



Published in final edited form as:

*Prev Sci.* 2014 February ; 15(1): 85–93. doi:10.1007/s11121-012-0355-5.

## Spring Break versus Spring Broken: Predictive Utility of Spring Break Alcohol Intentions and Willingness at Varying Levels of Extremity

Dana M. Litt, Ph.D.<sup>1</sup>, Melissa A. Lewis, Ph.D.<sup>1</sup>, Megan E. Patrick, Ph.D.<sup>2</sup>, Lindsey Rodriguez<sup>3</sup>, Clayton Neighbors, Ph.D.<sup>3</sup>, and Debra L. Kaysen, Ph.D.<sup>1</sup>

<sup>1</sup>Department of Psychiatry and Behavioral Sciences, University of Washington, Box 354944 Seattle, WA 98195

<sup>2</sup>Institute for Social Research, University of Michigan, 426 Thompson St, Ann Arbor, MI 48106-1248

<sup>3</sup>Department of Psychology, University of Houston, 126 Heyne Bldg, Houston, TX 77204-5022

### Abstract

**Objective**—Within the domain of risk-related behavior, many times the decision to engage is not a product of premeditation or intention. The Prototype Willingness model was created to capture and explain the unintended element of risk behavior. The present study aimed to evaluate the importance of willingness versus intention, two important constructs within the Prototype Willingness model, in relation to Spring Break drinking behavior when assessed at both high and low extremities.

**Method**—College undergraduates ( $N = 275$ ) completed questionnaires prior to Spring Break regarding their anticipated Spring Break activities. Willingness and intention were assessed for different levels of risk. Specifically, participants indicated the extent to which they intended to (a) get drunk and (b) drink enough to black out or pass out; and the extent to which they were willing to (a) get drunk and (b) drink enough to black out or pass out. When classes resumed following Spring Break, the students indicated the extent to which they actually (a) got drunk and (b) drank enough to black out or pass out.

**Results**—Results demonstrated that when the health-related risk was lower (i.e., getting drunk), intention was a stronger predictor of behavior than was willingness. However, as the level of risk increased (i.e., getting drunk enough to black out or pass out), willingness more strongly predicted behavior.

**Conclusion**—The present study suggests that willingness and intentions differentially predict Spring Break alcohol-related behavior depending on the extremity of behavior in question. Implications regarding alcohol interventions are discussed.

### Keywords

Spring Break; alcohol use; prevention; intentions; willingness

---

Spring Break is a period of known high-risk drinking for college students. Even students who do not normally drink heavily are at risk for increasing their alcohol use behavior during this time (Greenbaum, Del Boca, Darkes, Wang, & Goldman, 2005). In particular,

students who travel with their friends engage in heavier alcohol use and experience more negative consequences than those who do not go on Spring Break trips (Grekin, Sher, & Krull, 2007; Lee, Lewis, & Neighbors, 2010; Lee, Maggs, & Rankin, 2006; Patrick & Lee, 2012). During Spring Break, as many as 37% of male and 25% of female college students in one sample engaged in heavy episodic drinking (i.e., 5+/4+ drinks for men/women within a two-hour period; Patrick, Morgan, Maggs, & Lefkowitz, 2011). Although these elevated drinking levels may not be specific to the Spring Break period, there may be specific and serious consequences associated with even temporary increases in drinking (Neal & Fromme, 2007).

Increased alcohol consumption is associated with increased risk of alcohol-related consequences. Negative effects of alcohol use, including passing out, are experienced by roughly 9% of Spring Break travelers (Lee et al., 2010). Among college students who consumed alcohol on Spring Break, 32% reported having a hangover, 15% reported losing control, 12% reported passing out, and 2% reported getting into trouble with the police (Patrick et al., 2011). These high levels of risk behaviors and consequences have led to a call for event-specific approaches to prevention and intervention (Neighbors et al., 2007). In order to intervene for specific events such as Spring Break, however, we need a greater understanding of student expectations regarding Spring Break behaviors and the extent to which they expect and hope to engage in heavy alcohol use.

Many students make preparations and form expectations for Spring Break well in advance. For example, one of the most important motivators for going on particular Spring Break trips is the desire for opportunities to drink alcohol (Sönmez et al., 2006). Students discuss these plans and expectations regarding alcohol use with their peers. Nearly 60% of college students formed an understanding with their friends about how much alcohol they would use; for example, 24% of students had mutual understandings with their friends that they would get drunk on Spring Break and 18% had understandings that they would drink but not get drunk (Patrick et al., 2011). Moreover, these understandings were predictive of alcohol use behaviors and consequences during Spring Break, even after controlling for level of alcohol use prior to Spring Break (Patrick et al., 2011). Despite the research that planning to drink over Spring Break is predictive of actual Spring Break alcohol consumption (Patrick & Lee, 2012), little is known about whether all Spring Break drinking behavior is planned. One possibility is that like many risk behaviors, not all Spring Break alcohol use is premeditated and planned. For example, students may plan to drink but not explicitly plan to get drunk or they may plan to get drunk but not plan to drink enough to black out or to pass out. Moreover, some Spring Break alcohol use may be better predicted by a willingness or openness to risk should the opportunity arise, rather than an explicit plan to engage in risky behavior. Determining if and how both planful and unplanned risk cognitions formed prior to Spring Break influence actual Spring Break alcohol use is an important step in developing prevention programs aimed at reducing risky Spring Break alcohol use and other high-risk specific events. In order to examine the predictive validity of specific cognitions related to risky alcohol use over Spring Break, it is helpful to frame the research question in terms of a specific model. The Prototype Willingness model provides a strong theoretical framework for considering Spring Break alcohol use, which may include both planned and unplanned behavior.

## The Prototype Willingness Model

The Prototype Willingness model (PW; see Figure 1; Gibbons, Gerrard, Blanton, & Russell, 1998; Gibbons, Gerrard, & Lane, 2003) is a modified dual-processing model designed to improve the predictive value of existing health behavior theories for health risk behaviors. Specifically, the PW model posits two pathways to health risk: a reasoned pathway and a

social reaction pathway. Within the PW Model, the reasoned pathway is conceptualized as being similar to the Theory of Reasoned Action (Fishbein & Ajzen, 1975), whereas the social reaction pathway relies on unplanned willingness, which varies as a function of perceived vulnerability, perceived descriptive norms, and prototypes (i.e., social images).

Research has suggested that with experience, decision-making shifts from a socially-based and reactive process to a reasoned process. Pomery and colleagues (2009) found that the primary antecedents of behavior shifted from willingness to intentions as young adults gained experience with the relevant behavior. Before they have had much experience, young adults are less likely to have intentions to engage in risky behavior. When asked to consider what they *might do* if given the opportunity, however, many of those young adults who have not thought about it seriously, acknowledged a willingness to engage in the behavior and this willingness is a significant predictor of their subsequent behavior. As experience with the behavior increases, young adults become more aware of what they are likely to do and when, and perhaps why they are doing it. As a result, intentions become better predictors of behavior than willingness. Although the model was originally created to explain adolescent risk behavior, research has indicated that the PW model, and specifically willingness, is still a strong predictor of various risk behaviors in college student and emerging adult samples (Pomery et al., 2009; Thornton, Gibbons, & Gerrard, 2002). Although this research contributed to our knowledge of how intention and willingness relate to risk behavior as experience increases, research has yet to examine how behavioral intention and behavioral willingness relate to alcohol use at varying levels of extremity. By definition, people tend to have less experience with extreme risk behaviors. Moreover, we would expect that individuals would have more experience with less extreme risk behaviors and, therefore, we would expect intentions to be a better predictor. However, for more extreme behaviors, which are less common, and with which individuals are less likely to have specific expectations about or experience, we would expect willingness to be a better predictor.

## The Present Study

The present study aimed to evaluate the importance of willingness versus intention in relation to Spring Break drinking behavior when assessed at two different extremities. Based on the assumptions of the PW Model and previous research suggesting that as experience with behaviors increase, intentions become better predictors of behavior when compared to willingness, it is expected that intentions will more strongly predict less risky Spring Break drinking behavior and willingness will more strongly predict more risky Spring Break drinking behavior (with which individuals may have less experience). Specifically, we predict that intentions and not willingness will predict drinking to get drunk over Spring Break whereas willingness but not intentions will predict drinking enough to black out or pass out over Spring Break.

## Method

### Participants and Procedures

All procedures were approved by the university's Institutional Review Board and a federal Certificate of Confidentiality was obtained. The data for the present study was drawn from a larger sample collected as part of a study examining Spring Break drinking. A list containing a random sample of 3,183 students who were enrolled during the 2009 academic year was obtained from the university registrar. These students at a large public northwestern university were invited to the study between March and May of 2009. Almost half of these students ( $n = 1540$  students; 54% female), aged 18 to 30 ( $M = 20.3$ ;  $SD = 2.25$ ), responded (48% response rate). All participants were invited to complete a survey after Spring Break. A small random subsample of participants was randomly invited to complete a survey prior

to Spring Break about their Spring Break plans and drinking cognitions. The data for the present study comes from a subsample of participants ( $n = 700$  initially invited;  $n = 315$  [45%] completed) who completed both pre- and post-Spring Break surveys. Students who completed the survey prior to Spring Break were immediately informed that they would receive an invitation to complete the follow-up survey during the week following Spring Break. The analyses presented include 275 students (56.4% female) who provided both pre- and post-Spring Break data. Participants in the present study ranged from 18–23 years of age with the average age 20.1 ( $SD = 1.43$ ) years. Participants were mostly Caucasian (68%), with 19% Asian, 5% multi-racial, and 8% other. The racial characteristics of this sample are similar to the campus as a whole. There were no significant differences between the full study population (those who only completed post-Spring Break measures) and those who completed the pre-Spring Break measures on age ( $F = 1.55, p = .21$ ), gender ( $\chi^2 = .612, p = .43$ , Cramer's  $V = .02$ ), racial composition ( $\chi^2 = 2.98, p = .39$  Cramer's  $V = .04$ ) or typical weekly drinking ( $F = .16, p = .65$ ). However, there were significant differences between responders (those who completed both the pre- and post-Spring Break surveys) and non-responders (those who only completed the pre-Spring Break survey) for the post-Spring Break survey on age ( $F = 8.36, p < .01$ ) and gender ( $\chi^2 = 6.89, p < .01$ , Cramer's  $V = .10$ ), with responders more likely to be younger and female. There were no differences in racial composition ( $\chi^2 = .44, p = .93$  Cramer's  $V = .03$ ) or typical weekly drinking ( $F = .13, p = .69$ ) between responders and non-responders.

Students were mailed and e-mailed an invitation to participate in a confidential online survey about their upcoming Spring Break activities and drinking behavior. The letter and e-mail included a project description and link to the study website. A separate email included a personalized identification number (PIN), which enabled participants to log-in to a secure Website. After reading a description of the study and indicating consent, participants completed the online assessment. Intentions, willingness, and previous drinking were assessed pre-Spring Break, and actual drinking behavior was measured post-Spring Break. Incentives for participation were \$10 for completing the pre-Spring Break assessment and \$30 for completing the post-Spring Break assessment.

## Measures

**Background Measures**—Participants' age, birth sex, ethnic and racial background, Greek status, living situation (on or off campus), and whether they traveled with friends over Spring Break were assessed.

**Intentions for alcohol behavior over Spring Break**—Participants indicated responses on a 7-point Likert- scale (1 = *Strongly Disagree*; 7 = *Strongly Agree*) to the following items assessing drinking intentions over Spring Break at two levels of extremity: "I intend to drink enough to get drunk over Spring Break," and "I intend to drink until I black out or pass out over Spring Break."

**Willingness for alcohol behavior over Spring Break**—Willingness was measured using items that were parallel to intentions: "Imagine over Spring Break that you had complete access to alcohol and freedom to consume alcohol everyday. How willing would you be to: (a) Drink enough to get drunk; and (b) Drink until you blacked out or passed out?" Participants recorded responses to each behavior on a 7 point Likert-type scale (1 = *Not at all Willing*; 7 = *Very Willing*).

**Previous (non-Spring Break) drinking**—Typical (non-Spring Break related) drinking over the past three months was assessed with the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). This measure was included to approximate general

drinking experience, is conceptualized as being a proximal antecedent to behavior according to the PW model. Participants were asked to estimate their typical drinking patterns and were instructed to not include Spring Break drinking in their estimates. Based on past research (Borsari et al., 2001), only the drinks per week subscale was included in the present analyses. The scale asked participants to “Consider a typical week during the last three months. How much alcohol, on average (measured in number of drinks), did you drink on each day of a typical week?” Participants provided a number for each of the seven days of the week. The items were summed to form a composite variable representing total drinks per week.

**Spring Break Alcohol Behavior**—Participants were asked to “Please indicate whether or not you had each experience during the week of Spring Break.” Participants indicated whether they “Got drunk,” and “Drank until you blacked out or passed out” for each day of the 10-day Spring Break period. The number of days engaging in each behavior was summed to form the two outcome variables.

## Results

### Data Analysis

Preliminary analyses revealed non-normal distributions for both drinking outcomes (i.e., days drunk, days blacked-out). Accordingly, negative binomial regression was selected as the primary analysis strategy (Atkins & Gallop, 2007; Hilbe, 2007; Simons, Neal, & Gaher, 2006). Because the variance was substantially greater than the mean, both drinking outcomes closely followed a negative binomial probability distribution. Thus, we used a generalized linear modeling approach with the distribution specified as negative binomial (i.e., negative binomial regression). Gender, age, ethnic and racial background, Greek status, living situation, and traveling with friends were included in all analyses as covariates based on previous associations with alcohol consumption (Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; O’Malley & Johnston, 2002; Read, Wood, Davidoff, McLacken, & Campbell, 2002; Wechsler, Kuo, Lee, & Dowdall, 2000).

### Descriptive Results

Overall, 41.5% reported getting drunk on at least 1 day, and 11.1% reported that they blacked or passed out on at least 1 day over Spring Break. Participants reported that on average they got drunk on 1.17 ( $SD = 1.87$ ) days and experienced blackouts on 0.19 ( $SD = 0.69$ ) days. As seen in Table 1, all major study variables were positively correlated with each other. It is worth noting that willingness and intentions for each of our two outcome behaviors were highly correlated.

### Regressions

**Days drunk over Spring Break**—For the model examining days drunk over Spring Break, the likelihood ratio for the full model was  $X^2(5) = 217.38, p < .001$ , which indicated that the overall model was significant. Results of the negative binomial regression evaluating days drunk over Spring Break as the dependent variable are presented in Table 2. Results from the analysis indicated that none of the demographic and background variables assessed were associated with days drunk over Spring Break. However, consistent with our hypotheses, intention, but not willingness, was associated with days drunk over Spring Break. As noted in footnote 1, willingness significantly predicted days drunk when entered prior to adding intentions. However, once both cognitions were included in the model, the effect of willingness became non-significant, as can be seen in Table 2.

**Days blacked out or passed out over Spring Break**—For the model examining days blacked out or passed out over Spring Break, the likelihood ratio for the full model was  $X^2(5) = 61.720, p < .001$ , which indicated that the overall model was significant. Results of the negative binomial regression evaluating days blacked out or passed out over Spring Break as the dependent variable are presented in Table 3. Consistent with the previous results, none of the background or demographic variables were associated with days blacked out or passed out over Spring Break. However, willingness, but not intention was associated with days blacked out or passed out over Spring Break. As can be seen in footnote 2, intention significantly predicted days blacked or passed out when entered prior to adding willingness. However, once both cognitions were included in the model, the effect of intention became non-significant (see Table 3)

## Discussion

Results from the present study indicate that willingness and intention were differentially predictive of Spring Break alcohol risk behavior depending on the relative extremity of the behavior in question when taking several covariates into account. Specifically, for a lower risk behavior (getting drunk), intentions but not willingness predicted behavior. In contrast, at higher risk (drinking enough to black out or pass out) willingness, but not intention, predicted behavior. It is important to note that although intentions and willingness were highly correlated and individually both predict our two outcomes when entered into the model separately. Moreover, only the cognition theoretically predicted by the Prototype Willingness Model (i.e. willingness predicting blacking out and intentions predicting getting drunk) showed an independent association with the outcome when holding the other constant.

**Theoretical Implications**—The present findings extend the previous theoretical frameworks of the Theory of Planned Behavior (Ajzen, 1991) and the PW Model (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008). The PW Model provided an important advance in the Theory of Planned Behavior in proposing a dual pathway to risk behavior and identifying willingness as a unique predictor of some behaviors over and above intentions. Previous work has suggested that willingness may be a particularly important predictor for adolescents and/or those who have limited experience with a given behavior. The present findings suggest that the relative risk, or extremity, of behavior may also impact the relative importance of willingness versus intention and that this effect is over and above the influence of past alcohol use. In general, people may be less likely to intend to engage in more extreme behaviors for different reasons. By definition, more extreme behaviors happen at lower frequency than less extreme behaviors and intentions are likely to stem from previous experiences. In addition, individuals may have less perceived control over the occurrence of more extreme behaviors, and thus endorse lower intentions. People may be less willing to endorse intentions for more extreme behaviors but be open to admitting willingness to engage in more extreme behaviors given the right circumstances. For example, many students have consumed enough alcohol to pass out on one or more occasions but few of them probably began with explicit intentions to do so. The present results suggest, however, that many of these students would have reported being willing to drink enough to pass out. In sum, extreme behaviors are likely to fall in the category of unplanned behaviors which can be better predicted by willingness than by intention. It is important to note that as found in previous studies (Gerrard et al., 2008; Gibbons et al., 2003; Gibbons et al., 1998), although intention and willingness were highly correlated, they yielded distinct predictive power. It is important to consider these findings in light of the current conceptualization of the model. Whereas within the Prototype Willingness Model, willingness has typically been viewed as influencing intention (refer to Figure 1), the present

study indicates that the relationship between willingness and intention might be bidirectional. More research is needed to determine whether the current conceptualization of the model is an appropriate representation of the relationship between willingness and intention when related to risk behaviors at varying levels of extremity.

These findings may be extended to lead to better prediction of extreme behaviors associated with specific situations. Recent research has highlighted a number of specific events associated with high-risk drinking among college students, including Spring Break, 21<sup>st</sup> birthdays, New Years, and other holidays (e.g., Neighbors et al., 2011). Additional research is needed to evaluate whether willingness may be a particularly useful predictor in these contexts. While it is important to note that intentions and willingness were differentially predictive of Spring Break behaviors when controlling for several covariates, it is also important to note that none of these covariates were significant in predicting Spring Break drinking. It is likely that intentions and willingness accounted for some of the variance of these demographic variables that often predict Spring Break drinking.

**Prevention Implications**—Many college drinking preventions and interventions address drinking intentions through strategies such as education regarding blood alcohol content (BAC) and potential consequences, alcohol expectancies in relation to perceived benefits of drinking, and protective behavioral strategies (for reviews see Carey, Scott-Sheldon, Carey, & DeMartini, 2007; Larimer & Crouce, 2007; Walters & Neighbors, 2005). This is true both for interventions that are designed for reducing general drinking and for the burgeoning literature on event-specific prevention (Glassman, Dodd, Sheu, Rienzo, & Wagenaar, 2010; Lewis, Neighbors, Lee, Oster-Aaland, 2008; Neighbors, Lee, Lewis, Fossos, & Walter, 2009). Based on our findings, it seems that interventions may need to address both intentions and willingness in regards to reducing drinking behavior and consequences, although existing prevention strategies have generally not systematically targeted willingness or less planful behaviors to the same degree that they have addressed intentionality. Our findings suggest that strategies that address intentions may be effective in reducing lower risk drinking behaviors, but may be less effective in reducing more extreme drinking and related consequences. More extreme consequences like blacking out are typically unplanned events. Our results suggest that although these events are typically unplanned, an openness to having those experiences is associated with increased risk. Interventions aiming to reduce willingness and intention may differ on the level of planning that individuals are asked to consider. For example, willingness may be better targeted by having individuals plan out protective behavioral strategies that could help them if they found themselves in a risk-conducive environment, whereas intentions can be targeted by having individuals consider ways they can avoid being in a risk-conducive environment that may lead to negative consequences. However, when considering the relatively high correlations between willingness and intentions in tandem with previous findings that willingness is more malleable than intentions (e.g. Gerrard et al., 2008), it is possible that treating the two constructs similarly in preventions may be sufficient to enact change. Determining the exact nature and predictive utility of willingness and intentions in prevention is an important next step.

**Limitations**—The results of the present study should be considered in light of several limitations. First, the selection of only two drinking behaviors provided a limited range of extremity. Furthermore, because the present study did not assess blacking out or passing out and getting drunk prior to Spring Break, the analyses could not control for past experience with these behaviors. However, given that the PW model conceptualizes past behavior as being more general in nature, the past behavior variable used is consistent with the model. It is also worth noting that the lead in for the willingness items (i.e., “Imagine over Spring Break that you had complete access to alcohol and freedom to consume alcohol every

day...”) may have influenced participants’ willingness relative to if they had been asked willingness without this context. Furthermore, the same context was not provided for the intentions items and it is unclear whether participants were considering intentions in the same context. While this approach is similar to previous studies examining these constructs (Gerrard et al., 2008; Gibbons et al., 2003), in future studies it would be worth empirically examining the impact of the context provided and whether it should be consistent across constructs. Furthermore, the subsample used in the present study included individuals who went on Spring Break trips with friends. Therefore, it is possible that these individuals were inherently riskier than same-aged peers who opted not to take trips with friends. One other sample-based limitation may be that a significant number of our participants were under the legal drinking age of 21. It is possible that these students were particularly prone to take alcohol-related risks during Spring Break, particularly if they traveled to places where they could drink legally. This large amount of underage drinkers in our sample is also likely related to the higher response rates of younger students in our sample, of which the reasons behind are unclear. It is also important to note that although the response rate (39%) in the present study is comparable to other large studies of college student drinking, conclusions should be considered in light of potential response biases. Previous work suggests at least two possible biases with students who are non-drinkers and students who are extremely heavy drinkers being less likely to participate in alcohol related studies (Neighbors, Palmer, & Larimer, 2003).

**Future Directions**—Stemming in part from the limitations of the present study, there are a variety of research questions that should be answered in the future. First, additional research including multiple behaviors at multiple levels of extremity would be worthwhile. Other ways of conceptualizing extremity of risk, including targeting specific amounts of alcohol, should also be examined. Future research should examine high-risk outcomes such as driving after drinking or condom use, over which individuals have more control. In addition, future research should determine if blacking out and passing out are differentially predicted by willingness and intentions as they may represent distinct outcomes. Relatedly, it is possible that people may not have full volitional control over blacking out, so a focus on other extreme risk behaviors that may be under full volitional control, for example, driving while under the influence, should be examined. Finally, although the present study does not consider the potential role of individual differences, it is likely that individual differences such as sensation-seeking and impulsivity influence willingness and intentions for engaging in risky behaviors and may also impact the relationship between risk behaviors and cognitions. Therefore, future lines of inquiry could examine whether individual differences moderate the relationships found in the present study.

## Conclusion

Results from the present study indicate that willingness and intention are differentially predictive of alcohol risk behavior over Spring Break, depending on the extremity of the behavior in question. These results present important avenues for future research and possible integration into prevention programs aimed at reducing risky alcohol use.

## Acknowledgments

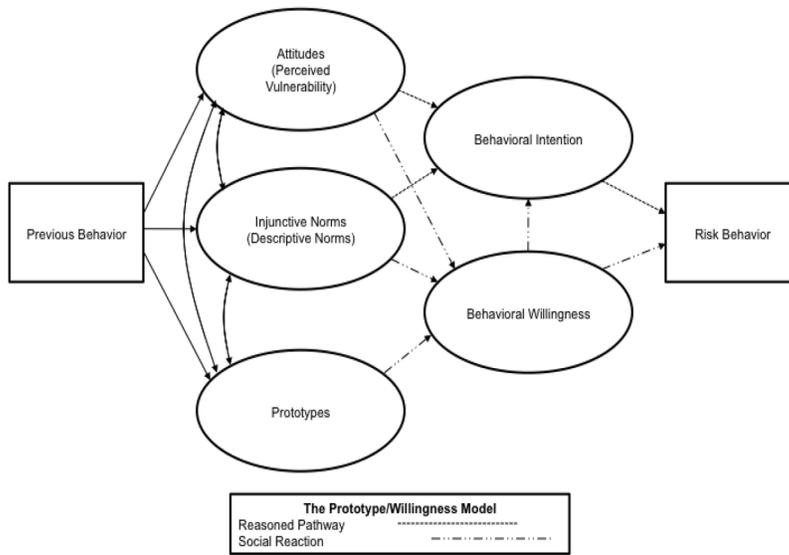
Data collection and manuscript preparation were supported by National Institute on Alcohol Abuse and Alcoholism Grants K99AA020869, K01AA016966, R01AA016099, & R03AA018735.

## References

Ajzen I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*. 1991; 50:179–211.10.1016/0749-5978(91)90020-T

- Atkins DC, Gallop RJ. Rethinking how family researchers model infrequent outcomes: A tutorial on count regression and zero-inflated models. *Journal of Family Psychology*. 2007; 21:726–735.10.1037/0893-3200.21.4.726 [PubMed: 18179344]
- Carey KB, Scott-Sheldon LAJ, Carey MP, DeMartini KS. Individual-level interventions to reduce college student drinking: A meta-analytic review. *Addictive Behaviors*. 2007; 32:2469–2494.10.1016/j.addbeh.2007.05.004 [PubMed: 17590277]
- Collins RL, Parks GA, Marlatt GA. Social determinants of alcohol consumption: the effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*. 1985; 53:189–200.10.1037/0022-006X.53.2.189 [PubMed: 3998247]
- Fishbein, M.; Ajzen, I. *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA US: Addison-Wesley; 1975.
- Gerrard M, Gibbons FX, Houlihan AE, Stock ML, Pomery EA. A dual-process approach to health risk decision making: The prototype willingness model. *Developmental Review*. 2008; 28:29–61.10.1016/j.dr.2007.10.001
- Gibbons, FX.; Gerrard, M.; Lane, DJ. A social reaction model of adolescent health risk. In: Suls, JM.; Wallston, K., editors. *Social psychological foundations of health and illness*. Oxford, UK: Blackwell; 2003.
- Gibbons FX, Gerrard M, Blanton H, Russell DW. Reasoned action and social reaction: Willingness and intention as independent predictors of health risk. *Journal of Personality and Social Psychology*. 1998; 74:1164–1181.10.1037/0022-3514.74.5.1164 [PubMed: 9599437]
- Glassman TJ, Dodd VJ, Sheu J, Rienzo BA, Wagenaar AC. Extreme ritualistic alcohol consumption among college students on game day. *Journal of American College Health*. 2010; 58:413–423.10.1080/07448480903540473 [PubMed: 20304753]
- Greenbaum PE, Del Boca FK, Darkes J, Wang C, Goldman MS. Variation in the drinking trajectories of freshmen college students. *Journal of Consulting and Clinical Psychology*. 2005; 73:229–238.10.1037/0022-006X.73.2.229 [PubMed: 15796630]
- Grekin E, Sher KJ, Krull J. College spring break and alcohol use: Effects of spring break activity. *Journal of Studies on Alcohol and Drugs*. 2007; 68:681–688. [PubMed: 17690801]
- Hilbe, JM. *Negative binomial regression*. New York, NY US: Cambridge University Press; 2007.
- Larimer ME, Cronce JM. Identification, prevention, and treatment revisited: Individual-focused college drinking prevention strategies 1999–2006. *Addictive Behaviors*. 2007; 32:2439–2468.10.1016/j.addbeh.2007.05.006 [PubMed: 17604915]
- Lee CM, Lewis MA, Neighbors C. Preliminary examination of spring break alcohol use and related consequences. *Psychology of Addictive Behaviors*. 2009; 23:689–694.10.1037/a0016482 [PubMed: 20025375]
- Lee CM, Maggs JL, Rankin LA. Spring break trips as a risk factor for heavy alcohol use among first-year college students. *Journal of Studies on Alcohol*. 2006; 67:911–916. [PubMed: 17061009]
- Lewis MA, Neighbors C, Lee CM, Oster-Aaland L. 21<sup>st</sup> birthday celebratory drinking: Evaluation of a personalized normative feedback card intervention. *Psychology of Addictive Behaviors*. 2008; 22:176–185.10.1037/0893-164X.22.2.176 [PubMed: 18540715]
- Neal DJ, Fromme K. Hook ‘em horns and heavy drinking: Alcohol use and collegiate sports. *Addictive Behaviors*. 2007; 32:2681–2693.10.1016/j.addbeh.2007.06.020 [PubMed: 17662537]
- Neighbors C, Atkins DC, Lewis MA, Lee CM, Kaysen D, Mittmann A, Fossos N, Rodriguez LM. Event specific drinking among college students. *Psychology of Addictive Behaviors*. 2011; 25:702–707.10.1037/a0024051 [PubMed: 21639597]
- Neighbors C, Lee CM, Lewis MA, Fossos N, Larimer ME. Are social norms the best predictors of outcomes among heavy-drinking college students? *Journal of Studies on Alcohol and Drugs*. 2007; 68:556–565. [PubMed: 17568961]
- Neighbors C, Lee CM, Lewis MA, Fossos N, Walter T. Internet-based personalized feedback to reduce 21st-birthday drinking: A randomized controlled trial of an event-specific prevention intervention. *Journal of Consulting and Clinical Psychology*. 2009; 77:51–63.10.1037/a0014386 [PubMed: 19170453]

- Neighbors C, Palmer RS, Larimer ME. Interest and participation in a college student alcohol intervention study as a function of typical drinking. *Journal of Studies on Alcohol*. 2004; 65:736–740. [PubMed: 15700511]
- Neighbors C, Walters ST, Lee CM, Vader AM, Vehige T, Szigethy T, DeJong W. Event-specific prevention: Addressing college student drinking during known windows of risk. *Addictive Behaviors*. 2007; 32:2667–2680.10.1016/j.addbeh.2007.05.010 [PubMed: 17616260]
- O'Malley PM, Johnston LD. Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol Supplement*. 2002; 14:23–39. [PubMed: 12022728]
- Patrick ME, Lee CM. Daily variations in Spring Break alcohol and sexual behaviors based on intentions, perceived norms, and daily trip context. *Journal of Studies on Alcohol and Drugs*. 2012; 73:591–596. [PubMed: 22630797]
- Patrick ME, Morgan N, Maggs JL, Lefkowitz E. “I got your back”: Friends’ understandings regarding college student Spring Break behavior. *Journal of Youth and Adolescence*. 2011; 40:108–120.10.1007/s10964-010-9515-8 [PubMed: 20182778]
- Pomery EA, Gibbons FX, Reis-Bergan M, Gerrard M. Experience as a moderator of the developmental shift from reactive to reasoned behavior. *Personality and Social Psychology Bulletin*. 2009; 35:894–908. [PubMed: 19429884]
- Read JP, Wood MD, Davidoff OJ, McLacken J, Campbell JF. Making the transition from high school to college: The role of alcohol-related social influence factors in students’ drinking. *Substance Abuse*. 2002; 23:53–65.10.1023/A:1013682727356 [PubMed: 12444360]
- Simons JS, Neal DJ, Gaher RM. Risk for marijuana-related problems among college students: An application of zero-inflated negative binomial regression. *American Journal of Drug and Alcohol Abuse*. 2006; 32:41–53.10.1080/00952990500328539 [PubMed: 16450642]
- Sönmez S, Apostolopoulos Y, Yu CH, Yang S, Mattila A, Yu LC. Binge drinking and casual sex on spring break. *Annals of Tourism Research*. 2006; 33:895–917.10.1016/j.annals.2006.06.005
- Thornton B, Gibbons FX, Gerrard M. Risk perception and prototype perception: Independent processes predicting risk behavior. *Personality and Social Psychology Bulletin*. 2002; 28:986–99.10.1177/01467202028007011
- Walters ST, Neighbors C. Feedback interventions for college alcohol misuse: What, why and for whom? *Addictive Behaviors*. 2005; 30:1168–1182.10.1016/j.addbeh.2004.12.005 [PubMed: 15925126]
- Wechsler H, Kuo M, Lee H, Dowdall DW. Environmental correlates of underage alcohol use and related problems of college students. *American Journal of Preventative Medicine*. 2000; 19:24–29.10.1016/S0749-3797(00)00163-X



**Figure 1.**  
Prototype Willingness Model

Table 1

Means, Standard Deviations, and Correlations

	1	2	3	4	5	6	7
1. Willingness to get drunk over SB	-						
2. Intention to get drunk over SB	.823**	-					
3. Willingness to drink until blacked-out over SB	.563**	.497**	-				
4. Intention to drink until blacked-out over SB	.468**	.504**	.744**	-			
5. Past 3 month alcohol use	.550**	.600**	.473**	.419**	-		
6. Days drunk over SB	.567**	.628**	.478**	.448**	.675**	-	
7. Days blacked out over SB	.304**	.262**	.495**	.437**	.314**	.517**	-
Mean	2.67	2.90	.62	.58	6.81	1.17	0.19
SD	2.23	2.50	1.24	1.15	9.74	1.87	0.69

Note

\*\* p &lt; .01, n = 275, SB = Spring Break

**Table 2**  
 Negative Binomial Regression Results Examining Number of Days Got Drunk over Spring Break

Predictor	B	SE B	Z	Ratio	(95% CI)
Age	.049	.062	.79	1.050	(0.931, 1.185)
Sex	.178	.150	1.19	1.194	(0.891, 1.602)
Caucasian	.201	.209	.96	1.223	(0.811, 1.843)
Asian	-.483	.351	-1.38	0.617	(0.310, 1.227)
Ethnicity	-.027	.296	-.09	.973	(0.545, 1.750)
Housing	-.165	.189	-.87	.848	(0.585, 1.229)
Greek Status	-.151	.198	-.76	.860	(0.584, 1.268)
Travel with Friends	.198	.144	1.37	1.219	(0.918, 1.618)
Past Drinking Behavior	.034	.008	4.52**	1.035	(1.020, 1.050)
Pre-SB Willingness to Get Drunk <sup>1</sup>	.035	.051	.68	1.036	(0.936, 1.145)
Pre-SB Intention to Get Drunk	.508	.066	7.72**	1.663	(1.461, 1.892)

Note.  $n = 275$

\*  $p < .05$ ,

\*\*  $p < .01$ , SB = Spring Break

---

<sup>1</sup>Willingness significantly predicted days drunk ( $B = .841$ ,  $SE = .111$ ,  $Z = 7.52$ ,  $Ratio = 2.317$ ,  $95\% CI = 1.888$  to  $2.885$ ) when entered prior to adding intentions. However, once both cognitions were included in the model, the effect of willingness became non-significant, as can be seen in Table 2.

**Table 3**  
 Negative Binomial Regression Results Examining Number of Days Blacked Out or Passed Out During Spring Break

Predictor	B	SE B	Z	Ratio	(95% CI)
Age	.031	.168	.18	1.031	(0.743, 1.432)
Sex	.282	.427	.66	1.326	(0.574, 3.064)
Caucasian	.084	.576	.15	1.087	(0.352, 3.361)
Asian	-.134	.755	-.18	0.874	(0.199, 3.838)
Ethnicity	-.050	.689	-.07	-.951	(0.247, 3.669)
Housing	.330	.519	.64	1.391	(0.503, 3.850)
Greek Status	.654	.513	1.27	1.923	(0.704, 5.253)
Travel with Friends	.453	.390	1.16	1.574	(0.732, 3.382)
Past Drinking Behavior	.045	.018	2.54*	1.046	(1.010, 1.083)
Pre-SB Willingness to Black Out or Pass Out	.576	.167	3.46**	1.779	(1.283, 2.466)
Pre-SB Intention to Black Out or Pass Out <sup>2</sup>	.050	.191	.26	1.051	(0.723, 1.528)

Note.  $n = 275$ ,

\*  $p < .05$ ,

\*\*  $p < .01$ . SB = Spring Break

---

<sup>2</sup>Intention significantly predicted days blacked out ( $B = .693$ ,  $SE = .142$ ,  $Z = 4.86$ ,  $Ratio = 1.999$ ,  $95\% CI = 1.551$  to  $2.664$ ) when entered prior to adding willingness. However, once both cognitions were included in the model, the effect of intention became non-significant, as seen in Table 3.