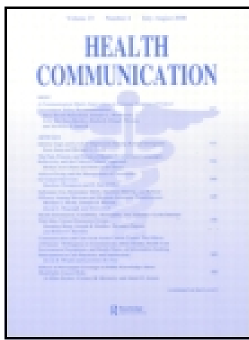

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When parents talk about college drinking: an examination of content, frequency, and associations with students' dangerous drinking

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ABSTRACT
This project examines alcohol messages exchanged between college students and their parents, as well as how such messages associate with college students' dangerous drinking. Undergraduate students ages 18 to 25 years were recruited for the study and asked to recruit a parent. The sample included 198 students and 188 parents, all of whom completed an online survey. This study found parents tended to emphasize the negative aspects of drinking, particularly the dangers of drinking and driving and the academic consequences of too much partying. Results indicated that parent–student alcohol communication has various dimensions, including negative aspects of drinking, rules about drinking, drinking in moderation, and benefits of drinking. Parents' reports of discussing alcohol rules had a significant, negative association with students' alcohol consumption, whereas parents' reports of discussing the negative aspects of alcohol use had significant, positive associations with students' dangerous drinking.

College drinking is a public health issue. More than 40% of college students engage in heavy episodic drinking, occurring when men consume five drinks or more, and women four drinks or more, in a sitting (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2002, 2007; O'Malley & Johnston, 2002; Wechsler, Lee, Kuo, & Lee, 2000). The more alcohol consumed, the more likely students are to experience negative consequences (Presley & Pimentel, 2006; Wechsler et al., 2000). Physical health consequences range from the minor, such as hangovers and vomiting, to the severe, including increased risk of sexual assault, injury, or death (Abbey, 2002; Hingson, Heeren, Winter, & Wechsler, 2005; Perkins, 2002; Presley & Pimentel, 2006). Given the pervasiveness of heavy episodic drinking and the consequences that can result, ongoing efforts are needed to mitigate college students' dangerous drinking (Lederman & Stewart, 2005). An often untapped resource for such efforts is students' parents.

Parent-based prevention programs are increasing, though still relatively rare on college campuses. One might argue that this is because parents have little influence on a student's alcohol use; however, a developmental perspective of the parent–child relationship, as well as empirical data, suggest otherwise. Developmentally, most college students are in a stage increasingly referred to as *emerging adulthood*, which spans the ages of 18 to 25 years, when one is no longer an adolescent and not quite an autonomous adult (Arnett, 1998, 2004). Many emerging adults, particularly college students, are dependent upon their parents to some degree, be it financially or emotionally, yet also striving for independence and self-responsibility. This in-between stage is reflected in the parent–child relationship. Taking on more of a friendship quality, the relationship is marked by increased liking, companionship, and quality of time spent together, combined with less conflict and parental control (Arnett, 1998, 2000, 2004; Fisher & Miller-Day, 2006; Schulenberg & Maggs, 2002). Thus, from the developmental perspective, it is not unreasonable to surmise that college students care what their parents think. Indeed, studies show an inverse relationship between parental disapproval of their college student children's alcohol use and students' dangerous drinking (Abar & Turrisi, 2008; Boyle & Boekeloo, 2006; Walls, Fairlie, & Wood, 2009; Wood, Read, Mitchell, & Brand, 2004).

Empirically, preliminary research into parent-based interventions that have been utilized with college students indicates parents have the potential to decrease students' drinking (Ichiyama et al., 2009; Turrisi, Jaccard, Taki, Dunnam, & Grimes, 2001) and increase students' use of protective behaviors while drinking (Donovan, Wood, Frayjo, Black, & Surette, 2012). However, results have been mixed, revealing the importance of further research regarding parents' alcohol communication during the child's college years. Early studies in this emerging line of communication research tended to be broad, exploratory investigations into parents' substance use messages (Miller-Day, 2008; Miller-Day & Dodd, 2004); more recent research has involved narrower investigations into specific alcohol topics, such as the negative consequences of drinking (Boyle & Boekeloo, 2009), alcohol rules (Baxter, Bylund, Imes, & Routsong, 2009), and how to stay safe while drinking (Abar, Morgan, Small, & Maggs, 2012). As Miller-Day and Dodd (2004) pointed out, parent–child

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communication about substance use is "multidimensional" (p. 71). Yet researchers know relatively little about the specific content of those dimensions, the comparative frequency with which various alcohol topics are discussed, or how the dimensions of parents' alcohol messages associate with students' alcohol use (Abar et al., 2012; Miller-Day & Dodd, 2004). The present project was designed to address these gaps.

Building on an emerging body of research regarding parents' attempts to influence their college students' drinking, the specific purpose of this study is twofold: (1) to explore both the content and frequency of the alcohol messages exchanged between college students and their parents, and (2) to examine how such messages associate with students' dangerous drinking.

Descriptive in nature, this study can help health and family communication scholars better understand the multidimensional qualities of the content of parent–child alcohol communication. Additionally, the study has practical and theoretical implications, in that it can inform future development of parent-based prevention programs, as well as future theory development regarding parents' influence on college drinking.

Content of parent–college student substance use communication

Parents of college student children often express disapproval of alcohol use in the form of rules and sanctions (Baxter et al., 2009; Miller-Day, 2008; Miller-Day & Dodd, 2004); however, the degree to which such proscriptive messages are exchanged is unclear. The percentage of participants indicating parents had rules or sanctions against substance use has ranged from 9% (Miller-Day & Dodd, 2004) to more than 50% (Miller-Day, 2008). While parents tend to be more flexible with alcohol rules compared to other substance use rules (Miller-Day & Dodd, 2004), almost one-third of college students in a recent study reported receiving a "zero tolerance" alcohol message from their parents during their sophomore year of college (Abar et al., 2012, p. 74). When both parents and students were asked to list the family's alcohol rules for the child during his or her adolescence, almost 47% reported zero-tolerance type rules, and 59% reported rules banning alcohol use until the child reached a certain age (Baxter et al., 2009). However, the most frequently listed alcohol rule, reported by 81% of participants, was conditional, instructing students not to drink and drive (Baxter et al., 2009). These varying results likely are due to the combining of alcohol, tobacco, and drugs in some studies (Miller-Day, 2008; Miller-Day & Dodd, 2004), the inclusion of parents in some samples (Baxter et al., 2009; Miller-Day & Dodd, 2004) but not others (Abar et al., 2012; Miller-Day, 2008), the use of open-ended versus closed-ended survey questions, and the different time frames under investigation.

In addition to rules and sanctions, many parents frame substance use as problematic by discussing negative consequences. According to Miller-Day and Dodd's (2004) study, parents typically warned their children about the potential legal and health risks related to substance use and losing control—risks such as addiction, being victimized, and making poor decisions. Focusing on drinking consequences, Boyle and Boekeloo's (2009) survey of first-year college students found that the most frequently discussed alcohol topic, reported by 70% of students, was the dangers of riding with a drunk driver, which was consistent with the Baxter et al. (2009) study involving alcohol rules. The second most frequently discussed topic involved "the importance of being committed to a healthy lifestyle" (Boyle & Boekeloo, 2009, p. 122), followed by not succumbing to peer pressure. Beyond these specific alcohol topics, the college students in Boyle and Boekeloo's study reported infrequent parent communication about the risks of drinking. This is likely related, in part, to the fact that not all parents view college drinking as problematic.

Many parents expect and approve of some amount of alcohol experimentation in college, viewing it as a rite of passage (Boyle & Boekeloo, 2006; Lederman & Stewart, 2005; Miller-Day & Dodd, 2004). As such, it is reasonable to believe some might discuss the benefits of alcohol, yet a review of the college drinking literature failed to reveal any studies examining this possible dimension of parent–child communication. Parents have been found to take a more neutral stance, providing their children with information about alcohol or drugs (i.e., newspaper articles), or advising students to use their own judgment (Miller-Day, 2008; Miller-Day & Dodd, 2004). Additionally, many parents share harm-reduction strategies (Abar et al., 2012; Marlatt & Witkiewitz, 2002), sometimes referred to as protective behavioral strategies (Martens et al., 2005), to help one stay safe while drinking. For instance, approximately 67% of college students reported receiving messages about not drinking quickly and limiting their alcohol intake (Abar et al., 2012). Additionally, Miller-Day and Dodd (2004) found that some parents stressed the importance of students always keeping their eyes on their drink. Whether or not students perceive such harm reduction tips as endorsements of drinking or warnings about the dangers of drinking is unclear.

Collectively, studies examining the content of alcohol messages exchanged between parents and their college student children suggest a range of topics are discussed. However, it is difficult to say which types of alcohol messages are most common, given the varying study designs and foci. A comprehensive survey asking about a wide range of parents' alcohol messages, as well as the frequency of such messages, was not found in the extant literature. An additional limitation in this relatively new line of research involves the timing of parents' alcohol communication. Some studies asked about conversations occurring during "adolescence" (Baxter et al., 2009, p. 257), whereas others asked about conversations that included students' high school years (Miller-Day, 2008; Miller-Day & Dodd, 2004). Given parental approval of drinking during the college years, as well as the perception that 18- to 25-year-olds are transitioning from teenagers to adults (Abar et al., 2012; Arnett, 2004), it is likely that parents' alcohol messages during high school differ from those during college. Since parents and their children often perceive family communication differently (Baxter et al., 2009; Booth-Butterfield & Sidelinger, 1998), it is important to gather data from both students and their parents.

In an attempt to address such limitations and build upon the strengths of the extant research, a survey was created for the present project to ask both college students and their parents about a broad range of alcohol topics discussed since the child graduated from high school until participation in the study. The survey was designed to answer the following:

RQ 1: What specific alcohol topics do parents most frequently and least frequently discuss with their college student children according to (A) students and (B) parents?

RQ 2: What are the broader content dimensions, or types of topics, discussed between parents and their college student children according to (A) students and (B) parents?

An examination of the frequency and content dimensions of parent–student alcohol communication will allow for an investigation of how parents' specific alcohol messages associate with college students' dangerous drinking.

Substance use conversations and college students' drinking outcomes

Several studies suggest substance use communication between parents and their young adult children might help deter college students' dangerous drinking (Booth-Butterfield & Sidelinger, 1998; Ichiyama et al., 2009; Miller-Day, 2005, 2008; Turrisi et al., 2001). Miller-Day (2005) found that students whose parents had not said or done anything during the child's high school years until the time of the survey to try to prevent alcohol or drug use were more likely to have gotten drunk or used tobacco in the previous month than students whose parents had tried to prevent their child from using substances. Additionally, Booth-Butterfield and Sidelinger (1998) found that college students who reported more frequent parent–student discussions regarding alcohol use were more likely to take precautions, such as not drinking and driving, or not drinking frequently. However, the mere existence of alcohol communication between students and parents is not necessarily related to decreased drinking (Abar et al., 2012; Menegatos & Lederman, 2013).

The influence of parent alcohol communication likely depends, in part, on what is said or how students perceive what is said. Boyle and Boekeloo (2009) found a positive relationship between college students' drinking and parent communication regarding the negative aspects of drinking. Due to the cross-sectional nature of their study, it was not known whether the discussions occurred because of the students' prior drinking behaviors or whether the talks preceded alcohol use. Miller-Day (2008) found a negative association between students' alcohol use and parents' no-tolerance rule for substance use, but a positive association with parents threatening punishment for substance use. A comparison of parents' zero-tolerance messages, harm reduction messages, mixed messages, and no alcohol communication also revealed an inverse relationship between zero-tolerance messages and students' dangerous drinking (Abar et al., 2012). Perhaps more striking was that "students who perceived harm-reduction based messages from their parents consumed 150% more alcohol than those students who perceived neither type of alcohol-related message," contradicting the belief that "students who did not perceive alcohol-related messages from their parents would be most at risk" (Abar et al., 2012, p. 77). Collectively, these studies (Abar et al., 2012; Boyle & Boekeloo, 2009; Miller-Day, 2008), all of which used student-only samples, indicate that blanket suggestions for parents to talk to their kids about alcohol might not be sage advice—content matters.

Turning to research employing experimental designs, two parent intervention studies lend support to the idea that parent–child alcohol communication can help mitigate college students' dangerous drinking (Ichiyama et al., 2009; Turrisi et al., 2001). In both studies, the intervention targeted parents and their teens the summer before starting college. It involved a handbook informing parents about heavy episodic drinking on college campuses and offering strategies for talking about alcohol. Turrisi et al. (2001) found that during the first semester of college, students in the treatment condition consumed significantly fewer drinks, got drunk less often, experienced fewer consequences, and perceived lower levels of peer and parental approval of drinking than did students in the control group. In a later larger study, Ichiyama et al. (2009) compared the parenting handbook intervention to an alcohol fact sheet intervention. Surveys of students' alcohol use the summer before starting college and during both the fall and spring semesters revealed no significant differences in the two groups in terms of heavy episodic drinking or alcohol-related problems. However, students in the parental handbook group were significantly less likely to become drinkers, and women showed significantly less growth over the school year in the typical number of weekly drinks consumed, whereas male students in this group reported more growth in the number of drinks typically consumed each week than did the male students whose parents were in the alcohol information fact sheet condition.

Focusing on protective behaviors and parent–child alcohol communication, a recent study compared the effects of an online parent intervention administered the summer before the teen started college with an e-newsletter informing parents about the risks of drinking (Donovan et al., 2012). Parents in the intervention group discussed protective behaviors with their children more frequently than parents in the control group, and students whose parents received the Web-based intervention were more likely to use protective behaviors than students whose parents were in the control group. There was no difference, though, between the two groups of students in regard to heavy episodic drinking. Together, these parent intervention studies underscore the argument that additional research is needed to better understand how specific parental messages impact students' drinking (Donovan et al., 2012; Ichiyama et al., 2009; Turrisi et al., 2001).

Because the association between the content of parents' alcohol messages and college students' drinking is unclear, the following research question is posed:

RQ 3: What is the association between college students' dangerous drinking and the type of alcohol communication topic as reported by (A) students and (B) parents?

Method

Participants and procedures

Undergraduate students between the ages of 18 and 25 years enrolled in communication classes at a large Southwestern university were recruited for the study and asked to recruit a parent. Students took the survey online at a designated computer lab on campus. They were instructed to select one parent—the parent they talked with the most—whom they could e-mail and would reference throughout the survey. Students e-mailed the parent recruitment letter and survey link to their parent, and provided the researcher with the parent's e-mail address so that a reminder could be sent. Both student and parent participants were asked to enter an alphanumeric code that could be used to match up their confidential survey information. Students received extra credit for participation, regardless of whether the parent participated.

In total, 220 students took the online survey. To ensure they were reading the questions, several "checks" were integrated into the survey. For example, an item read as follows: "If you are still paying attention, mark the number two as the answer to this question." Respondents who did not mark 2 were removed from the data analysis. This filtering process resulted in an initial student sample of 201 participants. Similarly, a total of 199 parents took the online parent survey; however, eight participants were removed from the data analysis because they did not complete the survey or because their responses to the item "check" were incorrect. The two groups were then matched up based on the alphanumeric codes. Three dyads were removed because the parent responding to the survey differed from the parent referenced by the student. This resulted in a final sample of 158 parent–student dyads, plus 40 student participants without a matching parent, and 30 parent participants without a matching student.

The final student sample consisted of 198 students, whose average age was 19.55 years (SD = 1.37). Half the students were freshmen (50%), and the other half a combination of sophomores (18.7%), juniors (23.2%), and seniors (8.1%). The majority was female (58.6%). Most students identified as White or European American (59.6%), followed by Asian (7.1%), African American (6.6%), Hispanic (6.1%), and Native Hawaiian or Pacific Islander (1%); more than 19% chose Other or a combination of these categories. Many students (40.4%) said they had not engaged in heavy episodic drinking at all over the previous two weeks, whereas 28.8% had done so once or twice. The remaining students, 30.8%, were frequent heavy episodic drinkers.

To determine whether there were significant differences between the group of students who were matched up with their parents' survey data and the group of students who could not be matched up, independent-measure t-tests were conducted for two of the primary dependent variables investigated in this study: students' alcohol consumption and students' negative consequences. The group of students without a matching parent consumed significantly less alcohol (M = −.26, SD = .76) than the group of students with a matching parent (M = .07, SD = .95), $t(196) = 2.03$, $p = .04$, $\eta^2 = .02$. The group of students without a matching parent also experienced fewer negative consequences due to their drinking than the group of students with a matching parent; however, this difference was not significant. The group of students without a matching parent also reported talking to their parent slightly less often than students with a matching parent, but this difference was not significant. Because of the significant difference regarding alcohol consumption, whether or not students had a matching parent was entered as a control variable in data analyses where alcohol behaviors served as criterion variables.

The final parent sample, including those with a matching student and those without, was made up of 188 participants, mostly mothers (73.9%), ranging in age from 35 to 68 years (M = 50.75, SD = 6.04). Most identified as White or European American (69.1%), followed by Hispanic (8%), Black or African American (5.9%), Asian (4.8%), and Native Hawaiian or Pacific Islander (1.1%); more than 11% chose Other or a combination of these categories. Differences between parents with and without a matching student were investigated via independent-measure t-tests, using parents' drinking behaviors and the frequency of parent–student alcohol communication as dependent variables. Differences were not significant.

Instrumentation

Student alcohol consumption. Student alcohol consumption was measured using three items drawn from the Core Alcohol and Drug Survey (Core Institute, 2005; Presley & Vineyard, 2004). The questions asked how many times over the previous two weeks students engaged in heavy episodic drinking, how many days they consumed alcohol over the previous month, and their average number of weekly drinks. Items were standardized and averaged to create a composite of student drinking behavior, which demonstrated strong reliability (α = .91).

Negative consequences. Drawing on the Core Alcohol and Drug Survey (Core Institute, 2005; Presley & Vineyard, 2004), participants were asked how often they experienced 19 negative consequences due to their drinking since the start of the school year. Sample items included "had a hangover" and "been arrested for DWI/DUI." A 6-point response scale was employed: *never, once, twice, three to five times, six to nine times,* and *ten or more times*. Students' responses were summed (M = 28.15, SD = 9.44).

Parent–student alcohol communication topics. Parent–student alcohol communication topics were assessed with 68 questions asking participants to indicate the extent to which they had discussed a wide range of alcohol topics since the student graduated from high school until the time of the survey. For instance, the first item posed to students read as follows: "Since I graduated from high school, this parent and I have talked about the dangers of drinking and driving." Both students and parents were asked the same questions, though the wording was adjusted appropriately. Each item included a 7-point response scale ranging from *not at all* (1) to *very often* (7). A brief description of how the survey was composed follows.

Of the 68 questions, 26 were drawn from the Alcohol Based Parent–Teen Communication Scale (Boyle & Boekeloo, 2009; Turrisi, Wiersma, & Hughes, 2000), which focused on negative consequences of drinking. Additional negative consequence questions were added, along with items regarding the benefits of drinking. A sample benefit item was "Since I graduated from high school, this parent has told me that drinking will help me make friends." Drawing from other parent substance use communication studies (Baxter et al., 2009; Lederman & Stewart, 2005; Miller-Day, 2008; Miller-Day & Dodd, 2004), items were added regarding rules, threats of disciplinary action, offers of rewards, parental expectations their children will drink in college, advice to use one's own judgment, and hinting that the child should not drink. Harm reduction tips were also added (Martens et al., 2005). Throughout the development of the survey, two undergraduate research assistants reviewed the questions, making suggestions about content and language. The data from these 68 alcohol communication items were used to create the broader content dimensions of parent–student alcohol communication, referred to as topic types.

Student topic types. To reduce the 68 alcohol communication items into broader dimensions of alcohol communication, an exploratory factor analysis (EFA) was conducted using the student data. As detailed in the Results section in response to RQ2 (A), it yielded three topic types: (1) negative aspects of drinking ($\alpha = .97$), which had a mean of 3.51 ($SD = 1.48$), (2) rules and sanctions ($\alpha = .86$), which had a mean of 1.91 ($SD = 1.22$), and (3) the benefits of drinking ($\alpha = .83$), with a mean of 1.34 ($SD = .61$).

Parent topic types. An EFA using the parents' responses to the survey, detailed in the Results section for RQ2 (B), yielded three alcohol communication dimensions: (1) negative aspects of drinking ($\alpha = .97$), with a mean of 4.60 ($SD = 1.69$), (2) drinking in moderation ($\alpha = .90$), with a mean of 2.20 ($SD = 1.37$), and (3) rules ($\alpha = .79$), with a mean of 2.29 ($SD = 1.64$).

Results

Research question 1

The first research question asked what specific alcohol topics parents most and least frequently discussed with their college student children according to (A) students and (B) parents. The means for the 68 items assessing parent–student alcohol communication topics were examined. Respondents who said they had not discussed alcohol since the student graduated from high school (students $n = 15$; parents $n = 13$) were not asked about specific topics.

According to the students, the most frequently discussed topic was the risk of riding in a car with someone who has been drinking ($M = 5.32$, $SD = 1.98$); 72% of students indicated this topic was often discussed. Academic warnings were also common, including cautions that too much partying could interfere with school and hurt the child's grades. Students said their parents often encouraged them to use their own judgment when it came to drinking alcohol, warned how drinking could get them into trouble with police, and told them to always keep their eyes on their drink. Rounding out the students' Top 10 was the warning that drinking too much might cause them to do something they later regretted, followed by the ways in which alcohol can impair judgment, and the importance of not being pressured by others into drinking. Overall, students reported that their parents most frequently discussed the negative aspects of drinking. An exception to this was the encouragement for students to use their own judgment, reported by slightly more than 52% of students as being discussed often.

Turning to the least frequently discussed topics, seven of the 10 involved benefits of drinking. The remaining items involved offers of rewards and gifts for not drinking, and a rule prohibiting drinking regardless of age. Less than 5% of students said this prohibition rule was discussed often. A similar survey item, asking about a zero-tolerance rule, was said by 7.7% of students to be discussed often. Table 1 displays the descriptive statistics for the most and least frequently discussed topics based on student reports.

Parents, like their college student children, said the most frequently discussed alcohol topic was the risk of riding in a car with someone who has been drinking ($M = 5.81$, $SD = 1.79$), with 77.6% of parent participants reporting this topic was often discussed. Dangers of drinking and driving was second. Also consistent with students' reports, parents said academic warnings were very common, including cautions that too much partying could interfere with school and hurt the child's grades. The next most frequently discussed topics were how drinking could get the child into trouble with police and the ways that alcohol can impair judgment. Parents also indicated that peer pressure was commonly discussed: the importance of not being pressured by others into drinking, and that drinking just to go along with the crowd is bad. As with the students' Top 10 list, warnings of how drinking too much might cause students to do something they later regretted made the parents' Top 10 list. The last of the most frequently discussed topics, mixing alcohol with medications and other drugs could be dangerous, was said to be discussed often by more than 55% of the parents.

Parents' reports of the least frequently discussed topics were similar to students' reports in that the majority involved benefits of drinking and offers of gifts and rewards for not drinking. None of the prohibition rules made parents' least frequently discussed list. Compared to students, a larger percentage of parents said they often discussed rules prohibiting drinking regardless of age (14.5%), as well as zero-tolerance rules (20.1%). Table 2 displays the descriptive statistics for the parent data.

Research question 2

The second research question asked about the broader types of topics discussed between parents and their college student children according to (A) students and (B) parents. Two exploratory factor analyses were employed to explore any underlying dimensions to parents' alcohol communication, and to reduce the data into a smaller number of factors that could be used as independent variables in hierarchical

Table 1. Descriptive statistics for alcohol communication topics based on student reports.

Item	*n*	*M*	(*SD*)	Not discussed	Often discussed
Most frequently discussed					
Riding in car with one drinking	182	5.32	(1.98)	19.8%	72.0%
Partying interfering with school	183	4.67	(1.85)	25.7%	56.3%
Partying could hurt grades	183	4.63	(1.97)	29.5%	55.7%
Drinking and driving dangers	183	4.47	(1.80)	28.4%	56.8%
Encourage to use own judgment	182	4.37	(1.99)	35.7%	52.2%
Trouble with police	183	4.27	(2.07)	37.2%	49.7%
Keep eyes on drink	182	4.18	(2.27)	40.1%	46.7%
Do something regretted	182	4.06	(2.07)	42.9%	44.5%
Can impair judgment	183	4.04	(2.07)	41.5%	44.3%
Not being pressured by others	183	3.98	(2.01)	42.6%	43.2%
Least frequently discussed					
Offered rewards for not drinking	183	1.66	(1.35)	89.1%	5.5%
Offered gifts for not drinking	183	1.47	(1.13)	93.4%	3.3%
Makes it easier to have fun	183	1.47	(.98)	94.5%	1.6%
Benefits of drinking	183	1.43	(.91)	94.5%	2.2%
Makes it easier to talk to people	183	1.42	(.89)	96.2%	1.6%
More comfortable when awkward	183	1.39	(.94)	95.1%	1.6%
No drinking, regardless of age	183	1.39	(1.08)	91.8%	4.9%
Helps relieve stress	183	1.26	(.69)	97.8%	1.1%
Helps hook up	181	1.24	(.90)	96.1%	1.7%
Helps make friends	183	1.22	(.63)	97.8%	0%

Note. Percentages for the "Not discussed" column indicate the proportion of student participants who responded with a 1, 2, or 3 on the survey. Percentages for the "Often discussed" column indicate the proportion of students who responded with a 5, 6, or 7 on the survey.

Table 2. Descriptive statistics for alcohol communication topics based on parent reports.

Item	*n*	*M*	(*SD*)	Not discussed	Often discussed
Most frequently discussed					
Riding in car with one drinking	174	5.81	(1.79)	13.8%	77.6%
Drinking and driving dangers	175	5.61	(1.69)	15.4%	77.7%
Partying interfering with school	174	5.16	(1.94)	22.4%	66.1%
Partying could hurt grades	172	5.15	(2.06)	25.0%	65.7%
Trouble with police	175	5.09	(2.14)	24.6%	66.9%
Can impair judgment	171	4.93	(2.13)	28.7%	60.2%
Not being pressured by others	173	4.91	(2.05)	27.7%	61.8%
Do something regretted	174	4.86	(2.17)	31.0%	62.1%
Going along with crowd is bad	174	4.72	(2.25)	31.6%	58.6%
Mixing alcohol with medications	173	4.61	(2.36)	37.6%	55.5%
Least frequently discussed					
Offered rewards for not drinking	174	1.66	(1.53)	87.9%	7.5%
Okay if not interfere with school	173	1.66	(1.32)	90.2%	6.4%
Offered gifts for not drinking	175	1.43	(1.23)	92.6%	6.3%
Benefits of drinking	175	1.29	(1.03)	94.9%	3.4%
Should party while in college	174	1.27	(1.04)	91.4%	5.7%
More comfortable when awkward	175	1.27	(1.04)	96.6%	2.9%
Makes it easier to have fun	173	1.25	(.84)	96.0%	2.3%
Makes it easier to talk to people	175	1.22	(.83)	97.1%	1.7%
Helps hook up	173	1.18	(.76)	96.5%	1.7%
Helps relieve stress	175	1.14	(.64)	98.3%	1.1%
Helps make friends	175	1.14	(.70)	98.3%	1.4%

Note. Percentages for the "Not discussed" column indicate the proportion of parent participants who responded with a 1, 2, or 3 on the survey. Percentages for the "Often discussed" column indicate the proportion of parents who responded with a 5, 6, or 7 on the survey.

regressions to investigate the association between types of topics discussed and students' drinking outcomes (RQ3).

To answer RQ2 (A), the student data for all 68 items asking about parent–child alcohol communication topics were subjected initially to a principal component factor analysis. Both the KMO index, .89, and Bartlett's test of sphericity, $\chi^2(2278) = 9561.60$, $p < .001$, indicated the items were intercorrelated; thus, the exploratory factor analysis was justified. The two primary criteria for determining how many factors to retain were (1) those with eigenvalues larger than 1, and (2) the scree test. Initially, 12 factors with eigenvalues larger than 1.0 emerged, accounting for 71.64% of the variance. However, the eigenvalue criterion often leads to an overestimate of acceptable factors (Park, Dailey, & Lemus, 2002), and an examination of the scree plot suggested only three factors should be rotated. Thus, the data for the 68 items were analyzed using maximum likelihood factor analysis with oblimin rotation specifying three factors. Oblimin was selected because it is an oblique rotation method, and there was no reason to assume the communication items would not be correlated (Park et al., 2002). If an item's primary loading was greater than .50 and its secondary loadings were less than .30, the item was retained. Additionally, the items had to fit conceptually with their respective factors. Multiple iterations of the factor analysis were conducted, in which complex items and items lacking conceptual fit were dropped, until a clean factor solution was obtained.

Ultimately, 44 items were retained. All three factors had eigenvalues larger than 1.0 and collectively accounted for 54.27% of the variance. The first factor included 32 items focusing on the negative aspects of drinking. It accounted for 41.27% of the variance. The second factor, accounting for 6.09% of the variance, encompassed five items regarding parental rules and/or sanctions. This factor included items such as "this parent has threatened to discipline me if I get drunk." The third factor, accounting for 6.91% of the variance, involved the benefits of drinking and included seven items, such as "this parent has told me that drinking alcohol is a good way to help me relieve stress." All 44 items and their factor loadings are displayed in Table 3. The three factors determined by the EFA—(1) negative aspects of drinking (α = .97), (2) rules and sanctions (α = .86), and (3) benefits of drinking (α = .83)—all demonstrated strong reliability, reflecting three different types of alcohol communication topics, or dimensions, discussed by parents and their college student children based on the students' reports. There was a significant, medium-sized correlation between negative aspects of drinking and rules and sanctions, $r(181) = .37$, $p < .001$. Negative aspects of drinking was also significantly correlated with benefits of drinking, $r(181) = .29$, $p < .001$. There was a small, but significant, correlation between rules and sanctions and benefits of drinking, $r(181) = .15$, $p = .04$.

Table 3. Factor structure for student reports of parent–child alcohol communication topic types.

Item	Factor 1, negative aspects of drinking	Factor 2, rules and sanctions	Factor 3, benefits of drinking
Drinking and driving dangers	.641		
Partying interfering with school	.616		
Alcohol changes one's personality	.677		
Fun things to do instead of drink	.665		
Accurate judgments difficult	.702		
Negatives of mixing alcohol and sex	.701		
Not being pressured by others	.708		
Take advantage of one sexually	.583		
Signs of alcohol poisoning	.719		
Keep eyes on drink	.761		
Partying could hurt my grades	.661		
Can impair judgment	.890		
Do something regretted	.798		
Going along with crowd is bad	.773		
Mixing alcohol with medications	.764		
Does not make one more of an adult	.689		
Advice on handling peer pressure	.731		
Be taken advantage of sexually	.796		
Trouble with police	.712		
School's punishment if caught	.563		
Risk of riding in car with one drinking	.709		
Social drinking and alcoholism	.599		
Talk to parent if drinking problem	.722		
How alcohol works in the body	.719		
Can create a false sense of power	.732		
Can make problems worse	.824		
Drinking is bad for health	.760		
Drinking can make one sick	.790		
Effects on making decisions	.869		
Lead to serious drinking problems	.758		
What to say to a drink offer	.735		
Gets in way of making true friends	.720		
Threatened to discipline if drunk		.615	
Parent's punishment for drinking		.739	
No parties where there's alcohol		.777	
Embarrassment for the family		.673	
Zero-tolerance rule for alcohol		.802	
Helps make friends			.797
Helps hook up			.579
Makes it easier to talk to people			.655
Makes it easier to have fun			.640
Helps relieve stress			.764
Benefits of drinking			.627
More comfortable when awkward			.552

To answer RQ2 (B), the parent data for all 68 alcohol-communication items were subjected initially to a principal component factor analysis. Both the KMO index, .887, and Bartlett's test of sphericity, $\chi^2(2278) = 9122.74$, $p < .001$, indicated the items were intercorrelated; thus, the EFA was justified. The same two criteria employed with the students' reports were used with the parents' reports. Initially, 13 factors with eigenvalues larger than 1.0 emerged and collectively accounted for 73.58% of the variance. An examination of the scree plot suggested that only three factors should be rotated; thus, the data for the 68 items were analyzed using maximum likelihood factor analysis with oblimin rotation specifying three factors. A 50/30 selection criterion was utilized to determine which items loaded on which factors. Multiple iterations of the factor analysis were conducted with the parent data, in which complex items and items lacking conceptual fit were dropped.

Ultimately, 31 items were retained. All three factors had eigenvalues larger than 1.0 and collectively accounted for 60.36% of the variance. The first factor, focusing on the negative aspects of drinking, included 21 items and accounted for 44.33% of the variance. The second factor encompassed seven harm reduction items focusing on ways to drink in moderation, such as "I have told my child to eat while he/she is drinking so that he/she doesn't get too drunk." This factor accounted for 10.66% of the variance. The third factor, involving parental rules on drinking, included three items and accounted for 5.37% of the variance. All 31 items and their respective loadings are displayed in Table 4. In short, the EFA conducted with the parent data revealed three topic dimensions: (1) negative aspects of drinking (α = .97), (2) drinking in moderation (α = .90), and (3) rules (α = .79). There was a significant, medium-sized correlation between negative aspects of drinking and drinking in moderation, $r(173) = .42$, $p < .001$. Negative aspects of drinking also significantly correlated with Rules, $r(173) = .33$, $p < .001$.

Research question 3

The third research question asked about the association between college students' dangerous drinking and the types of alcohol topics discussed based on (A) students' and (B) parents' reports. To answer RQ3 (A), two hierarchical multiple regression analyses were conducted. For the first regression, five control variables were entered in Step 1. Because previous research (Ham & Hope, 2003; O'Malley & Johnston, 2002; Wechsler et al., 2000) has shown college students' dangerous drinking is predicted by student sex (dummy coded; female = 1, male = 2), year of college, race (dummy coded; White or European American = 1, Black or African American = 2, Hispanic or Latino = 3, Asian = 4, Native Hawaiian or Pacific Islander = 5, American Indian or Alaska Native = 6, Other = 7, More than one race/ethnicity = 8), and

Table 4. Factor structure for parent reports of parent–child alcohol communication topic types.

Item	Factor 1, negative aspects of drinking	Factor 2, drinking in moderation	Factor 3, rules
Drinking and driving dangers	.785		
Partying interfering with school	.767		
Alcohol changes one's personality	.694		
Fun things to do instead of drink	.673		
Accurate judgments difficult	.766		
Negatives of mixing alcohol and sex	.724		
Not being pressured by others	.800		
Keep eyes on drink	.577		
Partying could hurt grades	.746		
Can impair judgment	.902		
Do something later regretted	.861		
Going along with crowd is bad	.798		
Mixing alcohol with medications	.743		
Does not make one more of an adult	.709		
Be taken advantage of sexually	.622		
Trouble with police	.866		
School's punishment if caught	.691		
Risk of riding in car with one drinking	.826		
Suspension from school if caught	.650		
Can make one sick	.701		
Effects on making decisions	.784		
Eat while drinking		.778	
Drink water while drinking		.931	
Drink in moderation suggestions		.791	
Okay at home with parents		.597	
Pace self when drinking		.670	
Eat before drinking		.806	
Okay if doesn't interfere with school		.674	
No drinking, regardless of age			.741
Not parties where there's alcohol			.712
Zero-tolerance rule for alcohol			.673

Table 5. Hierarchical multiple regression results: predicting student alcohol consumption using student reports of alcohol communication topic types (N = 183).

Model variables	Model R^2/Adjusted R^2	B	SE B	β
Step 1	.17/.15			
Constant		1.47	.41	
Sex		.27	.13	.14*
Year in college		−.08	.06	−.09
Race		−.06	.03	−.17*
Greek affiliation		−.71	.15	−.32**
Matching parent		−.21	.16	−.09
Step 2	.17/.13			
F1: Negative Aspects		.03	.05	.05
F2: Rules and sanctions		−.01	.06	−.01
F3: Benefits of drinking		−.06	.12	−.04

Note. Total R^2 = .17, adjusted R^2 = .13, F(8, 174) = 4.52, p < .001.
*p < .05; **p < .001.

Table 6. Hierarchical multiple regression results: predicting student negative consequences using student reports of alcohol communication topic types (N = 183).

Model variables	Model R^2/Adjusted R^2	B	SE B	β
Step 1	.06/.03			
Constant		35.21	4.46	
Sex		2.46	1.46	.13
Year in college		−.19	.68	−.02
Race		−.31	.28	−.08
Greek affiliation		−4.02	1.67	−.18*
Matching parent		−1.61	1.80	−.07
Step 2	08/.04			
F1: Negative aspects		.61	.56	.10
F2: Rules and sanctions		.53	.65	.07
F3: Benefits of drinking		.58	1.34	.04

Note. Total R^2 = .08, adjusted R^2 = .04, F(8, 174) = 1.91, p = .06.
*p < .05.

Greek affiliation (dummy coded; member of fraternity or sorority = 1, not a member of a fraternity or sorority = 2), it was necessary to control for these variables. Also, because there was a significant difference in alcohol consumption between student participants who had a matching parent and those who did not, it was necessary to control for this variable (dummy coded; student has a matching parent = 1, student does not have a matching parent = 2). The three dimensions of parent–child alcohol communication based on students' reports, and as determined by the EFA conducted for RQ2 (A), were entered in Step 2: the negative aspects of drinking, rules and sanctions, and benefits of drinking. Student alcohol consumption served as the dependent variable. Results indicated that as a whole the hierarchical regression model accounted for 13.4% of the variance in students' consumption, R^2 = .17, adjusted R^2 = .13, F(8, 174) = 4.52, p < .001 (see Table 5 for complete regression results). However, further results indicated that the three communication variables did not predict students' alcohol consumption over and above the control variables.

A second regression was conducted to determine how each predictor variable associated with students' experience of negative consequences related to their alcohol consumption. Again, the control variables were entered in Step 1, followed by the three dimensions of parent–student alcohol communication based on students' reports. Negative consequences was entered as the dependent variable. The final model failed to significantly predict students' negative consequences related to their drinking, R^2 = .08, adjusted R^2 = .04, F(8, 174) = 1.91, p = .06 (Table 6).

RQ3 (B) asked about the association between the type of alcohol communication topic, as reported by parents, and students' dangerous drinking. A hierarchical multiple regression analysis was employed in which the control variables—student sex, year of college, student race, and Greek affiliation—were entered into the first block. The parent communication dimensions, determined by the EFA conducted for RQ2 (B), were entered in Step 2: negative aspects of drinking, drinking in moderation, and rules. The student alcohol consumption composite was entered as the criterion variable. Results indicated that the hierarchical regression model accounted for 20.2% of the variance in students' alcohol consumption, R^2 = .24, adjusted R^2 = .20, F(7, 143) = 6.42, p < .001 (see Table 7 for complete regression results). The four control variables significantly accounted for 13.8% of the variance in student drinking, R^2 = .16, adjusted R^2 = .14, F(4, 146) = 7.01, p < .001. The alcohol communication dimensions based on parents' reports added 7.8% to the variance accounted for in the dependent variable, ΔR^2 = .08, F(3, 143) = 4.89, p = .003. The standardized coefficients in the final model showed that Greek affiliation (β = −.22, p = .004), negative aspects of drinking (β = .24, p = .01), and rules (β = −.20, p = .02) were significant predictors of student drinking.

To determine how parents' three dimensions of alcohol communication associated with students' experience of negative consequences, another hierarchical multiple regression

Table 7. Hierarchical multiple regression results: predicting student alcohol consumption using parent reports of alcohol communication topic types (N = 151).

Model variables	Model R^2/Adjusted R^2	B	SE B	β
Step 1	.16/.14			
Constant		1.25	.41	
Sex		.28	.15	.15
Year in college		−.10	.07	−.11
Race		−.07	.03	−.18*
Greek affiliation		−.68	.17	−.31**
Step 2	.24/.20			
F1: Negative aspects		.13	.05	.24**
F2: Drinking in moderation		.06	.06	.08
F3: Rules		−.12	.05	−.20*

Note. Total R^2 = .24, adjusted R^2 = .20, F(7, 143) = 6.42, p < .001.
*p < .05; **p ≤ .01.

Table 8. Hierarchical multiple regression results: predicting student negative consequences using parent reports of alcohol communication topic types (N = 151).

Model variables	Model R^2/Adjusted R^2	B	SE B	β
Step 1	.06/.04			
Constant		34.07	4.49	
Sex		2.61	1.63	.13
Year in college		−.22	.77	−.02
Race		−.47	.32	−.12
Greek affiliation		−4.22	1.85	−.18*
Step 2	.11/.07			
F1: Negative aspects		1.34	.56	.23*
F2: Drinking in moderation		.15	.63	.02
F3: Rules		−.61	.54	−.10

Note. Total R^2 = .11, adjusted R^2 = .07, F(7, 143) = 2.57, p = .02.
*p < .05; **p ≤ .01.

was conducted. The final model accounted for 6.8% of the variance in students' negative consequences, R^2 = .11, adjusted R^2 = .07, F(7, 143) = 2.57, p = .02 (see Table 8). The control variables significantly accounted for 3.7% of the variance in the dependent variable, R^2 = .06, adjusted R^2 = .04, F(4, 146) = 2.45, p = .049. The parent communication dimensions only approached significance, failing to add to the variance accounted for in students' negative consequences: ΔR^2 = .05, F (3, 143) = 2.63, p = .05. In the final model there was just one significant predictor: the negative aspects of drinking, β = .23, p = .02.

Discussion

A primary goal of this project was to explore the content and frequency of parent–student alcohol communication. Results suggest such communication has various dimensions, including negative aspects of drinking, rules (or rules and sanctions, according to the student data), drinking in moderation, and benefits of drinking. Parents discussed the negative consequences of drinking most often, focusing primarily on drunk driving and academics, which was consistent with extant research (Baxter et al., 2009; Boyle & Boekeloo, 2009; Miller-Day & Dodd, 2004). Benefits of drinking were discussed the least. Parental rule setting about college students' alcohol use, particularly zero-tolerance rules, was not widespread and was found to be much less frequent in this study than in previous work (Abar et al., 2012; Baxter et al., 2009). The low frequency of discussions regarding parental rules against alcohol use could be cause for concern, given their potential protective influence, which is discussed next.

The second major goal of this study was to examine how the content of parent–child alcohol communication associated with college students' dangerous drinking. Just one communication variable had a significant, negative association with students' consumption: parents' reports of discussing rules against use. This finding is consistent with previous research regarding parents' no-tolerance messages (Abar et al., 2012; Miller-Day, 2008). It is also consistent with research on parenting styles, which has found that having a permissive parent can be a risk factor for drinking problems, whereas having an authoritative parenting style, which rule setting is a part of, can help deter both younger adolescents' and emerging adults' substance use (Baumrind, 1991; Patock-Peckham, Cheong, Balhorn, & Nagoshi, 2001; Patock-Peckham & Morgan-Lopez, 2006; Stephenson, Quick, Atkinson, & Tschida, 2005). The students' rules dimension of alcohol communication was not a significant predictor of drinking outcomes. This could be due to the inclusion of sanctions items in the students' rules dimension (based on the EFA). Previous research has found threatening punishment for substance use was positively associated with students' alcohol consumption (Miller-Day, 2008). As such, the sanction items and rule items in the student factor could be canceling each other out. Further analysis examining rules and sanctions as separate variables is needed to determine whether this is a valid interpretation.

The present study also found that parents' reports of the negative aspects of drinking was a positive predictor of students' consumption and negative consequences. The positive relationship between such discussions and students' drinking outcomes may seem counterintuitive, yet the results are consistent with Boyle and Boekeloo's (2009) study, from which many of the survey questions were drawn. As Boyle and Boekeloo pointed out, such findings could be a matter of parents talking to their children after the alcohol use had become apparent; additionally, heavier drinking students might be interpreting talks about the negative consequences of alcohol use as conditional endorsement of drinking. It is also possible that emerging adults perceive discussions of negative consequences as unrealistic fear appeals or attempts to manipulate them and, in turn, respond by ignoring their parent's message or rebelling against it (Weber, Dillow, & Rocca, 2011; Witte & Allen, 2000). The various possible interpretations of these results highlight the importance of future longitudinal research and experimental designs to help determine cause–effect relationships, as well as further qualitative research to explore how students perceive their parents' alcohol messages and why.

While the negative aspects of drinking factor based on parents' reports was a predictor of students' alcohol outcomes, the dimension based on students' reports was not. One possible explanation is that of the 32 items included in the student EFA variable, many were not often discussed. When only the most frequently discussed alcohol topics were considered, students' reports of parent–child alcohol communication did significantly predict students' drinking outcomes (Menegatos & Lederman, 2013). Parents' minimal discussion

of risks beyond drunk driving and academics could be problematic, given the consequences many students face. For example, the co-occurrence of alcohol and sexual activity is pervasive on college campuses, posing a serious health threat, particularly to women (Abbey, 2002; Paul, McManus, & Hayes, 2000). Yet students reporting frequent conversations with parents about the risks of being taken advantage of sexually or taking advantage of another were in the minority. The narrow scope of parents' frequent alcohol messages might be associated with limited knowledge of the risks or self-efficacy concerns regarding their communication skills. Future research should investigate when and why parents discuss specific topics over others, which, as discussed next, could contribute to theory development in a line of research that is typically atheoretical.

One line of research that might help inform theory development regarding parental influences on college student drinking is Baumrind's (1991) parenting styles, mentioned earlier within the context of rule setting. It is possible that one's parenting style determines the alcohol topics one discusses and/or the frequency of such discussions. A study conducted by Askelson, Campo, and Smith (2012) lends credence to this idea, as they found that having an authoritative parenting style predicted the sexual health topics mothers discussed with their teen and preteen daughters. Given the responsive nature of the authoritative parenting style, it is possible that emerging adults of authoritative parents are more likely to talk with their parents about alcohol and to care what their parents think, or that authoritarian parents take rule setting too far and threaten sanctions, attenuating the potential protective influence of rules. Future college drinking research should investigate parenting styles to determine whether they predict the frequency and content of alcohol messages exchanged between parents and their college student children.

Results of the present study have practical implications for the development of parent–based interventions. Perhaps most important, the findings suggest that blanket suggestions for parents to talk to their children about alcohol might be counterproductive—the content of those talks seems to matter. Rather than expressing permissive attitudes toward drinking, parents should set rules against it in an authoritative manner. Stephenson et al. (2005) suggested tailoring parent prevention campaigns based on parenting styles, creating campaign messages for authoritative parents that reinforce the substance use deterrence strategies they likely are already employing, and creating campaign messages designed to motivate change to a more authoritative style for parents who practice other parenting styles. The present study, as well as previous research on authoritative parenting styles (Askelson et al., 2012; Baumrind, 1991; Patock-Peckham et al., 2001; Patock-Peckham & Morgan-Lopez, 2006), lends credence to the idea of Stephenson et al. Additionally, given the narrow scope of the alcohol topics discussed between parents and their emerging adults in the present study, it is likely that parents need to be educated about the frequency and severity of negative consequences of college drinking beyond that of drunk driving and academic problems. However, given the positive associations between parental discussions of the negative aspects of drinking and students' drinking outcomes, it would be premature—and possibly even harmful—to encourage parents to increase their communication regarding additional negative consequences. In short, additional research is needed investigating the relationships between college students' drinking outcomes, the content and frequency of parent's alcohol messages, students' interpretation of those messages, and parenting styles.

It is also important to note that while some of the communication variables investigated in this study predicted students' drinking outcomes, the unique variance explained by these variables was relatively low. This suggests that while parents can seemingly have an impact on their college students' dangerous drinking, there are many other factors that influence risky alcohol use. College drinking is a complex issue influenced by individual, peer, family, college, and community-level factors; as such, the NIAAA (2002) and the U.S. Department of Health and Human Services (U.S. DHHS, 2007) have stressed the importance of multileveled, research-based prevention programs. Thus, parent-based prevention and/or intervention programs will likely need to be utilized in conjunction with alcohol programming geared toward individual students and their peers.

This investigation highlights the need to better understand the multidimensional nature of the content of parent–student alcohol communication (Miller-Day & Dodd, 2004; Miller-Day & Kam, 2010). As such, an important contribution of this project was the use of a new alcohol communication survey. Compared to measures used in previous studies, the survey employed here was fairly broad in scope, allowing for exploration and description of various alcohol communication dimensions. While the general purpose of this project was not to test the psychometric properties of a survey, questions were drawn and/or adapted from extant college drinking research and revised based on feedback from undergraduate research assistants in an attempt to demonstrate face validity and content validity. Additionally, the results provided preliminary evidence of the survey's predictive validity in regard to students' drinking outcomes. An issue, however, was the differing factor structures for parents and students. In light of the exploratory nature of the EFAs, additional research is needed so that the survey instrument can be refined and confirmatory factor analyses conducted (Costello & Osborne, 2005). The empirical data produced in this study serve as a strong starting point in the future development of a valid and reliable alcohol communication scale for college students and their parents.

Limitations of the present study include the use of a cross-sectional design and retrospective reports of parent–child alcohol communication. Additionally, mothers were overrepresented, making up almost 74% of parent participants. This could be an indication that mothers are more likely than fathers to talk to their late adolescents about drinking, which would be consistent with extant research (Miller-Day & Dodd, 2004). Finally, the study was conducted with students between the ages of 18 and 25 who attended a large university; as such, the findings might not generalize to other student populations that include older students or those attending smaller and/or regional universities. Despite these limitations, the results of this study indicate health

communication scholars are well poised to contribute to the college drinking literature in ways that have practical implications for parents and health practitioners.

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