

## **Student-Generated Protective Behaviors to Avert Severe Harm Due to High-Risk Alcohol Consumption**

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*High-risk alcohol consumption is a significant problem on college campuses that many students see as a rite of passage in their development into adulthood. Developing effective prevention campaigns designed to lessen or avert the risks associated with alcohol consumption entails understanding how students perceive harmful consequences as well as the ways they protect themselves while drinking. This study used survey research to determine what undergraduate students perceived to be the most severe alcohol-related harms and the protective behaviors that they thought would be effective at averting those harms. Results showed that students saw forced sex as the most severe alcohol-related harm, and the most commonly described protective behavior was personal responsibility. Implications of these findings for campus-focused health communication strategists and directions for future research are discussed.*

Numerous communication campaigns have sought to prevent widespread excessive drinking on college campuses across the nation (e.g., Garvin, Alcorn, & Faulkner, 1990; Lederman

et al., 2001; Thombs & Hamilton, 2002). These efforts have produced some progress in diminishing the problem; however, many students continue to take part in high-risk alcohol consumption associated with what they perceive to be a rite of passage into adulthood. According to statistics from the fall 2007 National College Health Assessment (NCHA) survey, 29% of college females and 41.9% of males reported partaking in high-risk drinking (five or more drinks in a row within a single sitting) at least once within the previous 2 weeks (American College Health Association, 2008). Compared with all college drinkers, the greatest proportion of excessive drinking occurs among those 18 to 20 years of age (Serdula, Brewer, Gillespie, Denny & Mokdad, 2004). This is because approximately 90% of alcohol consumed by those under the age of 21 occurs during heavy episodic, or high-risk, drinking (Office of Juvenile Justice and Delinquency Prevention, 2001).

Research has shown that extreme drinking levels tend to remain stable within individual college campuses, but that there is variation

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among college campuses across the country (Wechsler et al., 2002). One study found that college freshmen who did not begin extreme drinking in their first year were more likely to attend commuter schools, women-only colleges, and schools with a Protestant religious affiliation. Those who did begin extreme drinking were more likely to attend Division 1 NCAA schools and schools seen as “very competitive” or higher (Weitzman, Nelson, & Wechsler, 2003). Other research found that college extreme drinking prevalence was highest in Northeastern and North-Central states, and lowest in Western states (Nelson, Naimi, Brewer, & Wechsler, 2005).

Such high-risk drinking unsurprisingly brings with it negative consequences, referred to as “harms” in this study. Research dating as far back as the 1950s has examined the relationship between drinking and its potential harms for college students (Straus & Bacon, 1953), and many studies since have identified the different consequences of high-risk drinking in college (CORE Institute, 2005; Perkins, 2002; Porter & Pryor, 2007). These harms can be prevalent and are serious; according to the CORE Institute (2005), of the students who reported consequences as a result of drinking, 62.5% had experienced a hangover within the past year, 38.1% did something they later regretted, 26.3% had driven a car while under the influence of alcohol, and 15.5% had been hurt or injured. The NCHA also collects data about students’ reported drinking consequences: 14.2% of students who reported drinking had engaged in unprotected sex, 26.2% reported forgetting where they were or what they had done, and 6.5% were involved in a fight (American College Health Association, 2008). Many of these harms could be lessened or avoided by using protective behaviors when consuming alcohol, which Martens et al. (2004) define as “behaviors that individuals can engage in while

drinking alcohol in order to limit negative alcohol-related consequences” (p. 390).

Because of the seriousness of these harms and the persistence of high-risk drinking practices, there is an increasing emphasis placed on reducing the dangerous consequences of heavy drinking on college campuses. Health education and communication specialists are seeking to develop more effective harm reduction strategies. A key prerequisite in the process of designing successful prevention programs and campaigns is to first gain a fundamental understanding of the drinkers’ conceptions of the risks and the various protective behaviors that can be performed.

This study sought to examine what college students perceive to be the most severe alcohol-related harms and the behaviors that they believe can be used to avert those harms. A review of previous research about harms from drinking and students’ protective behaviors is presented, followed by the research questions and an overview of the research process. Next, the results are presented, which include a ranked list of student’s perceptions of the most severe harms associated with drinking and ranked lists of the protective behaviors used to avert those harms. A discussion of these results is followed by a review of the limitations of the study as well as implications for future practice and research.

## NEGATIVE CONSEQUENCES OF HIGH-RISK DRINKING

Surveys at schools across the country continue to reveal that college students put themselves at risk for harm with the amount and frequency of their alcohol consumption (DuRant et al., 2008; Johnston, O’Malley, Bachman, & Schulenberg, 2007; O’Brien et al., 2006; Porter & Pryor, 2007). A large variety of negative consequences have been associated with heavy drinking, including hangovers, sexual assault,

memory loss, violence, injury, death (CORE Institute, 2005), alcohol poisoning, sexually transmitted diseases, unintended pregnancy, children born with fetal alcohol syndrome, stroke, and neurological damage (Centers for Disease Control and Prevention, 2008). Neighbors, Oster-Aaland, Bergstrom, and Lewis (2006) note that, for college students, heavy episodic drinking typically causes short-term consequences rather than delayed outcomes, such as liver damage. Many of the consequences, such as a hangover or getting into a fight, result from a single episode of high-risk drinking.

To assess these consequences, the NCHA survey asks college students whether they have experienced any of the following harms during the past year: Physically injuring themselves, physically injuring another person, being involved in a fight, doing something they later regretted, forgetting where they were or what they did, having someone use force or threat of force to have sex with them, having unprotected sex, getting into legal trouble, or damaging a relationship with a friend, family member, or significant other (American College Health Association, 2008). Despite the large number of students who engage in heavy drinking and the numerous negative consequences that result from their alcohol consumption, Lewis and Thombs (2005) found that most students perceived no risk from drinking. They also found that perceptions of risk tend to have negligible correlations with measures of alcohol involvement after controlling for other variables. Oswalt, Shutt, English, and Little (2007) found that, when students who violated institutional rules or government laws were required to participate in alcohol prevention interventions, they initially showed a decrease in quantity and frequency of alcohol use and increased perceived risk. Three months after the intervention, however, only increased perceived risk continued as a benefit

of the intervention. These results point to the importance of teaching college students to use effective protective behaviors to diminish and control risk if they do engage in alcohol consumption.

## PROTECTIVE BEHAVIORS

Because many students have not altered their alcohol consumption to reduce the risks associated with heavy drinking, it is important to examine protective behaviors, especially behaviors that are not centered on alcohol consumption, which may be used to protect against these harms. In this study, consistent with Martens et al.'s (2004) definition, we define protective behaviors as any acts that help to limit negative consequences resulting from alcohol consumption. Protective behavioral strategies have been linked with the reduction of harmful consequences from heavy drinking (Benton et al., 2004; Haines, Barker, & Rice, 2006; Martens et al., 2004). Therefore, although the most important goal that remains is to persuade students to reduce their overall alcohol overconsumption, a legitimate secondary goal is to identify and persuade students to use protective behaviors that reduce the likelihood of harm from heavy drinking.

Because of the importance of protective behaviors in avoiding harmful alcohol-related consequences, studies have begun to identify certain protective behaviors that are used by students (Atkin, Smith, Klein, Glazer, & Martell, 2008; Benton et al., 2004; Haines et al., 2006; Martens et al., 2005). Many of the protective behaviors that have been identified center around personal alcohol consumption, such as "alternating alcohol with nonalcoholic beverages," "avoiding drinking games," and "determining, in advance, not to exceed a set number of drinks" (Benton et al., 2004; Haines et al., 2006; Martens et al., 2005).

Studies typically identify only two or three behaviors that are not directly related to alcohol consumption, such as “only drinking in safe environments” or “hanging out with trusted friends” (Benton et al., 2004).

The NCHA has a standard list of 10 protective behaviors that it identifies, asking participants to indicate which of them they use (American College Health Association, 2008). A more complete list of protective behaviors was generated by Atkin et al. (2008) by asking a representative sample of students to list the protective behaviors that they actually use. The study first measured the frequency with which students used protective behaviors on a standard list that had been created previously, and then generated a more complete list of protective behaviors by using an open-ended technique. The responses were coded into an array of categories, which were then grouped into a set of higher-order dimensions that emerged from the behaviors generated by the students. This study identified a total of 43 protective behaviors used by college students to avert harm when drinking. The top two most common responses had not been identified previously in the literature (staying with the same group of friends all night and assuming personal responsibility to drink moderately).

Although the research to date has provided information on the protective behaviors that college students use, two key issues remain: How severe do students perceive certain harms to be, and which protective behaviors do they use in specific situations to avoid different types of severe harms? Further study is needed to assess the perceived severity of various potential harms and the protective behaviors students believe could lessen or avert those harms.

Specifically, the current study addresses the following research questions:

1. What is the ranking of the most severe harms students perceive that result from high-risk drinking?

2. What protective behaviors do students perceive will lessen or avert harms that result from high-risk drinking?

## METHOD

### Participants

A web-based survey ( $n = 891$ ) was conducted during November and December of the fall 2006 semester at a large Midwestern university, with a response rate of 41.8%. The Office of the Registrar drew a representative sample of the total student population for this study. The demographic characteristics of the sample were similar in most respects to the university's student body. The proportion of males in the survey was 39.1% versus 45.5% in the population. 79.6% of the sample was Caucasian versus 74.4% in the population, 4.8% of the sample was African American versus 7.7% in the population, 3.1% of the sample was Hispanic versus 2.9% in the population, 1% of the sample was American Indian versus 0.7% in the population, and 6.8% of the sample was Asian Pacific Islander versus 5.2% in the population. These percentages sum to less than 100% because some students chose not to identify their ethnic origin, both in our survey and for the university. The distribution by year in school was quite similar (22% freshmen in the sample compared with 25.4% in the population; 23% sophomores in the sample and 22.7% in the population; 23% juniors in the sample and 24.9% in the population; and 32% seniors in the sample versus 27.1% in the population). The main demographic categories that were slightly underrepresented were males and African Americans.

### Instrumentation

The survey that students completed asked a variety of questions related to their general drinking behavior, their drinking behavior at specific “celebration” events on campus, and

their reactions and exposure to a campus-wide alcohol reduction campaign that was ongoing since 2002. The questions relevant to this study asked students to note which of nine possible harms associated with drinking alcohol they perceived to be most severe, and to report what they or other students could do to protect themselves from that harm. For the question pertaining to severe harms, students were given a list of harms used in the NCHA surveys (physically injuring themselves, physically injuring another person, being involved in a fight, doing something they later regretted, forgetting where they were or what they did, having someone use force or threat of force to have sex with them, having unprotected sex, getting into legal trouble, or damaging a relationship with a friend, family member, or significant other), and were asked to choose which one they thought was the most serious. Then, they were asked in an open-ended question what things they or others could do to prevent that harm from occurring, or, in other words, the protective behaviors they could use to lessen or avert that potential harm.

Previously established protective behaviors categories from Haines et al. (2006), in addition to categories created by Atkin et al. (2008), were used as a basis for coding the open-ended responses. Additional categories were also created if they appeared frequently in the participants' responses. A complete list of the 45 categories used to code responses can be found in Appendix A. Four research assistants were trained as coders to analyze participant responses. After all coders completed the first 10% of responses, Guetzgow's U and percentage of agreement were calculated to assess reliability. Guetzgow's U was .008, indicating high agreement in unitizing responses. The percentage of agreement was 88%, indicating that the research assistants coded the open-ended responses reliably. The coders then resolved any differences that they had when

coding. After determining that there was acceptable unitizing and coding reliability, the coders continued to code the rest of the open-ended responses individually.

## RESULTS

### Research Question 1

The first research question was posed to determine the ranking of the most severe harms students perceived to result from high-risk drinking. Based on the answers to the question that asked students to identify what they thought was the most severe harm, a ranked list of the five most severe harms was generated. In order, they are: (a) having someone use force or threat of force to have sex; (b) getting into legal trouble; (c) physically injuring another person; (d) having unprotected sex; and (e) damaging a relationship with a friend, family member, or significant other. The specific frequencies of these identified harms are found in Table 1.

TABLE 1.  
Ranking of Severe Harms  
Identified by Students

Severe Harms	% Who Ranked Harm as #1
1. Forced Sex	32.5
2. Legal Trouble	15.3
3. Physically Injuring Another Person	14.5
4. Unprotected Sex	8.4
5. Damage Relationship	8.3
6. Regret Something You Did	5.3
7. Physically Injuring Yourself	4.8
8. Forgetting Where You Were or What You Did	3.1
9. Getting Involved in a Fight	1.5

TABLE 2.

## Top 5 Protective Behaviors to Prevent Forced Sex

Protective Behavior	%
1. Stay with same group of friends.	26.1
2. Personal responsibility.	20.5
3. Do not party with strangers or by yourself.	10.0
4. Do not travel alone/arrange for escort.	8.5
5. Watch out for companions.	5.1

## Research Question 2

The second research question asked what protective behaviors students perceived would lessen the harms that result from high-risk drinking. The coded responses to the open-ended question were analyzed on different levels. First, for each of the five most severe harms identified, a list of the top protective behaviors used to lessen or avert that particular harm was generated. For example, for those that identified the most severe harm as forced sex, the top five protective behaviors they identified were: (a) stay with the same group of friends, (b) personal responsibility, (c) do not party with strangers or by yourself, (d) do

TABLE 4.

## Top 5 Protective Behaviors to Prevent Physically Injuring Another Person

Protective Behavior	%
1. Personal responsibility.	31.4
2. Avoid confrontations.	11.1
3. Do not drink and drive.	10.5
4. Do not drink.	7.2
5. Stay with same group of friends.	5.9

TABLE 3.

## Top 5 Protective Behaviors to Prevent Legal Trouble

Protective Behavior	%
1. Personal responsibility.	17.7
2. Evade legal trouble by acting responsibly.	17.7
3. Avoid traveling or going places.	6.1
4. Choose not to drink.	4.4
5. Use a designated driver.	3.9

not travel alone/arrange for escort, and (e) watch out for companions. The rankings and frequencies for the protective behaviors used to avert each of the five most severe harms can be found in Tables 2 through 6.

The open-ended protective behaviors question was also analyzed to produce a ranked list of the top five overall behaviors students identified to avert harms across situations. They are, in order: (a) personal responsibility (e.g., “Know your drinking limit”), (b) stay with the same group of friends (e.g., “Make sure to stay with friends and watch out for each other”), (c) do not party with strangers or by yourself (e.g., “Know the people you are with

TABLE 5.

## Top 5 Protective Behaviors to Prevent Unprotected Sex

Protective Behavior	%
1. Personal responsibility.	31.9
2. Use condoms.	19.8
3. Do not party with strangers or by yourself.	7.7
4. Do not drink.	6.6
5. Stay with same group of friends.	6.6

and always stay with a friend”), (d) choose not to drink (e.g., “Avoid drinking”), and (e) watch out for companions (e.g., “Keep an eye on friends”). The frequencies and complete ranked list of protective behaviors identified to avert severe harms can be found in Table 7.

**DISCUSSION**

This study builds on previous research by examining college students’ perceptions of the most severe alcohol-related harms as well as their perceptions of what behaviors could be used to avert those harms. Thus, it provides context-specific protective behaviors, showing the different tactics students perceive could be used to protect themselves from specific harms and harms in general.

Perhaps the most significant finding is that students believe personal responsibility to be the ideal protective behavior for averting harms. It was ranked as the number one protective behavior across all of the possible harms listed, and it was number one on the list of protective behaviors to avert four out of the top five most severe harms ranked by students. Staying with the same group of friends was the second highest in the ranking of protective behaviors for averting all harms. These results

are similar to those found by Atkin et al. (2008) and Hembroff, Martell, and Atkin (2002), who found staying with the same group of friends to be the highest general protective behavior listed by respondents across contexts. Personal responsibility was second in the Atkin et al. (2008) study. The fact that so many students perceive personal responsibility to be the best way to avert harms is somewhat disconcerting in the context of extreme drinking, because the ability to self-monitor significantly decreases as intoxication increases. This suggests that students who do engage in extreme drinking may not be taking the most effective measures to protect themselves if they are simply relying on their own personal responsibility. It is promising, however, on several fronts. First, it is promising that the majority of students who are at a critical developmental juncture into adulthood recognize that they must accept personal responsibility for their behavior; second, it is promising that many students listed staying with the same group of friends as a way to avert harms. This behavior is easily defined, easy to implement, and has potential to prevent a wide array of harms because others present not only communicate to help the drinker make good decisions, but also provide safety in numbers.

The information gathered from this research is especially valuable to health communicators who are seeking to reduce alcohol-related harm. If it is known what outcomes students are trying to avoid, then messages can be created that are centered specifically on those anticipated harms. It is possible to separate the severe harms discussed in this study into the three, non-mutually exclusive categories of self-inflicted harm, harm inflicted by others, and harm inflicted on others:

- *Self-inflicted harms*: legal trouble, damage relationship, regret something you did, unprotected sex, physically injuring yourself,

**TABLE 6.**

**Top 6 Protective Behaviors to Prevent Damaging Relationships**

<b>Protective Behavior</b>	<b>%</b>
1. Personal responsibility.	54.3
2. Avoid confrontations.	5.0
3. Do not drink.	3.7
4. Determine not to exceed set limit.	3.7
5. Keep track of how many drinks you have had.	2.5
6. Have a friend let you know when you've had enough.	2.5

TABLE 7.  
Protective Behaviors Identified Across All Severe Harms

Protective Behavior	%	Protective Behavior	%
1. Personal responsibility.	32.3	22. Stay at a friend's house or safe near-by house to avoid unsafe ride/walk.	0.4
2. Stay with same group of friends.	13.0	23. Walk home with friends.	0.4
3. Do not party with strangers or by yourself.	5.7	24. Plan ahead.	0.4
4. Choose not to drink.	4.5	25. Carry a safety device.	0.3
5. Watch out for companions.	3.7	26. Avoid partying or bars.	0.3
6. Arrange for an escort/do not travel alone.	3.5	27. Drink only one kind of alcohol.	0.2
7. Evade legal trouble by acting responsibly in public.	3.3	28. Avoid excessive drinking situations and companions.	0.2
8. Avoid confrontations.	2.8	29. Eat after drinking.	< 0.1
9. Have a friend let you know when you have had enough.	2.0	30. Drink water before and after.	< 0.1
10. Do not drink and drive.	2.0	31. Avoid drinking shots.	< 0.1
11. Use condoms.	1.7	32. Do not drink if using drugs or medications.	< 0.1
12. Determine, in advance, not to exceed a set number of drinks.	1.5	33. Others	13.3
13. Use a designated driver.	1.4	Eat before and/or during drinking.	0.0
14. Watch your drinks/Do not take alcohol from someone you do not know.	1.4	Avoid drinking games.	0.0
15. Avoid traveling or going places.	1.2	Drink an alcohol look-alike.	0.0
16. Be aware of your surroundings.	1.1	Carry a cell phone.	0.0
17. Only party in a comfortable environment.	0.9	Limit the money you carry.	0.0
18. Keep track of how many drinks you are having.	0.8	God.	0.0
19. Use a taxi.	0.6	Stop drinking at set time.	0.0
20. Pace your drinks to one or fewer per hour.	0.5	Dance or get other exercise.	0.0
21. Alternate nonalcoholic with alcoholic beverages.	0.4	Leave itinerary with other friend who is staying in.	0.0
		Stay awake/do not pass out.	0.0
		Limit amount of time allocated to drinking.	0.0
		Make sure I have a way back home.	0.0



forgetting where you were or what you did, and getting involved in a fight.

- *Harms inflicted by others*: forced sex.
- *Harms inflicted on others*: damage relationship, unprotected sex, and getting involved in a fight.

It is important to note that these are tentative categorizations that are not exhaustive, and would ideally be further investigated by future research. However, this grouping illuminates some interesting findings. The only harm found in the “harms inflicted by others” category is forced sex, which is also the most severe harm ranked by students. This suggests that, when students drink, they see the behavior of others as the most significant threat to their safety. This does not fit in well with the fact that personal responsibility was the most cited protective behavior in general, and was cited 20.5% of the time as a way to avert forced sex; after all, an individual can take every precaution to be responsible for themselves, but they still will not have much control over the actions of others. This information could be used to argue for more socially based protective behaviors, such as staying with a group of friends, who can offer some degree of protection against harms inflicted by others.

Another interesting finding of this research is that eight of the top 10 protective behaviors students perceived would avert harms were not included in the original NCHA list of protective behaviors. The protective behavior ranked third in the results (Do not party with strangers or by yourself) had not been identified by any previous research. These findings further support the results of Atkin et al. (2008), who also found that there are additional protective behaviors used by students which have not been identified previously. This shows the need for continued research on protective behaviors, not only

because there may be more that have yet to be uncovered by research, but also because students’ use of these behaviors may change over time or they might differ by type of campus or region of the country.

## IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

Health communicators and practitioners can help to prevent potential negative consequences of alcohol consumption by knowing which harms students see as severe and the protective behaviors students believe will lessen or avert these harms. This information can be used to generate health messages based on several theoretical underpinnings. For example, knowing which protective behaviors students recommend in specific situations can be used to create social norms campaign messages (Haines & Spear, 1996; Perkins & Berkowitz, 1986; Perkins & Craig, 2006), which are based on behaviors that are engaged in by the majority. Some universities have successfully begun to use such social norms campaigns to encourage protective behaviors (Higher Education Center, n.d.; Michigan State University, 2008; National Social Norms Institute, n.d.). Specifically, normative messages could feature the two protective behaviors that are most prevalently cited in this study: Personal responsibility and staying with the same group of friends. The protective group concept is readily understood, but personal responsibility needs to be more clearly operationalized and conveyed in the messages that are disseminated. Also, social norms messages about potential harms and protective behaviors could be used specifically to target a population of high-risk drinkers, whose normative behaviors are generally dangerous and who may not believe social norms messages that tell them that most of their peers drink moderately; this, in turn, means that they might better respond to

messages that emphasize ways that they can protect themselves. This approach has shown promise at Michigan State University, where heavy drinkers have shown steady increases in their use of protective behaviors since the implementation of their social norms campaign (Michigan State University, 2008).

Alternatively, messages could be created based on the Extended Parallel Processing Model (Witte, 1992, 1994; Witte, Meyer, & Martell, 2001), which discusses threat appeals. According to the Extended Parallel Processing Model, a threat is composed of two underlying components: Perceived severity, which refers to beliefs about the magnitude of the threat, and perceived susceptibility, which refers to a person's beliefs about their risk of experiencing the threat. The model also incorporates the idea of efficacy, which takes two forms: Response efficacy, or the effectiveness of a recommended response in averting the threat, and self-efficacy, or the individual's ability to enact the recommended response. The Extended Parallel Processing Model says that a person will adopt a recommended response if they see the threat as severe and as something they are susceptible to, and if they see the recommended action as something that they can do with relative ease that will be effective. Thus, using the data from this study, messages could be created centered on negative consequences that can befall students if they do not use certain protective behaviors. Messages citing harms that students have rated as most serious (e.g., forced sex, legal trouble, injuring others) should emphasize the susceptibility component to maximize motivation to perform protective acts. Moreover, threat appeals should be accompanied by efficacy-enhancing message content that recommends specific threat-averting behaviors, particularly actions that are represented as relatively easy to perform.

It is important to point out that this study is a descriptive and formative analysis;

thus, caution should be exercised when generalizing from these results. The purpose of this study was not to determine the effect of these protective behaviors, but rather to identify them and generate a list. To provide statistical data, the group of protective behaviors needs to be further tested. This research could determine who employs these protective behaviors and examine what kind of a difference these behaviors make when it comes to actually averting severe harms. Such information about the effectiveness of protective behaviors would be very useful in developing persuasive messages to encourage students to engage in them.

In conclusion, this research, although descriptive in nature, is a valuable part of the process of lessening alcohol-related harm on college campuses. The harms reported by students are prevalent and could lead to serious health, psychological, and/or social consequences. It is important for researchers to acknowledge that students may not always respond to anti-consumption messages, and should thus seek to encourage them to stay safe while drinking and avoid such harms. This formative research, by determining what students see as the most severe potential harms and their beliefs about what can be done to avert such harms, provides a starting point for future research to examine the reported use of such behaviors identified here and their effectiveness in reducing harm. Future research should also continue to examine the relationship of protective behaviors to the different types of harms: Self-inflicted harms, harms inflicted by others, and harms inflicted on others.

Studies and surveys of college students' alcohol use and experiences continue to use the standard list of nine protective behaviors provided by the NCHA. This study, along with other previous research (Atkin et al., 2008; Benton et al., 2004; Haines et al., 2006; Martens et al., 2005), points to the importance

of expanding that list to obtain a more accurate representation of the protective behaviors practiced by students. Future research should continue to examine protective behaviors to see if they change over time or by type of school or if there are more to be uncovered. Identifying the protective behaviors actually used by students is valuable for creating health messages; if information is conveyed in language they understand and the behavior encouraged is familiar or recognizable, the messages will likely be more personally relevant to the students. This is important, because

according to the Elaboration Likelihood Model, the perceived relevance of a message is a significant part of the motivation to process it, which is the first step towards behavior change (Petty, Rucker, Bizer, & Cacioppo, 2004). Thus, including student-generated protective behaviors in messages could significantly help the efforts to reduce alcohol-related harm on college campuses.

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APPENDIX.  
Protective Behavior Coding Scheme

Code	Protective Behavior	Description
1.	Alternate nonalcoholic with alcoholic beverages.	Do not drink only alcohol when drinking. Also drink other substances such as water in between.
2.	Determine, in advance, not to exceed a set number of drinks.	Set a limit as to how many drinks you will have.
3.	Choose not to drink alcohol.	Do not drink at all.
4.	Use a designated driver.	Have a sober person transport you.
5.	Eat before and/or during drinking.	Eat before or during drinking but this does not include after drinking.
6.	Have a friend let you know when you have had enough.	Have a friend watch out for you and not let you drink too much.
7.	Keep track of how many drinks you are having.	Know how many drinks you have had.
8.	Pace your drinks to 1 or fewer per hour.	Only 1 alcoholic drink per hour.
9.	Avoid drinking games.	Do not play drinking games such as beer pong (Beirut), flip cup, quarters, or drinking card games, etc.
10.	Drink an alcohol look-alike.	Drink a beverage that resembles an alcoholic beverage, to minimize inquiries such as "Why aren't you drinking?"
11.	Eat after drinking.	This includes going to restaurants after the bars or parties.
12.	Watch your drinks/do not take alcohol from someone you do not know.	This includes watching your drinks and making sure that no one puts anything in it. This also includes having someone you trust watch it. It also means not taking open containers from people that you do not know or only taking closed beer cans.
13.	Drink water before and after.	This involves drinking water before or after drinking but not during. Drinking water during should be coded as #1.
14.	Only party in a comfortable environment.	This includes only partying at friends' residences or places that you are familiar with. This has to do with the place you party at.
15.	Stay with the same group of friends all night.	This means hanging out with trusted friends whether it be all one sex or not. This has to do with who you are with.
16.	Drink only one kind of alcohol.	This means drinking only beer, only liquor or only wine.
17.	Carry a cell phone.	Carry a cell phone in case of an emergency.
18.	Taxi.	This can be either having enough money to take a taxi or having a taxi number with you.
19.	Personal responsibility.	This means knowing your own limit or when you have had enough. You are able to watch yourself.
20.	Stay at a friend's house or safe nearby house to avoid unsafe ride/walk.	This means partying at a friend's house or your own house so you do not have to worry about a driver. You stay over at that house after.
21.	You limit the money you carry.	Limiting the amount of money that you bring with you so you cannot drink too much.

*appendix continues*

APPENDIX. *continued*

<b>Code</b>	<b>Protective Behavior</b>	<b>Description</b>
22.	Do not drink and drive.	Either you walk or avoid drinking and driving. Maybe you are a designated driver.
23.	Condoms.	Have condoms or use protection when engaging in sexual activity. Bring them with you when you go out.
24.	Walk home with friends.	Walk home with friends to make sure that you make it home.
25.	Other.	Other.
26.	Carry safety device.	Have face spray or noisemaker available.
27.	Evade legal trouble by acting responsibly in public.	Do not exhibit behavior that attracts attention of police.
28.	Watch out for companions.	Prevent friends from risky consumption or harmful outcomes.
29.	Avoid traveling or going places.	Once you start drinking, stay in the same place.
30.	Avoid confrontations.	Avoid getting into fights (verbal or physical) with other people.
31.	Be aware of your surroundings.	Be aware of the environment you are in: know where you are, what time it is, who is around you, keep watch out for suspicious behavior.
32.	Avoid partying or bars.	Do not attend parties or bars (may still be drinker).
33.	God.	This includes any mention of religious beliefs.
34.	Arrange for an escort when going anywhere; do not travel alone.	Get trusted companions to accompany when going anywhere; use buddy system.
35.	Avoid excessive drinking situations and companions.	Avoid company of excessive drinkers and extreme drinking settings; leave party/bar before things get wild.
36.	Stop drinking at set time.	Cut off at specified hour or lengthy period of time before leaving event.
37.	Avoid drinking shots.	Do not do series of liquor shots.
38.	Dance or get other exercise.	Work off alcohol by dancing, walking, etc.
39.	Leave itinerary with friend who's staying in.	Make sure someone knows where you will be, and update when plans change.
40.	Stay awake/do not pass out.	Do not fall asleep soon after heavy drinking.
41.	Limit amount of time allocated to drinking.	Spend fewer hours or drink less frequently due to school or work demands.
42.	Do not drink if using drugs or medications.	Avoid mixing alcohol with your medications or drug use.
43.	Make sure I have a way back home.	Make sure that you plan ahead by figuring out some way of getting home (for more broad answers).
44.	Do not party with strangers or by yourself; only drink with people that you know and trust.	Make sure there is always someone else around that you know when you're at parties or drinking.
45.	Plan ahead.	Make sure you know where you're going ahead of time, know what time you plan on leaving, etc.

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