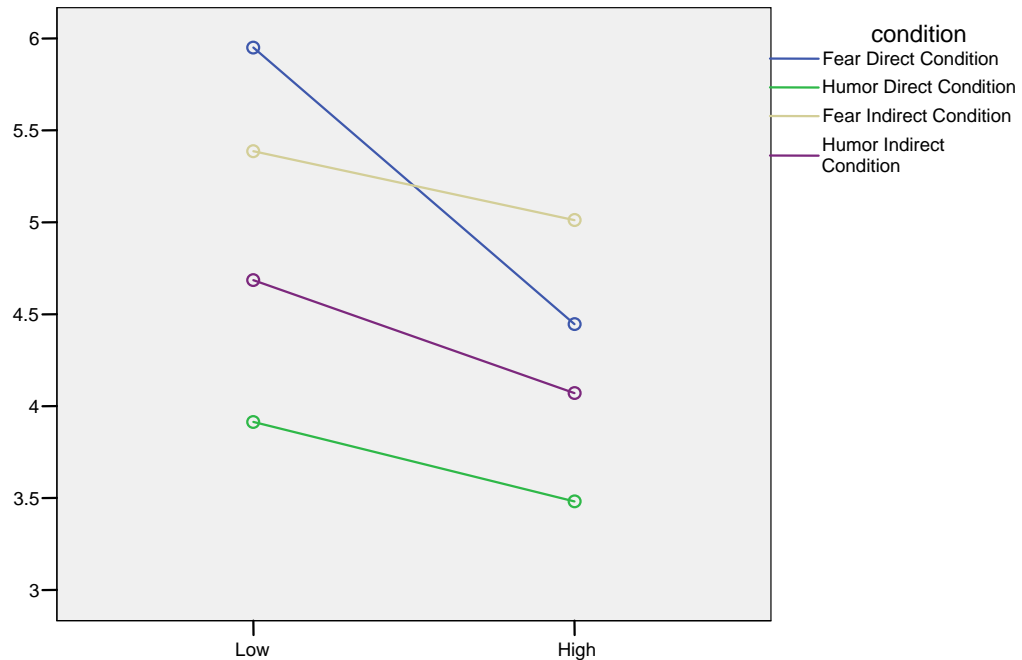
In the case of low disinhibitors, significant differences were noted among both the fear and humor condition message on message elaboration,  $F(3, 97)=6.15, p<.05$ . The post hoc analysis showed that direct-referenced fear messages,  $M=5.1, SD=1.3, n=27$  and indirect-referenced fear messages,  $M=4.7, SD=1.3, n=29$  predicted greater message acceptance than direct-referenced humor messages,  $M=3.6, SD=1.4, n=26$  and indirect referenced humor messages,  $M=4.15, SD=1.3, n=19$ , and  $p<.05$ .

In the case of high disinhibitors, near significant differences were noted of the 4 message conditions on message acceptance,  $F(3, 32)=1.12, p=.36$ . On conducting a post hoc test, it was found that indirect-referenced humor messages,  $M=4.93, SD=1.7, n=11$ , predicted greater message acceptance than direct-referenced humor messages,  $M=3.7, SD=1.2, n=9$ , and  $p=.1$ .

*Attitude change predicted by of direct and indirect referenced fear messages.* No significant interaction effects were found among message condition and high and low disinhibition on attitude change,  $F(3, 139)=.75, p=.52$ . Graphically, the interaction effect is as follows:



**Estimated Marginal Means of computed means of Attitude change  
(Networking with peers, persuasiveness, intent to follow message  
recommendations)**



**Category of Disinhibition (1 - 4.9 = low; 5 - 9 = high)**

However, the main effects found by message conditions on attitude change will be discussed as part of RQ3.

Thus, H4 was not supported, as indirect-referenced fear appeal messages did not seem to predict significant message elaboration, acceptance, and attitude change among high disinhibitors.

*Answering research questions:*

RQ1 stated: Are direct-referenced humorous responsible drinking messages or those using indirect reference strategies better predictors of elaboration, acceptance, and attitude change among college students?

An independent sample T-test was conducted among humor indirect and humor direct condition on elaboration, acceptance, and attitude change. Significant differences

were noted in the case of acceptance,  $t(66) = -1.8$ ,  $p < .05$ , and attitude change,  $t(70) = -1.8$ ,  $p < .05$ , and near significant differences in the case of elaboration  $t(68) = -1.4$ ,  $p = .09$  and the 2 humor conditions, where indirect-referenced humor messages predicted greater elaboration, acceptance, and attitude change than direct-referenced humor messages. The results are reported as follows:

Indirect-referenced humor messages,  $M = 4.29$ ,  $SD = 1.55$ ,  $n = 32$  predicted greater acceptance than direct referenced humor messages,  $M = 3.67$ ,  $SD = 1.34$ ,  $n = 36$ . Indirect-referenced humor messages,  $M = 4.5$ ,  $SD = 1.3$ ,  $n = 32$  also predicted greater attitude change than direct-referenced humor messages,  $M = 3.85$ ,  $SD = 1.7$ ,  $n = 40$ . Indirect-referenced humor messages,  $M = 5.04$ ,  $SD = 1.4$ ,  $n = 33$  also predicted greater elaboration than direct-referenced humor messages,  $M = 4.51$ ,  $SD = 1.7$ ,  $n = 37$ .

RQ2 stated: Are humorous or fear-appeal responsible drinking messages better predictors of responsible drinking attitudes among college students?

An independent sample T-test was conducted among humorous and fear-appeal responsible drinking messages on elaboration, acceptance, and attitude change. Significant differences were noticed, where fear-appeal messages seemed to be better predictors of elaboration  $t(141) = 3.4$ ,  $p < .001$ , acceptance  $t(139) = 3.1$ ,  $p = .001$ , and attitude change  $t(149) = 4.79$ ,  $p < .001$ , than humorous messages.

Thus, fear-appeal messages,  $M = 5.7$ ,  $SD = 1.7$ ,  $n = 73$ , were better predictors of elaboration than humorous messages,  $M = 4.8$ ,  $SD = 1.6$ ,  $n = 70$ . Fear-appeal messages also predicted greater message acceptance,  $M = 4.7$ ,  $SD = 1.4$ ,  $n = 73$  than humor messages,  $M = 3.9$ ,  $SD = 1.5$ ,  $n = 68$ . Fear-appeal messages,  $M = 5.4$ ,  $SD = 1.7$ ,  $n = 79$  predicted greater attitude change than humor messages,  $M = 4.1$ ,  $SD = 1.6$ ,  $n = 72$ .

RQ3 stated: Of the 4 message conditions, which condition proved to be the best strategy of message elaboration, acceptance, and attitude change?

Given that a near significant interaction effect was reported in H4, where high and low disinhibition levels and message conditions interacted with elaboration and acceptance, this research question will be answered in keeping with the strategies that would work best for high and low disinhibitors in the case of elaboration and message acceptance.

In the case of elaboration among low disinhibitors, it was found, and has been reported in H4 that, direct-referenced fear appeals,  $M=6.13$ ,  $SD=1.6$ ,  $n=28$ , predicted the greatest elaboration among this audience. On the other hand, direct-referenced humor messages,  $M=4.3$ ,  $SD=1.88$ ,  $n=27$  predicted the least amount of elaboration. The same results were found in the case of message acceptance, where direct-referenced fear appeals,  $M=5.1$ ,  $SD=1.3$ ,  $n=27$  predicted the greatest acceptance among low disinhibitors and direct-referenced humor messages,  $M=3.6$ ,  $SD=1.4$ ,  $n=26$ , predicted the least amount of message acceptance.

In the case of high disinhibitors, near significant results were found among in/direct referenced humor messages on message acceptance. It was found that indirect-referenced humor messages,  $M=4.93$ ,  $SD=1.7$ ,  $n=11$ , predicted greater message acceptance than direct-referenced humor messages,  $M=3.7$ ,  $SD=1.2$ ,  $n=9$ , and  $p=.1$ . In the case of high disinhibitors, no significant differences were noted between the 4 message conditions on message elaboration,  $F(3, 29)=.38$ ,  $p=.76$ .

In the case of attitude change, as stated in H4, no interaction effects were found among message condition and low/high disinhibitors. However, the main effects between

the conditions and attitude change were found,  $F(3, 97)=6.15, p<.05$ . Significant differences were found between both the fear and humor conditions, where direct-referenced fear messages,  $M=5.1, SD=1.3, n=27$ , and indirect-referenced fear messages,  $M=4.7, SD=1.3, n=29$ , predicted greater attitude change than direct-referenced humor messages,  $M=3.6, SD=1.4, n=26$ , and indirect referenced humor messages,  $M=4.15, SD=1.3, n=19$ . The main effect suggests that direct-referenced fear messages are most effective in predicting attitude change and direct-referenced humor messages are the least effective predictors of attitude change.

A post hoc analysis was also conducted in order to arrive at general predictions of the effects of message conditions on message elaboration, acceptance, and attitude change.

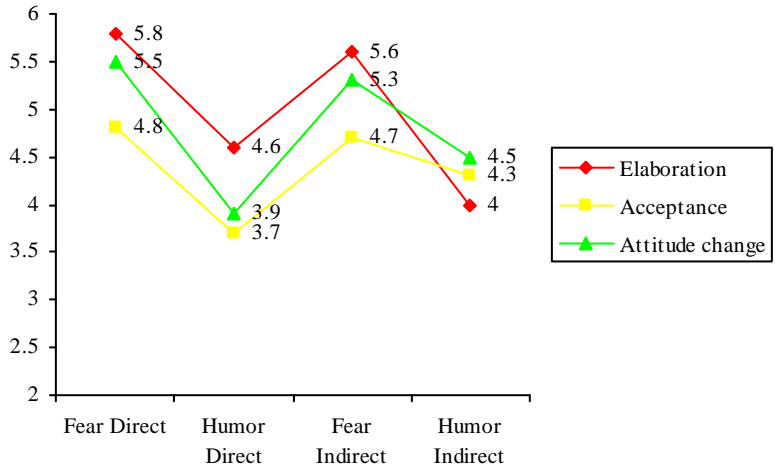
Significant differences were noticed in the case of “elaboration”  $F(3, 120) =4.26, p<.005$ , where direct-referenced fear messages,  $M=5.78, SD=1.6, n=33$ , were better predictors of message elaboration than direct-referenced humor messages,  $M=4.4, SD=1.7, n=33$ .

Significant differences were noticed in the case of “acceptance”  $F(3, 120) =4.62, p<.005$ , where direct-referenced fear messages,  $M=4.9, SD=1.3, n=33$ , and indirect-referenced fear messages,  $M=4.6, SD=1.3, n=32$ , were better predictors of message acceptance than direct-referenced humor messages,  $M=3.7, SD=1.33, n=33$ .

Significant differences were also noticed in the case of “attitude change”,  $F(3, 120) =6.51, p<.001$ , where direct-referenced fear messages,  $M=5.5, SD=1.6, n=33$  and indirect-referenced fear messages,  $M=5.2, SD=1.7, n=32$  were better predictors of

attitude change than direct-referenced humor messages,  $M=3.9$ ,  $SD=1.7$ ,  $n=33$  and indirect-referenced humor messages,  $M=4.4$ ,  $SD=1.4$ ,  $n=26$ .

The graph below is a summary of all the means of the effect of message conditions in predicting elaboration, acceptance, and attitude change:



**Elaboration:** Significant differences (at  $p < .05$ ) between direct-referenced fear messages & direct-referenced humor messages. **Acceptance:** Significant differences (at  $p < .05$ ) between direct-referenced fear messages & direct-referenced humor messages; Between indirect-referenced fear messages & direct-referenced humor messages. **Attitude change:** Significant differences (at  $p < .05$ ) between indirect-referenced fear messages & direct-referenced humor messages; Between direct-referenced fear messages & indirect-referenced humor messages.

## DISCUSSION

This study attempted to analyze what kinds of Internet-mediated responsible drinking messages are likely to predict message elaboration, acceptance, and an attitude change among college students. Two strategies were tested, namely using fear and humor appeal messages, and within those messages direct and indirect referencing as a means of predicting message elaboration, acceptance, and attitude change was tested. Further, it was hypothesized that college students' risk-taking tendencies, particularly disinhibition tendencies would influence their message elaboration, acceptance, and attitude change.

Through a brief discussion of the ELM literature it was established that persuasion is a function of issue involvement through personal relevance and elaboration. The EPPM literature further suggested that fear is one strategy of creating arousal and a sense of personal relevance through perceived threat, which in turn predicts acceptance. In keeping with Keller and Block's (1996) study that suggested that direct-referencing in fear messages is one way of predicting persuasion, the first 3 hypotheses of the study suggested that direct-referenced fear appeal responsible drinking messages would predict greater elaboration, acceptance, and attitude change than indirect-referenced fear appeal responsible drinking messages.

By further reviewing the EPPM and risk-taking literature, it was established that fear as a strategy may not be an optimal one especially for a high risk-taking audience. For the purview of this study, risk-taking was operationalized in terms of high and low disinhibition, which is the level of pleasure sought by the participants through activities such as excessive drinking and partying. It was also hypothesized that for high disinhibitors indirect-referenced fear appeal responsible drinking messages would predict

greater elaboration, acceptance, and attitude change. This was in keeping with previously stated risk-taking literature that suggested, that for this audience in particular, perhaps creating an indirect perception of relevance may be a plausible strategy of minimizing possible defensive reactions towards the given messages and potentially predicting attitude change (Lee & Bichard, 2006).

On testing the 4 a fore mentioned hypotheses of the study, it was found that the hypotheses were not supported. That is, direct-referenced fear appeal responsible drinking messages did not predict greater elaboration, acceptance, and attitude change in general; and indirect-referenced fear-appeal responsible drinking messages did not predict the 3 dependent variables among high disinhibitors. There could be various plausible explanations for this.

As suggested by the fear literature, high fear messages are said to induce different threat control mechanisms among the viewers like denial and avoidance. These occur as viewers become defensive as a result of being exposed to high fear messages. The fear-appeal responsible drinking messages in this study were not perceived as being very high fear by the participants,  $M=3.7$ ,  $SD=1.8$ ,  $N=152$ . As a result, the messages perhaps did not create any defensive avoidance among the participants in general and even among high disinhibitors. Thus, a direct-referenced fear-appeal strategy that is further said to increase defensiveness, in general, and especially among high disinhibitors, perhaps did not occur, as the messages were not perceived as high fear, and the participants perhaps did not reject the message, and in turn did indeed elaborate and accept it, rendering the hypotheses unsupported.

Another plausible explanation could be that the participants did not perceive the difference between the direct and indirect-referencing in the messages. The manipulation check of the direct-referenced messages was not successful, as participants did not perceive direct-referenced messages to be more direct than the indirect messages in the direct-referenced message condition. There could be further, 2 plausible explanations for this.

For one, the low reliability score ( $\alpha = .5$ ) of the indirect referenced messages could be a confounding factor. Also, the fact that most participants were low disinhibitors, probably led them to think that the “direct-referenced” messages were not targeted towards them. They perhaps did not relate the messages to themselves, given that they probably would never land in a situation as depicted in the messages as a result of excessive drinking (as they don’t indulge in it), thus, rendering the manipulation of the in/direct-referenced messages unsuccessful as a result of lack of direct experience and involvement with the messages. A future study is therefore, suggested in order to test the above mentioned hypotheses, using a different in/direct referencing strategy.

The study also sought to further investigate how participants reacted to humor and fear as persuasive strategies, given that there is still ambiguity about the role of fear and greater ambiguity about the effectiveness of humor in communicating health messages to young people. There were also 3 research questions that sought to explore more specifically the humor strategy, a comparison of fear versus humor strategy, and lastly, which of the 4 message conditions would perhaps be the most optimal predictor of the 3 dependent variable.



Regardless of the a fore mentioned confounding factors related to the in/direct manipulation, the results of the study, nonetheless indeed suggested that different message strategies predicted different outcomes, moderated by the participants' disinhibition tendencies. For low disinhibitors it was found that fear messages predicted greater message elaboration, acceptance, and attitude change than humor messages. The results also suggested that for this audience, direct-referenced fear messages predicted greatest elaboration, acceptance, and attitude change and direct-referenced humor messages predicted the least.

Also, for high disinhibitors, it was found that humor as a strategy could perhaps predict message acceptance. Specifically, it was found that indirect-referenced humor messages predicted greater message acceptance than direct-referenced humor messages for this audience. This finding is of particular interest, given that Lee and Fergusson (2002) speculated about the effectiveness of humorous messages in communicating harm reduction messages to this audience (p. 956). The finding suggests a direction whereby, humor as a strategy perhaps seems like an effective way in predicting message acceptance among this audience.

Given that the cognitive response theory (Greenwald, 1968; Petty, Ostrom & Brock, 1981; Janis, Kay, & Kirscher, 1965) and the ELM literature (Petty & Cacioppo, 1981, 1986, Petty & Wegener, 1999) suggest, that message acceptance through personal relevance and favorable thoughts (like agreement and interest) predict greater intention to follow message recommendations, lends this researcher to believe that this audience may possibly consider following message recommendations as a result of being exposed to indirect-referenced humor messages. This assumption nonetheless, begs further inquiry,

given that this was only near significant for the high disinhibitors and that attitude change was not predicted as a result of indirect-referenced humor messages.

It was also found that an indirect-referenced approach within humorous messages could perhaps be more effective than direct-referenced humor messages. This study thus, also adds to prior literature that stresses the importance of accounting for audience's prior dispositions like risk-taking, in order to predict outcomes of persuasion (e.g. Witte, 1992; Schoenbachler & Whittler, 1996; Keller & Block, 1996; Lee & Fergusson, 2002; et al). However, given the low numbers of participants who scored high on disinhibition, the findings for high disinhibitors should be empirically tested in the future with greater numbers of high disinhibitors in order to arrive at better generalizable results.

In terms of fear and humorous messages, in general, participants found fear-appeals creating greater elaboration, acceptance, and attitude change among them. This finding adds to previously stated fear literature (c.f. Witte, 1992; EPPM, et al.), that suggests the effectiveness of a low fear message as creating the motivation to process information as it enhances personal relevance and does not create any threat control mechanisms through defensive avoidance, denial, and so forth.

The above findings provided particularly interesting empirical insights and directions towards the effectiveness of humor appeals in health communication. Given that it is documented that though humor is an effective strategy to get the viewers' initial attention (Madden & Weinberger, 1984) and creates a positive feeling towards the message by reducing chances of defensiveness (Mohan, 1994), its effectiveness in harm reduction messages like promoting smoking prevention or rehabilitation has not been established (Lee & Ferguson, 2002). Despite the unsuccessful manipulation check

of the in/direct referenced messages, the study does indeed provide pointers suggesting that in order for a humor-appeal to be effective, the strategy should be to perhaps employ an indirect approach.

This finding therefore, provides useful insights for health communication practitioners and advertisers into what humor treatment could perhaps work effectively to predict the 3 outcome variables of elaboration, acceptance, and attitude change when using humor as a strategy is concerned. However, the idea that perhaps creating an indirect perception of relevance is the way ahead when using humor messages, should be further tested with a different strategy of indirect-referencing for greater generalizability. This is in keeping with the fact that the current strategy of using second person pronouns (c.f. you) and third person pronouns (e.g. s/he) in this study did not produce a wholly successful manipulation check between in/direct referenced messages.

Thus, the study also begs further inquiry of employing and testing different in/direct referencing strategies in order to arrive at more parsimonious generalizable findings. The different referencing strategies, like gender in/consistent (Lee & Bichard, 2006), “self” and “others close to the self” (Keller & Block, 1996), and so forth should also be tested with various audiences like light, moderate, and heavy drinkers, risk-takers, and adolescents, et al. in order to arrive at more concrete inferences of what manipulations may prove to be most effective with what audiences.

The study had a few additional limitations. As mentioned earlier, for one, there were very few high disinhibitors to provide strong generalizable predictions of how this audience may react to the 4 kinds of messages in order to predict elaboration, acceptance, and attitude change. A future study is suggested using a larger number of high

disinhibitors. A future study is also suggested, where instead of using a “disinhibition” scale in order to predict elaboration, acceptance, and attitude change, as done in this study, those students be selected who reported to have actually indulged in risky behavior after consuming alcohol. This would perhaps ensure a more direct correlation (as a result of their direct experiences) of the dependent variables among those who have actually indulged in risky behavior after drinking.

Also, given that the messages tested were only print images, it would be worth understanding what effect message technologies like flash images, inbuilt message interactivity could have in predicting persuasion, especially in an Internet-mediated scenario.

There are also some additional aspects related to Internet communication. These factors include, but are not limited to issues such as what messages would be clicked and forwarded. A future study is recommended that seeks to specifically explore pertinent issues such as those involved in the “first steps” in predicting message acceptance. For instance, whose messages are college students most likely to “click” on? Thus, future research should concern itself with issues like source of the message, the person sending the message, and so forth in order to better predict message acceptance and rejection, which is a critical first step especially in an Internet-mediated scenario.

Another limitation of the study is that the survey was online and was emailed to the participants. While it provided them a naturalistic setting to complete the survey in a comfortable environment of their choice, there was, however, less control as observed in a lab setting. There are various factors such as participants’ veracity, the environment of the place where they survey was being attempted, and even what time of the day the

survey was being attempted, that could potentially affect the overall outcome of the study. The above mentioned future studies should therefore, be carried out in a more controlled environment, where results can be then compared with those of this study.

## CONCLUSION

This study contributes to past literature that suggests the importance of using fear appeals in enhancing message persuasion among young people. It also provides potential pointers that could be further refined to predict the use and effectiveness of humor appeals in communicating harm reduction messages such as responsible drinking messages to 2 kinds of audiences. It provided insights into how low and high disinhibitors react to fear and humor messages and how these messages predict elaboration, acceptance, and attitude change among them differently.

From an industry stand point, such efforts that stress the importance of tailoring health messages to different audiences according to their risk-taking and other environmental and social predispositions could provide more effective strategies and practices in the future in order to promote healthy lifestyles among young people. Further, the study provided empirical evidence of the potential impact the strategy of in/direct referencing in fear and humorous messages could have in predicting the 3 important variables: elaboration, acceptance, and attitude change. These outcomes are closely related, and prove to be important precedents of persuasion.

More importantly, the study has provided direction towards the role played by humor messages on these afore mentioned outcomes. Continued scientific inquiry is suggested in this vein to further refine and generalize these findings. Especially given that there is still ambiguity about the role played by fear and greater ambiguity about the use of humor as a strategy in health communication, these findings should be further tested in order to create parsimonious theoretical frameworks and explanations for how humor and

fear-appeal messages are processed, and what outcome variables are predict under what circumstances for what kinds of audiences.

Such empirical explanations would prove to be extremely helpful for health practitioners and social marketers in effectively targeting their requisite audiences with the “right” kind of message in order to achieve their stated goal. Given that there are numerous moderating factors that influence persuasion for different kinds of audiences even among those who may seem like a fairly homogenous target segment, like college students. Thus, communicating health messages is a highly complex process and there isn’t a single strategy that can be considered a panacea. Therefore, scientific inquiry in this vein should continue in the future.

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## APPENDIX A

### Lifestyle survey

Instructions: The next set of statements asks how much you agree on each statement. If you strongly agree with a statement you would choose an 8 or a 9. If your reactions were neutral or ambivalent, you might choose a 4 or a 5, while if you strongly disagree you might choose a 0 or 1.

STRONGLY DISAGREE	STRONGLY AGREE	YOUR ANSWER
0   1   2   3   4   5	6   7   8   9	
1.	I enjoy doing things that others find dangerous.	
2.	I like people who are partiers.	
3.	I like driving fast.	
4.	I like to be the first to try new things among my friends.	
5.	I do not like to be told what to do.	
6.	I like to see others going against authority.	
7.	Life without danger would be too dull for me.	
8.	I tend to drink more when others drink.	
9.	I'm likely to do drugs when I party.	
10.	I don't like authority.	
11.	It pleases me to see others breaking rules.	
12.	I believe rules are meant to be broken.	
13.	I sometimes like to do things that are frightening.	
14.	I cannot have fun at a party unless I'm drinking.	
15.	I don't like people who tell me what to do.	
16.	I like wild parties.	
17.	I often get into a jam because I do things without thinking.	
18.	I am rebellious.	
19.	Having alcohol is the key to a really good party.	
20.	I often do things spontaneously.	
21.	I think it's exciting to break some laws just to see if you can get away with it.	
22.	I do or would enjoy the sensation of skiing very fast down a high mountain slope.	
23.	I enjoy or would enjoy scuba diving.	
24.	I would love to have new and exciting experiences even if they are illegal.	
25.	I have had or would like to have cyber sex with different	



people.

26. I generally do and say things without stopping to think.

27. I do drink and drive occasionally

28. Someone drunk has driven me after a party

### Things I Sometimes Like to Do

Again, your answers are confidential, so please answer each question as honestly as possible.

1. In the past month, how many days have you been drunk? (Please write in answer)

\_\_\_\_\_

2. Have you ever used any other illegal drugs other than marijuana in the past month?

Yes No

3. Have you ever used hallucinogens? (LSD, Acid, Mushrooms, etc.)? (Circle your answer)

Yes No

4. Do you currently smoke? (Circle in answer)

Yes No

5. Are you a \_\_\_\_\_? (Circle one answer)

Non-smoker Smoker Social smokers (who only smoke in special occasions)

6. Do you currently drink? (Circle in answer)

Yes No

7. Are you a social drinker or drink regularly? (Circle in answer)

Social drinker Drink regularly

### Your Alcohol Consumption

Consider “a drink” to be a 12 oz. can of beer, an 8 oz. glass of wine, a wine cooler, a 1 oz. shot of hard liquor (like scotch, gin, or vodka) or a single-shot cocktail, when answering the questions below:

1. When you drink, how many drinks do you normally \_\_\_\_\_ I don't drink  
have in one sitting (on average)?

2. How many times a week do you drink (on average)? \_\_\_\_\_ I don't drink

3. How many drinks do you think you can handle at \_\_\_\_\_ I don't drink  
a party without feeling nauseated?

4. How many times did the following things happen to you while you were drinking alcohol or because of your alcohol use (within the last month)?

	NEVER	1-2 TIMES	3-5 TIMES	6-9 TIMES	10+ TIMES
Attended a party where alcohol was served					
Became nauseated					
Had a hangover					
Got hurt or injured					
Sick (or vomited) from drinking					
Forgot where you were or what you did					
Were involved in an argument and/or fight					
Drove after drinking alcohol					
Engaged in unplanned sex					

## APPENDIX B

Condition 1: Fear direct responsible drinking messages

Subject line: "This could be you"



**Not everyone who drinks and drives dies.**

*Put yourself in Jacqueline Saburido's shoes. A 20 year old, whose car rammed into a truck. Three years later, at 23, imagine yourself still trying to piece your life together.*

**Do the right thing for yourself!**  
**Drink responsibly, or else your future stares at you in the face.**

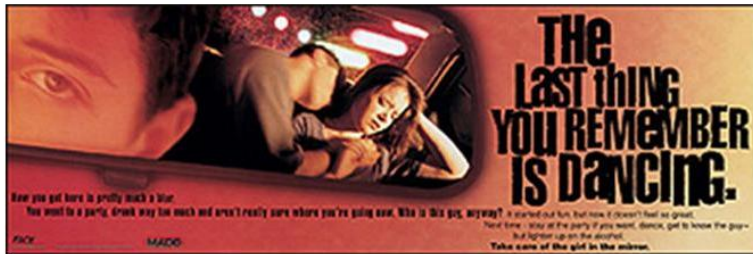
Subject line: "Drinking and driving is dangerous for you"



There were 16,694 alcohol-related fatalities in 2004 –  
 Equal to a fully loaded Boeing 747 crashing, and leaving no survivors,  
 every nine days, all year long.

**You could be in it.  
 So, drink responsibly! It's in your hands.**

Subject line: “But the last thing you remember is, dancing”



**Imagine going through the unpleasant experience  
 of an abortion or living the life of a rape victim for the rest of your life. . .**

**You could be a victim of sexual assault and rape if you don't drink responsibly.**

**Avoid it!  
 Drink responsibly and stay in control!**

Subject line: “Drinking and driving is dangerous for you”



There were 16,694 alcohol-related fatalities in 2004 –

An average of one alcohol-related fatality every 31 minutes!

**You could be in it.  
Drink responsibly & stay in control!  
It's in your hands.**

Condition 2: Humor direct responsible drinking messages

Subject line: “Your absolute impotence”













*“Drink provokes the desire but takes away the performance” - William Shakespeare*

**Drink responsibly. Stay in control!**  
(The rest will all fall in place for you)

Subject line: “Drinking decathlon: What’s your score?”

# DRINKING DECATHLON

100 LITRES			FRONT CRAWL
VAULT			HURLING
ASYMMETRIC BARS			ROWING
WEIGHT LIFTING			4000 m INDIVIDUAL PURSUIT
SHOT			3 DAY EVENT

What's your score?

Drink responsibly. Stay in control!

Subject line: "Passing out means danger to your image!"



Wouldn't you rather sleep it off at home, than be,  
"Hitler the clown in hula-hula land"?

(It's your image at the end of the day that's at stake!!)

**So, drink responsibly & stay in control!**

Subject line: "And you thought you were singing!"



Warning: Too much drinking may lead you to believe that you can sing!

**Drink Responsibly. Stay in Control!**

....And be kind to your neighbors!

Condition 3: Fear indirect responsible drinking messages

Subject line: "Not everyone who drinks and drives, dies"

**Not everyone who drinks and drives dies.**

*Jacqueline Saburio was 20 years old when her car rammed into a truck. Today at 23, she is still trying to piece her life together.*

**Drink responsibly. Don't drink and drive. It's not worth it!**

Subject line: “Drinking and driving is no accident”



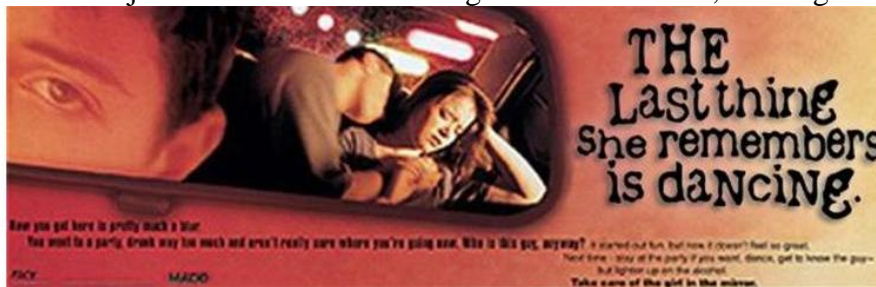
There were 16,694 alcohol-related fatalities in 2004 -

Equal to a fully loaded Boeing 747 crashing, and leaving no survivors, every nine days, all year long.

It is in our hands to ensure that we are not amongst the passengers of that ill fated “Boeing 747”.

All it takes is drinking responsibly & staying in control!

Subject line: “But the last thing she remembers is, dancing”



She went thru the unpleasant experience of an abortion, two months after that one night of “drinking”.  
A “ fun night” became a night of regrets for her.

Being a victim of sexual assault and rape are not uncommon outcomes of excessive drinking.

**Avoid it!**

All it takes is drinking responsibly and staying in control!

Subject line: “Drinking and driving is no accident”





There were 16,694 alcohol-related fatalities in 2004 –

An average of one alcohol-related fatality every 31 minutes!

**Drink responsibly & stay in control.  
That's all it takes!**

Condition 4: Humor indirect responsible drinking messages

Subject line: “Absolute impotence”




*“Drink provokes the desire but takes away the performance” - William Shakespeare*

**Drink responsibly. Stay in control!**  
(The rest will all fall in place)

Subject line: “Drinking decathlon: commonly seen (athletic??) fetes!”

# DRINKING DECATHLON

100 LITRES			FRONT CRAWL
VAULT			HURLING
ASYMMETRIC BARS			ROWING
WEIGHT LIFTING			4000m INDIVIDUAL PURSUIT
SHOT			3 DAY EVENT

And the most commonly seen fete is . . .?

**Drink responsibly. Stay in control!**

Subject line: “Passing out means danger to one’s image!”



Wouldn’t he rather sleep it off at home, than be,  
“Hitler the clown in hula-hula land”?

(It’s his image at the end of the day that’s at stake!!)

**So, drink responsibly. Stay in control!**

Subject line: “And they think they are singing!”



**Warning: Too much drinking has led them to believe that they can sing!**

**Drink Responsibly. Stay in Control!**

....And be kind to the neighbors!

## APPENDIX C

### (I) Humor Vs Fear.

1. The messages scared me about the dangers of irresponsible drinking
2. I found myself laughing when I saw the messages
3. One of the things I liked about the messages was how funny they were
4. The messages I saw were humorous
5. The messages made me sick in the stomach
6. I enjoyed the humor used in the messages
7. The messages were not at all amusing
8. The messages were fearful
9. The messages made me afraid of drinking irresponsibly
10. I had a positive feeling after viewing the messages
11. I had a very strong negative emotional reaction to the messages

### (II) Direct self reference Vs indirect reference

1. I don't think the messages are trying to target "me" directly.
2. I don't think these messages were designed to "directly" speak to me
3. I think the messages were talking "directly" to me
4. I noticed words like "they" "he" "she" in the messages
5. I saw the word "you" in the messages
6. I think these messages are designed to target other people around me
7. I think these messages are showing me how people like me behave
8. I think these messages are "talking" to me indirectly
9. I think these messages are talking "directly" to people around me
10. I think these messages are trying to send me a message by giving me examples of others
11. I think the messages are designed to target someone like me

### (III) The disinhibition scale

1. I like people who are partiers
2. I tend to drink more when others drink

3. I'm likely to do drugs when I party
4. I cannot have fun at a party unless I'm drinking
5. I like wild parties
6. Having alcohol is the key to a really good party
7. I have had or would like to have cyber sex with different people
8. I do drink and drive occasionally
9. It's no big deal drinking and driving
10. Someone drunk has driven me after a party
11. I sometimes go out with my friends for a drink and drink until I get drunk

*Dependent variables.* The following dependent variables were measured.

1. *Message acceptance.* Operationalized as: (a) liking, (b) relevance, (c) interest, (d) agreement, (e) defensiveness, (f) Intent to "click" on the message to read, and (g) intent to forward the message to friends to facilitate "action"

Liking:

1. I did not like the messages at all
2. I liked the messages very much
3. I enjoyed the messages very much
4. The messages were entertaining

Intent to click & read the messages

5. I am likely to forward the messages to my friends
6. If messages like these show up in my inbox (email), I am likely to click on them and read them
7. If messages like these show up in my inbox (email), I am likely to delete them
8. If messages like these show up in my inbox (email), I am likely to avoid them

Interest:

9. The messages were arousing

10. The messages were very boring
11. The messages truly held my interest
12. The messages made for interesting topics to talk about

Relevance:

13. I was able to personally relate to the messages
14. The messages were relevant to my friends
15. The messages are relevant to young people like me
16. The messages talk about relevant issues related to college drinking
17. The message made me think, this could happen to anyone, including me

Agreement:

18. I agree with the main points of the messages
19. The messages were informative
20. I think messages such as these would be a good way to communicate responsible drinking practices to college students
21. I don't agree with the messages at all
22. I don't believe these situations could happen to someone like me
23. These messages led me to think, these situations could happen to me

2. *Elaboration*. Operationalized as: (a) the likelihood of thinking about the message (cognitive energy expended), (b) thinking about the issues associated with drinking irresponsibly in general (issue involvement)

Cognitive energy expended:

1. I was consciously trying to process the information presented in the messages
2. I did not consciously process the information presented in the messages
3. The messages made me think
4. I actively thought about the information presented to me in the messages
5. I critically evaluated the information in the messages
6. The messages were a no-brainer

7. The messages didn't really make me think about anything
8. I think the messages motivated me to think
9. On a scale from 1-9 (1 being the least and 9 being the most), how much "thinking" did you think put in when you saw these messages?

Issue involvement:

10. I actively thought about the issue of responsible drinking
11. I found myself consciously thinking about the problems associated with irresponsible drinking
12. The messages didn't really make me think about drinking issues
13. These messages made me think about my drinking habits
14. These messages made me think about how college students drink sometimes
15. The messages made me think about the importance of staying in control when drinking
16. The messages made me think about safety issues in general when drinking
17. The messages made me think about the situations college students could get into because of drinking
18. The messages made me think about the potential outcomes of drinking too much
19. The messages contained weak scenarios and arguments for drinking responsibly

3. *Attitude change*. Operationalized as: (a) persuasiveness of the messages (b) the likelihood/ intent to follow message recommendations and take concrete steps to ensure responsible drinking practices (c) likelihood of networking with peers and friends to address the problem of drinking irresponsibly on campuses

Intent to follow message recommendations and take action:

1. I intend to be more careful while driving after I drink
2. I intend to take steps to ensure that I drink responsibly
3. I am more likely to have a designated driver when I go out drinking
4. I don't intend to reduce my drinking in the near future
5. I intend to be more careful next time I go out drinking

6. I intend to avoid the situations presented in the messages
7. The messages made me think about the possible steps I could take to ensure that I drink responsibly
8. I intend to change my drinking habits
9. I can control my drinking anytime I want to
10. I don't plan to change my drinking habits, unless I see my health suffer
11. I don't intend to reduce my drinking
12. All things considered, I would like to reduce my drinking

Networking with peers to address the issue:

13. I will take steps to make sure that my friends drink responsibly next time we go out drinking
14. I plan to discuss the serious consequences of irresponsible drinking with my friends
15. I'd like to persuade my friends to think about the negative outcomes of drinking too much
16. I wouldn't want to discuss responsible drinking practices with my friends
17. I'd like to make sure that my friends are alright when we go out drinking
18. I would like to discuss the outcomes of too much drinking with my friends
19. I would like to actively discuss the dangers of drinking too much with my friends, on on-line forums like FaceBook
20. I am likely to talk about the messages with my friends
21. The messages made me think about the possible steps I could to make sure that my friends drink responsibly
22. I don't want to discuss these types of topics presented in the messages with my friends

Message persuasiveness:

23. The messages were persuasive
24. The messages did not make me think about following responsible drinking practices



25. The messages motivated me to be more aware of responsible drinking practices
26. The messages did not motivate me to not take the dangers of drinking too much, seriously
27. I felt motivated to do something to avoid possible dangers associated with heavy drinking
28. The messages were poor persuaders in terms of promoting responsible drinking practices
29. The messages reminded me of the risks associated with heavy drinking
30. The messages did not make me think about how careful I should be to avoid similar situations
31. I think drinking irresponsibly could cause serious problems
32. I think, my drinking habits are just fine
33. I think it is fool hardy to drink too much
34. I think, not everyone is seriously affected by drinking
35. It is ok to “let yourself go” once in a while, when you drink
36. Drinking too much is risky, because things could easily “get out of hand”
37. These messages made me think about scenarios when unwanted things could happen to people as a result of drinking too much
38. The messages made me think “prevention is better than cure”
39. I think there is a need to address drinking problems on college campuses
40. I think there is a need to spread awareness about responsible drinking practices among college students
41. The messages made me worry about my safety when I drink