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Designing binge-drinking prevention campaigns that target Hispanic/Latino college students: Importance of individual attitudes and real-time peer support

Gabriela Morales¹, Judith McIntosh White^{2*}, Lisa German³, Mario Dozal³, Josh Bentley⁴ and David Weiss³

Abstract: Among U.S. college students, alcohol abuse, including binge-drinking, is an increasingly serious and pervasive problem. Student alcohol abuse can lead to societal and individual impacts, including “increasing rates of driving under the influence, unintentional injuries, and deaths, and a host of other social, psychological, and physiological problems”. Discovering particular characteristics and patterns of communication during the college/university life stage may assist the design of more effective health promotion campaigns aimed at alcohol abuse prevention/cessation. Unfortunately, to date, interventions aimed at changing student behaviors and environmental facilitators have had limited success. In particular, little research has focused on understanding the nature of appeals targeting Hispanic/Latino students (e.g.). Such interventions may benefit from additional focus on increasing college students’ social support reliance and/or on boosting their perceptions of self-efficacy and from further identification of specific appeals resonating with Hispanic/Latino students. The present study investigates students’

ABOUT THE AUTHOR

The research group behind this study focuses on science and health communication to the public and the applications of such communication to educational initiatives and health promotion campaigns. To date, their research has focused primarily on underserved populations, including senior adults and Hispanic/Latino groups in the Southwest United States. At various points in time, all the authors have been affiliated with the University of New Mexico, Albuquerque, designated by the federal government as a Hispanic-serving institution. The current study falls squarely within this focus.

PUBLIC INTEREST STATEMENT

Binge-drinking is defined as a man’s drinking five or more standard-sized alcoholic beverages (such as a 12 ounce beer) in two-hours or a woman’s drinking four or more. This kind of drinking, considered alcohol abuse, is a serious problem on college campuses. Binge-drinking can cause drunk driving, accidents, and other social, mental, and physical problems. Health researchers need to find ways to communicate with college-aged students about more healthful behaviors. By understanding students’ personal characteristics and health communication likes, researchers can design better health promotion campaigns targeting campus alcohol use.

In particular, researchers need to understand what types of campaign arguments appeal to Hispanic/Latino students. This study investigates students’ reports about their levels of social support and their feelings of being able to change their own behaviors. This information can help people who put together alcohol abuse prevention campaigns. The following report provides details about this research and its applications.

self-reported levels of both of these factors and provides implications for including appeals targeting these factors in health intervention campaigns.

Subjects: Education - Social Sciences; Persuasion; Health Communication;

Keywords: binge drinking; college students; Hispanic/Latino college student; alcohol abuse prevention campaigns

1. Literature review

1.1. Factors influencing college students' problem alcohol behaviors

Researchers have identified factors influencing problem drinking behaviors, including individual psychological factors like depression, stress, and loneliness (Eshbaugh, 2008; Pelletier et al., 2016). Other studies indicate increased social support and heightened perceived self-efficacy bolster resistance to problem alcohol behaviors (Budescu et al., 2011; Valdez et al., 2019).

Binge-drinking places drinkers at risk for alcohol-related problems and is increasing among college students (Rimal & Real, 2005; Wechsler & Wuethrich, 2002). The CDC defines binge-drinking as five drinks for men or four drinks for women within as little as two hours (Centers for Disease Control & Prevention, 2012). Interventions to reduce or stop binge-drinking among college populations used varied approaches and achieved varying success. Researchers found using “skills-based interventions” and “motivational interventions that incorporated personalized feedback” can be more effective than approaches emphasizing information about alcohol's properties or risks (Larimer & Cronce, 2007, p. 2439; Rhodes et al., 2019).

1.2. Interventions targeting problem alcohol behaviors

Traditional approaches to alcohol-abuse intervention are based upon motivational theories (e.g., Theory of Planned Behavior/Theory of Reasoned Action (Sharma, 2007)), or upon social cognitive theory, emphasizing self-efficacy as leading change in alcohol-abuse patterns (Oei & Morawska, 2004). Fishbein and Ajzen (1975) Theory of Reasoned Action (TRA) posits behaviors as products of intentions, stemming from attitudes toward behavior (i.e., desirability of results) and social norms (i.e., others' acceptance). The Theory of Planned Behavior (TPB) adds perceived behavioral control to this model (Ajzen, 1991). People may hold positive attitudes about a behavior and believe it supported by social norms, but not feel *able* to engage in the behavior. Thus, perception of control over the behavior becomes important. Perceptions of social support and self-efficacy are related to perceived behavioral control.

Many health campaigns focus on social norms' roles in influencing students' alcohol-related behaviors (Borsari & Carey, 2003). Rhodes et al. (2019) focused on the ease of students' retrieving from memory attitudes and norms regarding intentions to engage in particular drinking behaviors. Social norms comprise *injunctive* norms, reflecting approval, and *descriptive* norms, reflecting behavior (Cialdini et al., 1990). The TPB model incorporates both types of norms (Park & Smith, 2007). Individuals' responses to interventions' anti-abuse appeals vary, perhaps due to gender and to individual self-esteem (Kelly-Weeder, 2008; Neumann et al., 2009).

Health campaigns not targeting audiences on multiple levels will fail to achieve their goals. Solid audience research must precede such targeting, taking into account demographics, psychographics, and socioeconomic of audience members, as well as culture, social context, individual psychological dispositions, environment, and history that affect communities, while demonstrating culture-centered commitment to maximizing the targeted community's inherent strengths (Airhihenbuwa, 1995; Freimuth & Quinn, 2004).

College campuses constitute unique cultural environments with contextual norms and values. Thus, campus environment can affect students' behaviors and attitudes. When developing campaigns

designed to reduce/eliminate binge-drinking on campuses, health communicators must consider students' family and ethnic backgrounds and distinctive cultures created by the college environment itself, using audience-targeting strategies and multileveled culture-centered methods, if individual alcohol-related behavior change is to be effected (Randolph & Viswanath, 2004).

Attention to the influences of both “home” and campus cultures is important when determining message *content*, message *sources*, and delivery *channels* (Howard et al., 2001). Unless the target audience's preferred media are used to transmit health campaign messages, the audience will not receive those messages, and the campaign will fail to achieve its desired effects (Kreuter & McClure, 2004; Wright et al., 2008). College students' use of interactive, Web-based, and social networking sites dictates effective health campaigns employ these formats, along with social marketing, for health messaging (Grier & Bryant, 2005).

1.3. Consideration of Students' levels of social support and perceived self-efficacy when planning Anti-Alcohol-Abuse Campaigns

A recent study conducted at a large southwestern university with a majority Hispanic/Native American student body indicated many students obtain information about binge-drinking and other alcohol-related topics through interpersonal communication channels such as interactions with healthcare providers, peers, family members, and mentors, including teachers and pastors. Use of such interpersonal channels suggests health campaign planners should consider social support and students' resulting levels of perceived self-efficacy when planning appeals (Bentley et al., 2014)

Role of social support in reduction of problem alcohol behaviors. Common sense—supported by research—indicates increased social support reduces stress and facilitates more-healthful behaviors (Litt et al., 2009). Budescu et al. (2011) reported higher levels of family support correlated with lower levels of using tobacco and alcohol, supporting other studies with similar findings.

Other studies link social support and improved mental health. Hefner and Eisenberg (2009) reported that “higher perceived quality of social support was strongly associated with lower likelihood of depression, anxiety, suicidality and eating disorder, independent of frequency of social contacts and other individual characteristics” (p. 496). Pauley and Hesse (2009) argued that depression plays a large role in college students' problem drinking behaviors. Litt et al. (2009) found that expanding social networks of patients with problem drinking behaviors resulted in abstinence from alcohol longer than patients with lower levels of social support.

Hispanic/Latino individuals self-report varying levels of perceived social support, based on immigration status and SES (Almeida, Molnar, Kawachi & Subramanian, 2009): evidenced exists that “Latinos in the USA, specifically foreign-born Mexicans, may rely on family ties for support more than do non-Latino whites Specifically, the higher familial social support found among Latino immigrants may be due to retention of culture” (p. 1852). Thus, binge-drinking interventions tapping into known levels of target audience reliance on social support by *family members* may succeed among Hispanic/Latino students.

However, Groh et al. (2007) found the *content* of social support matters: family and peers encouraging alcohol use could precipitate negative behaviors, while support of abstinence might empower more positive behaviors. Other research found peer drinking behavior being more likely to encourage negative drinking behaviors in college students than peer verbalizations (Hallgren et al., 2013).

Role of perceived self-efficacy in reduction of problem alcohol behaviors. Perceived self-efficacy—the “belief in one's capabilities to organize and execute the courses of action required to manage prospective situations” (Bandura, 1995, p. 2)—is recognized as important in developing healthful behaviors. Bandura's (1977) social cognitive theory supports the role of outcome expectancies in governing drinking behavior; “low” expectancies minimize the effects of alcohol, while

‘high’ expectancies presume higher levels of deleterious effects from alcohol consumption” (Young et al., 2006, p. 70).

Perceptions of self-efficacy can be impacted by race/ethnicity, gender, and SES. Feelings of powerlessness/alienation due to exclusion from social power dynamics and societal “othering” contribute to lower perceived self-efficacy in minority groups and women, as well as in the poor (Gecas, 1989). Experiences by non-White individuals of racism/discrimination are linked to decreased self-efficacy and to negative health behaviors and/or outcomes (Karlsen & Nazroo, 2002; Krupski et al., 2005).

Cho (2006) found college students’ perceived self-efficacy in changing drinking habits is influenced positively by peer norms. Researchers see perceived drinking-refusal self-efficacy related to alcohol expectancy and to drinking behaviors in early adolescence (Connor et al., 2011) and predictive for alcohol use at all age levels (Engels et al., 2005).

Oei and Morawska’s cognitive binge-drinking model highlights lower perceived self-efficacy in developing problem alcohol behaviors: “social and binge-drinkers can be discriminated on the basis of their alcohol expectancies (AE), while binge-drinkers and alcoholics can be discriminated on the bases of drink-refusal self-efficacy (DRSE)” (Oei & Morawska, 2004, p. 173). Similar results were reported by Rosenberg et al. (2011), who found college students with higher self-efficacy believed it easier to abstain from drinking, and by Voogt et al. (2014), who reported those with higher DRSE drank less than those with lower DRSE. Additionally, Maisto et al. (2000) reported that increasing study participants’ self-efficacy contributed to a higher number of days of abstinence from drinking.

Links between social support and perceived self-efficacy. Researchers correlate increased social support with higher levels of perceived self-efficacy (Maisto et al., 2000; Voogt et al., 2014). Reis and Riley (2008) suggested looking at student alcohol use in a larger context as their respondents reacted to alcohol consumption “with a wider set of beliefs about their own individual self-efficacy and group self-efficacy than some stereotypes of campus drinking suggest” (p. 203). They also suggested that students’ believing alcohol consumption is part of campus culture may partially result from being surrounded by students “less emotionally and cognitively mature and possess[ing] low levels of self-efficacy in terms of handling alcohol” (p. 205). Thus, they recommended building stronger social networks through learning communities composed of cognitively mature students, faculty, and, most important, parents.

The present study focused on identifying factors related to the elements of TPB, as well as social support and perceived self-efficacy, which affect binge-drinking among college students. The research question guiding this study is the following:

RQ:What are statistically significant predictors of college students’ engaging in regular binge-drinking?

Based on prior research at the same southwestern Hispanic-serving institution, the authors sought to investigate the following hypotheses:

H1:Students identifying as Hispanic/Latino will exhibit higher rates of binge drinking than students of other ethnicities.

H2:Students identifying as Hispanic/Latino will exhibit higher levels of perceived social support than students of other ethnicities.

H3: Students identifying as Hispanic/Latino will exhibit lower levels of perceived self-efficacy than students of other ethnicities.

2. Method

To test influence of attitudes, social norms, and perceived behavioral control (including social support and self-efficacy) on binge-drinking, a survey was conducted of college students at a large public research university in the southwestern United States. This section reports on data gathering and analysis.

2.1. Recruitment

College students were chosen as the population for this study. A convenience sample of large lecture classes across campus was recruited, and researchers administered a pencil-and-paper survey to all students attending classes on the dates suggested by cooperating instructors. The researchers explained participation was voluntary and anonymous. No incentives were provided, and no identifiers were collected. The survey took 30 to 40 minutes to complete, and 458 surveys were returned. After excluding incomplete surveys, final sample size was 397.

2.2. Measures

The full survey contained 155 items, not all relevant to the present report. Relevant items include measures of students' binge-drinking behavior and demographic characteristics; attitudes about binge-drinking; perceptions of social norms; and perceptions of behavioral control.

Attitude measures included four items related to students' concerns about the prevalence of binge-drinking. These items were statements such as "Binge-drinking is a serious problem with college students in the U.S.," and "Binge-drinking is a rite of passage for college students and not a cause for concern" (reverse coded). Agreement with these items was measured on a 5-point Likert scale, and a principal components analysis showed that they formed a single Binge-drinking Concern scale ($\alpha = .74$). Three items measured students' perceptions that binge-drinking might lead to the abuse of other substances (e.g., "For some college students in the U.S., binge-drinking is associated with abuse of other substances"). This Association with Other Substances scale was also reliable ($\alpha = .81$).

Social norms were measured as descriptive and injunctive norms. Students were asked if any family members, close friends, or acquaintances participated in problem drinking behaviors (*yes/no*) and if they had ever been urged to participate in binge-drinking (*yes/no*), with injunctive norms referencing pressure from family, friends, or other peers to drink; that is, drinking was portrayed as a necessary behavior that others sought to influence (Oei & Morawska, 2004).

Perceived behavioral control was measured three ways. First, social support was measured using four of the five Berlin Social-Support Scales (Schwarzer & Schulz, 2000). These scales are Perceived Availability of Support ($\alpha = .92$), Need for Support ($\alpha = .71$), Support Seeking ($\alpha = .78$), and Actually Received Support ($\alpha = .82$). Second, self-efficacy was measured with the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). This 10-item scale is one-dimensional ($\alpha = .89$). Third, students' ability to avoid social pressure to binge-drink was measured with a single item: "I can effectively resist peer pressure to engage in binge-drinking."

Binge-drinking behavior was measured by asking students if they had ever participated in binge-drinking and if so, how often. For the purposes of this study, respondents were divided into those who never or rarely engaged in binge-drinking and those who participated in binge-drinking on a regular basis (once a month or more). Demographic data was collected with 12 items comprising, for example, age, gender, race/ethnicity, major area of study, and living situation.

2.3. Analysis

To test attitudes, social norms, and perceived behavioral control as predictors of regular binge-drinking behavior, the researchers created a logistic regression model using SPSS 22. A backward stepwise procedure was followed, with all variables entered into the initial model, and variables removed based on the Wald statistic. The final model was checked for outliers and overall goodness-of-fit.

A series of one-way ANOVAs was run to test whether the ethnicity variable—collapsed into three categories of non-Hispanic White, Hispanic, and Other—were significant with regard to scores on five variables: perceived available support, need for support, support-seeking behaviors, support actually received, and general perceived self-efficacy.

3. Results

This section provides a profile of the survey respondents, as well as the results of the logistic regression analysis.

3.1. Respondent profile

The sample was 62 percent female ($n = 246$), with 44% self-identifying as non-Hispanic White ($n = 174$) and 31% self-identifying as Hispanic/Latino ($n = 121$). No other racial or ethnic group comprised more than 5% of the sample. A plurality of respondents were college seniors (35%, $n = 127$), followed by juniors (30%, $n = 108$) and sophomores (25%, $n = 90$). The median age was 21.

Most students reported drinking alcohol (84%, $n = 330$), and 73% ($n = 282$) had participated in binge-drinking at least once. However, only 28% ($n = 112$) reported binge-drinking once a month or more. The rest of the respondents engaged in binge-drinking “rarely” or “never” (72%, $n = 283$).

3.2. Regression analysis

Binary logistic regression was used to identify factors predicting regular binge-drinking behavior. Fifteen independent variables were entered into the initial model, but only four were kept in the final model. This final model was statistically significant ($\chi^2(4) = 104.67, p < .001$), explaining 34% (Nagelkerke R^2) of the variance in regular binge-drinking behavior and correctly classifying 81% of cases. Significance levels and odds ratios for each predictor are reported in [Table 1](#). Less than 3% of cases had deviance scores greater than ± 2.0 , and none were greater than ± 2.58 . Cook's distances were less than 1 for all cases. The Hosmer and Lemeshow test was non-significant ($\chi^2 = 13.61, df = 8, p = .09$), suggesting a good model fit.

Demographic variables (sex, age, ethnicity) were not significant predictors in the model nor were student attitudes about whether binge-drinking was associated with other substance abuse, problem drinking by family members or acquaintances, being urged to binge-drink by others, need for social support, support seeking, actually received support, and general self-efficacy.

Four significant predictors of drinking behaviors were attitudes of concern, having close friends who participated in problem drinking, perceived availability of social support, and students' belief that they could resist peer pressure to binge-drink. Not surprisingly, students who expressed greater concern about the prevalence of binge-drinking, and those who reported greater confidence in their ability to resist peer pressure, were less likely to be regular binge-drinkers. Another expected finding was that students with close friends who participated in problem drinking behaviors were more likely to be regular binge-drinkers. However, contrary to what one might expect, students who reported more perceived available support were also more likely to be regular binge-drinkers.

3.3. ANOVAs

With regard to the relationship between ethnicity and perceived available support, need for support, support-seeking behaviors, support actually received, and general perceived self-efficacy, a series of one-way ANOVAs revealed no significance (P-values from .30 to .81).

Table 1. Logistic regression model of regular Binge-drinking behavior

Predictor	B	S.E.	Wald	Sig.	Exp(B)
Binge-drinking Concern	-1.54	.23	44.22	<.001	.22
Yes, I have close friends who participate in “problem” behaviors involving alcohol.	1.13	.27	16.97	<.001	3.10
Perceived Available Support	.66	.24	7.55	.006	1.93
I can effectively resist peer pressure to engage in binge-drinking.	-.63	.15	18.53	<.001	.53
Constant	3.65	1.33	7.50	.006	38.49
Model $\chi^2 = 104.67$ ($p < .001$)					
Nagelkerke $R^2 = .34$					
$n = 385$					

The dependent variable in this analysis is participating in binge-drinking so that 0 = never or rarely binge-drink and 1 = regularly binge-drink (once a month or more).

4. Discussion

4.1. Summary of findings

The present study sought to explore how elements of TBP, including attitudes, social norms (both injunctive and descriptive), and perceived behavioral control (including social support and self-efficacy) affect regular binge-drinking behavior among college students. This information can increase effectiveness of health campaigns targeting U.S. college students. Results indicated demographics had no statistically significant impact on students’ drinking behaviors, contradicting previous research (e.g., (Bennett, Miller, & Woodall), but logistic regression revealed four factors predictive of regular binge-drinking, explaining 34% of variance in such behavior and correctly classifying 81% of cases.

4.2. Research question

The four factors indicated as statistically significant predictors of college students engaging in regular binge-drinking include (1) students’ attitudes of concern about binge-drinking; (2) having close friends who were regular binge-drinkers (negative correlation); (3) higher perceived levels of available social support (negative correlation); and (4) increased belief that students could resist peer pressure to binge-drink (perceived self-efficacy). These factors both support and elaborate the findings of previous studies, especially in the realm of highlighting the difference between perceived and *real-time* social support, e.g., the finding that students who *thought* they had high levels of social support in fact had the wrong kind of social support—their binge-drinking friends tended to reinforce their own binge drinking behaviors. Researchers designing interventions to prevent binge-drinking should develop messages and arguments incorporating appeals targeting the factors supported by the current study as statistically significant predictors of binge drinking and perhaps refrain from focusing on factors not proving significant in predicting problem alcohol behaviors.

4.3. Hypotheses

Hypothesis 1, positing that Hispanic/Latino students would have higher rates of binge-drinking than students of other ethnicities, was not supported. Hispanic/Latino respondents showed a *decrease* in binge-drinking rates from a 1999 study at this same university (Bennett, Miller, & Woodall).

Hypothesis 2, positing that Hispanic/Latino students would report higher levels of perceived social support than students of other ethnicities, was not supported. No significant differences were found between perceived social support variables between Hispanic/Latino students and those of other ethnicities.

Hypothesis 3, positing that Hispanic/Latino students would report lower levels of perceived self-efficacy than students of other ethnicities, was not supported. No significant differences were found in self-reported perceived self-efficacy between Hispanic/Latino students and those of other ethnicities.

4.4. Implications

These results may inform messages targeting students based on their beliefs about specific drinking behaviors and grounded in counteracting negatively-correlated perceptions while strengthening positive relationships—a multilevel strategy that has proven more effective than addressing audiences on a single level (Freimuth & Quinn, 2004). For example, messages have been shown to be more effective when using interpersonal channels (Bentley et al., 2014) and should target students with binge-drinking friends by using such message content as “*friends don’t encourage friends to solve problems or assuage emotional distress through binge-drinking*” or “*it’s healthy to extend friendship networks to seek social support from non-drinkers or non-binge-drinkers*”. Messages should also seek to reinforce concepts concerning the seriousness of binge-drinking among college students, as well as counteracting mistaken beliefs about its importance and harmlessness as a college rite of passage. Finally, prevention campaign messages should aim to increase students’ perceptions of self-efficacy specifically with regard to their abilities to refuse peer encouragement to binge-drink, playing into the importance of students’ perceptions of control over drinking behaviors (Park & Smith, 2007).

Message designers should consider that college years are characterized by the formation of lifelong friendships and heavy peer influence. Regarding descriptive norms, close friends’ opinions and advice seem to matter more than do those of family members or acquaintances. With regard to this study, students’ having close friends who regularly engaged in binge-drinking was an important predictor of binge-drinking behaviors. The importance of such influence by close friends most probably also played a part in finding that higher levels of perceived available support were linked with increased odds of an individual student’s being a binge-drinker—perhaps in this case, students were showing social support for each other by drinking together. These findings emphasize the importance of positive peer influence, where social support *not to drink* could contribute to reducing students’ stress levels and raising their sense of self-efficacy, potentially leading to more healthful behaviors (Litt et al., 2009). This study also lends support to work by Groh et al. (2007) stressing that the *content* of social support matters—social support that encourages alcohol use could support further binge drinking, while social support that encourages abstaining from alcohol could empower refusal to binge drink.

Finally, the finding that ethnicity played no significant part in either rates of binge-drinking nor in self-reported levels of social support and self-efficacy is surprising, given the literature. Further research is indicated, especially given that rates of binge-drinking in the sample populations have *decreased* among Hispanic/Latino students over more than 10 years. Surely something is happening at this university—in this case, something good, as Hispanic/Latino students confound the experts by decreasing problem alcohol behaviors and maintaining levels of self-efficacy equal to their peers’. Research undertaken using a cultural lens could contribute to the literature focusing on the role of history and culture in influencing health behaviors (Almeida, Molnar, Kawachi & Subramanian, 2009; Airhihenbuwa, 1995; Freimuth & Quinn, 2004), while further studies focusing on colleges’ unique cultural environments, including their demographic composition, might uncover the resulting contextual norms and values that further drive students’ drinking behaviors (Bentley et al., 2014; Randolph & Viswanath, 2004). Discovering what this university may be doing right and/or more about the positive, reinforcing culture found at majority/minority Hispanic-serving institutions could inform more effective binge-drinking interventions targeted to this population.

4.5. Limitations

While the current study has findings important for campaign designers in preventing or mitigating alcohol abuse, some limitations should be considered. The most important limitation concerns the study's overly general definition of perceived self-efficacy, reflected in its use of the Schwarzer and Jerusalem (1995). As used here, the general self-efficacy scale was not a statistically significant predictor of binge-drinking, although a positive response to the item about whether a student could resist peer pressure to binge-drink was a predictor. Use of more specific scales of drink-refusal self-efficacy, such as that used by Oei and Morawska (2004) might yield more information about predictors of binge-drinking.

Another potential limitation of these results is the study's collection of data from a majority-minority campus—a campus where a combination of ethnic/racial minorities (Hispanic/Latino, Native American, and African American students) outnumbers non-minorities (White non-Hispanic students). The unusual demographic nature of the campus may itself impact minority alcohol-related behaviors. Although no significant differences were found between minority and non-minority alcohol-related behaviors, it is still possible that students' being surrounded by peers of like ethnicity may influence their beliefs about harmful effects of binge-drinking, for example, or may increase the impact of peer urging to engage in binge-drinking. Again, looking at such campuses using a culturally-focused lens, encompassing both demographically defined culture and the unique cultures of institutions of higher education, could be elucidating (Almeida, Molnar, Kawachi & Subramanian, 2009; Airhihenbuwa, 1995; Bentley et al., 2014; Freimuth & Quinn, 2004; Randolph & Viswanath, 2004).

These implications and limitations suggest future directions. First, more work should be done to examine alcohol-related concerns and the impact of family vs. peer influence on problem-alcohol behaviors at majority-minority college campuses, especially as the numbers of such campuses increase across the United States. Such research could advance knowledge about the differential impacts of peer influence on health promotion communication among varied ethnicities during the college/university life stage.

Differences between general perceived self-efficacy and specific drink-refusal self-efficacy should also be explored. The findings of this study should be used to create target-appropriate health campaign messages to be tested with college populations. Before these messages are tested, however, future studies should examine additional "targeting levels" such as attitudes of concern about binge-drinking; peer influence of close friends who are regular binge-drinkers; perceived levels of available social support, especially given the alcohol-related nature of such support; and students' belief that they can resist peer pressure to binge-drink. Additionally, where large numbers of ethnic minority students—such as Hispanic/Latino students—are included in the campus community, message tailoring should take into account particular characteristics shared by such students, including components of social support and perceived self-efficacy (Airhihenbuwa, 1995); (Almeida, Molnar, Kawachi & Subramanian, 2009); Bentley et al., 2014). Such tailoring of campaign messages should improve their effectiveness (Freimuth & Quinn, 2004; Howard et al., 2001).

In sum, this study revealed important information, including the fact that peer support may outweigh all other social network input with regard to binge-drinking. Other factors—including overall ethnic composition of the student body at a particular institution—also may impact such behaviors, and message designers should consider such factors when developing tailored messages to reduce college students' high-risk drinking behaviors.

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