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A Test of the Theory of Planned Behavior in the Prediction of Alcohol-Induced Blackout Intention and Frequency

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Abstract

Background: This study examined the Theory of Planned Behavior (TPB) as an explanatory model for alcohol-induced blackouts among college students. Blackouts are periods of time wherein individuals continue to function and engage in their social environment but do not remember it as a result of consuming large quantities of alcohol. Social cognitive factors posited within TPB, such as perceived norms and personal attitudes toward alcohol consumption, are reliable predictors of alcohol use and related problems. However, research to date has not examined these theoretical antecedents as predictors of alcohol-induced blackout.

Methods: College students with a history of blackout ($N=384$) completed a baseline survey, and a subsample ($N=120$) completed a 1-month follow-up survey. Negative binomial mediation models were used to evaluate intentions to blackout as a mediator of the norms, attitudes, and self-efficacy to avoid blackout–blackout frequency association at baseline and 1-month follow up.

Results: Norms, attitudes, and self-efficacy to avoid blackout all significantly predicted blackout intentions at baseline, which in turn predicted more frequent blackouts both at baseline and 1-month follow-up. Notably, blackout attitudes demonstrated both direct and indirect associations with blackout frequency.

Conclusions: Prospective analyses provided partial support for the TPB, with only attitudes and intentions demonstrating prospective associations with actual blackout frequency. Given the particularly strong association between blackout attitudes and frequency of blackouts, attitudes may represent an important and novel target for prevention and intervention efforts.

Keywords

alcohol; drinking; college students; attitudes; social norms

Alcohol-induced blackouts are a prevalent outcome of heavy drinking that have been associated with a range of other alcohol-related consequences (Hingson et al., 2016; Wetherill & Fromme, 2016). During a blackout, individuals continue to function and engage in their social environment but do not remember all or part of the event. Blackouts occur when an individual reaches a level of intoxication which impairs the transfer of information from short-term to long-term memory. Thus, the person continues to function, albeit in an intoxicated state, and is no longer encoding memories. Approximately 50% of young adults who drink report a lifetime history of alcohol-induced blackouts (Wetherill & Fromme, 2016). While blackouts are not necessarily more prevalent than other negative consequences of heavy drinking (Barnett et al., 2014; Brett et al., 2016; Merrill et al., 2013), they have been linked to other negative outcomes, including physical injury, overdose, emergency room visits, and sexual victimization (Hingson et al., 2016; Mundt et al., 2012; Wilhite & Fromme, 2015; Valenstein-Mah et al., 2015). Furthermore, a prospective cohort study of 5,469 Swiss men found that those who reported an alcohol-related blackout when they were 20 years old, were more likely to report an alcohol use disorder at 25 years old (Studer, Gmel, Bertholet, Marmet, & Daeppen, 2019). Thus, blackouts may be a consequence of special concern in young adult populations.

While a number of social and cognitive variables have been linked to heavy alcohol use among college students and young adults (Kuntsche, Knibbe, Gmel, & Engles, 2005; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007), limited research has used theoretical models to describe the occurrence of alcohol-induced blackouts. One model that may be helpful in identifying theoretically relevant correlates of blackouts is the theory of planned behavior (TPB). Using the TPB to examine blackout would enable researchers to target specific mechanisms of interest when developing prevention and intervention programs.

Theory of Planned Behavior

The TPB is a prominent social psychological theory that has been used routinely to examine health behaviors, including alcohol use and related harms (Ajzen, 1985; Cooke, Dahdah, Norman, & French, 2016). This model suggests that the most important determinant of an individual's behavior is their intention to perform that behavior. Three cognitive variables – attitudes, social norms, and perceived behavioral control (a construct similar to self-efficacy) – are posited as direct determinants of intention. Attitudes are relatively stable evaluative judgments of various aspects of a person's experience (e.g., an idea, a person, a behavior) that range from negative to positive and are influenced by situational factors, including observations of one's own behavior. Attitudes represent a key explanatory variable in many theories of health behavior, as research has shown attitudes predict both intention and actual behavior (Bem, 1967; Glassman & Albarracin, 2006; Higgins, 1987; Montano & Kasprzyk, 2008). Social norms include two different types, descriptive and injunctive, representing perceptions of others' behaviors (descriptive norms; DN) as well as others' approval for a certain behavior (injunctive norms; IN), a distinction that is important because they capitalize on different sources of motivation (e.g., DN: motivation to conform via social information, IN: motivation to gain approval or to avoid censure; Cialdini, 2007). Descriptive norms specify typical or 'normal' behavior: what most people actually do (Perkins & Berkowitz, 1986). Alternatively, injunctive norms refer to one's perception of

what should be done: what is approved or disapproved of by others. Finally, perceived behavioral control represents the extent to which a person feels they have control over performing a desired behavior when faced with internal and external barriers. It is often operationalized as self-efficacy, or the belief that one can successfully perform the required behaviors for producing an outcome (Bandura, 1977, 1999).

With respect to alcohol use, a recent meta-analysis found that the constructs of the TPB are strong predictors of getting drunk, heavy episodic drinking, and drinking quantity (Cooke et al., 2016). However, the model tested in this meta-analysis did not assess high-risk drinking outcomes (e.g., blackouts) and did not include descriptive norms, which have been identified as a dominant predictor of alcohol consumption among young adults (Neighbors et al., 2007). Furthermore, descriptive norms are utilized almost universally in efficacious interventions for college student drinking (Cronce & Larimer, 2011; Miller et al., 2013). Thus, additional work considering all relevant cognitive variables and assessing attitude specificity regarding high-risk drinking outcomes (e.g., blackouts) is needed.

Current Study

This study examines the TPB as a model for alcohol-induced blackouts among college students, both cross-sectionally and longitudinally. Consistent with the TPB, we hypothesized that blackout-specific attitudes and norms would be positively associated with blackout intentions and blackout self-efficacy to avoid blackout would be negatively associated with blackout intentions (all cross-sectionally). In turn, we hypothesized that blackout intentions would be positively associated with blackout frequency (both cross-sectionally and prospectively). Finally, we expected intentions to mediate the TPB constructs-blackout frequency association. This work extends previous work by evaluating the importance of theoretical constructs in predicting high-risk alcohol use outcomes that have been linked to alcohol-related harm independent of heavy drinking – in this case, blackouts (Hingson et al., 2016). In addition, this work offers a comprehensive examination of the antecedents of blackout frequency according to the TPB and, in doing so, has the potential to identify specific targets for future intervention work.

Method

Participants and Procedure

College students in the United States were recruited through Qualtrics survey panels. Those interested in participating in the study accessed the screening survey from their Qualtrics account and completed a screening questionnaire. Eligible participants were then redirected to the informed consent page, provided consent, and completed the online survey. To be eligible to complete the study, participants had to report (a) being 18-29 years old, (b) full-time undergraduate enrollment, and (c) inability to remember drinking events in the past year. Participants received compensated through Qualtrics panels. All procedures were approved by the Brown University Institutional Review Board.

A sample of 402 individuals provided consent to participate; however, upon inspection, 18 participants were found to be missing >70% of their data. Thus, the final sample resulted in

384 participants at baseline. Due to financial constraints, the 1-month follow-up was open only to the first 120 individuals to complete it. The sample was 58% female with a mean age of 21.8 ($SD = 2.8$) with the following racial/ethnic breakdown: 72% White, 12% Black/African American, 11% Asian, 1% Native American/Native Alaskan, 6% other, and 18% Hispanic/Latino. The participants who completed both the baseline and follow-up were more likely than those who completed only the baseline assessment to be female [$\chi^2(1)=6.169$, $p=.013$]. However, baseline and follow-up samples did not differ with respect to all other variables including being white (vs. non white) [$\chi^2(1)=3.487$, $p=.075$], age, $t(225)=1.67$, $p=.097$, drinks per week, $t(253)=1.66$, $p=.098$, attitudes toward blackout, $t(382)=.601$, $p=.548$, descriptive norms concerning blackout, $t(382)=1.12$, $p=.262$, injunctive norms concerning blackout, $t(382)=.29$, $p=.765$, self-efficacy for avoiding blackout, $t(382)=-.30$, $p=.767$, intention to blackout, $t(242)=1.09$, $p=.277$, or baseline blackout frequency, $t(262)=.95$, $p=.341$.

Measures

Theory of planned behavior constructs.—A previously used measure of attitudes toward heavy drinking and limiting drinking (Hagger et al., 2012; DiBello, Miller, Neighbors, Reid, & Carey, 2018) was adapted for this study to assess attitudes toward blackout. Participants were asked to respond to the statement “If I had a blackout, it would be...”, followed by 6 rating scales, each with response options ranging from 1 to 5: unenjoyable-enjoyable, bad-good, harmful-beneficial, foolish-wise, unpleasant-pleasant, dangerous-safe. The six items were averaged to create a single scale representing one’s attitude toward blackout ($\alpha=.93$). Descriptive norms specific to blackouts were assessed with the following sex-specific question: “What percent of male/female college student drinkers has a blackout in a typical month?” with a range of 0-100%. Injunctive norms were assessed by the following, “To what extent does the typical college student drinker approve or disapprove of having a blackout?” with response options ranging from strongly disapprove (1) to strongly approve (5) (Elek, Miller-Day, Hecht, 2006; Wechsler & Kuo, 2000). Self-efficacy to avoid blackout was assessed by asking the following, “Please indicate how confident you are that you could avoid a blackout if you wanted to do so,” with a range of 0-100% confident. Finally, intention was measured using the following, “In the next 30 days, I intend to have a blackout as a result of my drinking,” with a range of strongly disagree (1) to strongly agree (6). For all blackout specific questions, participants were reminded of the definition of blackout at the top of each page with the questions.

Alcohol-induced blackout.—Blackout frequency was measured using the following, “How many times in the past 30 days have you had a blackout (i.e., been unable to remember events that happened while you were drinking, even if someone tried to remind you later)?” Response options were never, 1 time, 2-3 times, weekly, and twice a week or more. To better approximate a count outcome representing the frequency of blackouts in a month, we coded both the baseline and the 1-month blackout scores in the following way, never=0, 1 time=1, 2-3 times = 2 (given that all participants who endorsed that item had experienced a blackout at least twice), weekly = 4, and twice a week or more = 8.

Typical drinks per week.—Past-month alcohol use was assessed using the Daily Drinking Questionnaire (Collins et al., 1985). Daily quantities entered into a 7-day grid were summed to estimate total drinks consumed in a typical week (α for daily quantity reports = .88).

Plan of Analysis

Prior to conducting analyses, all data were screened for outliers. Four outliers were identified for drinks per week, which were replaced with the value that was three standard deviations and one integer above the mean (Tabachnick & Fidell, 2006).

All analyses were conducted in Mplus version 7.2. Blackout frequency was specified as a count outcome and negative binomial regression was used to run all regression and mediation analyses. Specifically, models tested intentions as a mediator of the relationships between the other TPB constructs (norms, attitudes, and self-efficacy) assessed at baseline and blackout frequency at both baseline and 1-month follow up. Within the negative binomial framework, raw parameter estimates are log based. Thus, estimates are exponentiated to aide in interpretability. The resulting exponentiated parameter estimates can be interpreted as rate ratios (or % change in the rate blackout based on each unit change in the predictor with values less than 1 representing a decrease and values greater than 1 representing an increase in blackout rates). The resulting mediation analyses were interpreted as significant when there was an absence of 1 from the exponentiated bootstrapped confidence interval (5,000 bootstrapped samples) specific to the indirect effect. The baseline models included 384 individuals and the prospective models included 120 individuals who provided complete data. In all models, participants' sex (0 = male, 1 = female) and drinks per week were included as covariates.

Results

Descriptive Information and Correlations

Descriptive statistics and zero-order correlations among primary predictor and outcome variables are presented in Table 1. Participants reported consuming approximately 1.6 drinks per day at baseline, had more negative attitudes towards blackout (1.7 on scale from 1-5), believed that less than half of student peers blackout in any given month and perceived peers as on the disapproving side of neutral, were confident in their ability to avoid blackout (80% on scale of 0-100), reported blacking out approximately 2 times in the past month on average at baseline and just under 1 time in the past month on average at follow-up. Most drinking variables were positively and significantly correlated with each other within and across the two time points. Specifically, attitudes toward blackout was significantly as positively correlated with both norms, intentions, and both assessments of blackout frequency and was negatively associated with self-efficacy for avoiding blackout. Likewise, both norms variables were significantly and positively associated with one another, intentions, and blackout frequency but neither was significantly associated with self-efficacy for avoiding blackout.

Theory of Planned Behavior Constructs as Predictors of Blackout

We first used Mplus to examine both the direct and indirect effects of both types of norms, attitudes, and self-efficacy to avoid blackout in predicting blackout frequency at baseline. First, all TPB variables were significant predictors of blackout intentions. Specifically, both norms and attitudes were significant and positive predictors of intention, while self-efficacy for avoiding blackout was a significant negative predictor of intentions. See Table 2 (top panel) for the regression model predicting intentions. Furthermore, descriptive norms, attitudes, and intentions were significant and positive predictors of blackout frequency, while self-efficacy for avoiding blackout was a significant negative predictor of frequency. See Table 2 (bottom panel) for the full regression results. Finally, indirect effects of all TPB constructs and blackout frequency through intentions were evaluated. Three of the four indirect effects were significant: descriptive norms through intention to blackout frequency, $ab = 1.001$, [95% CI: 1.001, 1.003], injunctive norms through intention to blackout frequency, $ab = 1.015$, [95% CI: 1.002, 1.040], attitude toward blackout through intention to blackout frequency, $ab = 1.066$, [95% CI: 1.014, 1.122] and self-efficacy to avoid blackout through intention to blackout frequency, $ab = .999$, [95% CI: .998, 1.001].

Theory of Planned Behavior Constructs as Prospective Predictors of Blackout

Next, we examined the extent to which both types of norms, attitudes, and self-efficacy to avoid blackout, measured at baseline, predicted blackout frequency at 1-month follow up, and tested mediation through baseline intention. The results revealed that, of the TPB constructs, only intention to blackout was a significant and independent prospective predictor of blackout frequency. See Table 3 for full regression results.

Using bootstrapped confidence intervals, we examined intention to blackout as a mediator of the association between the TPB cognitive correlates of behavior (norms, attitudes, and self-efficacy) and blackout frequency at 1-month follow up. Tests of the indirect effects indicated that the only significant indirect effect was that of blackout intention mediating the association between baseline attitudes and blackout frequency at 1-month, $ab = 1.151$, [95% CI: 1.002, 1.311]. The indirect effects representing descriptive norms through intention to blackout frequency, $ab = 1.003$, [95% CI: .999, 1.007], injunctive norms through intention to blackout frequency, $ab = 1.035$, [95% CI: .999, 1.100], and self-efficacy to avoid blackout through intention to blackout frequency, $ab = .998$, [95% CI: .995, 1.001] were all non-significant.

Discussion

This study extends the previous literature by expanding our understanding of alcohol-induced blackout frequency through the use of the TPB. Consistent with previous research examining TPB as a model of alcohol consumption (Cooke et al., 2016), blackout-specific norms, attitudes, and self-efficacy all significantly predicted blackout intentions at baseline, which in turn predicted more frequent blackouts both at baseline and 1-month follow-up. Specifically, favorable attitudes and higher norms were associated with greater intention to blackout and self-efficacy to avoid blackout was negatively associated with intention to blackout. Finally, intention to blackout was associated blackout frequency both cross-

sectionally and prospectively. Thus, our findings support the use of the TPB as an explanatory model for understanding the frequency of alcohol-related blackouts. However, the elements in the model varied in their ability to prospectively predict blackout frequency.

Consistent with the theory of planned behavior, norms, attitudes, and self-efficacy all predicted intentions to blackout and blackout frequency at baseline. Prospective analyses revealed that only attitudes toward blackouts predicted blackout frequency through intentions over time. This study complements and extends this work by identifying blackout-specific attitudes as an important antecedent of problematic drinking behaviors. Relative to other theory-based predictors, favorable attitudes toward blackouts was the only TPB variable to demonstrate an indirect effect through blackout intentions, controlling for level of drinking. This is consistent with studies that have shown that attitudes do not directly predict behavior once intentions are controlled for (see Norman & Conner, 2006; Elliott & Ainsworth 2012).

Somewhat surprising was the finding that social norms were not significant predictors of blackouts over time. Among young adults, social norms have been identified as strong and reliable concurrent predictors of alcohol *consumption*, but the relationship to alcohol-related *problems* (such as blackouts) was only indirect, through consumption (Neighbors et al., 2007). Furthermore, longitudinal studies have produced mixed findings on the association between perceived norms and various measures of alcohol use. Although some have found support for prospective relationships between drinking norms and later drinking quantity and frequency (Neighbors, Dillard et al., 2006), others reveal a more nuanced relationship. Wardell and Read (2013) found cross lagged associations from norms to alcohol quantity but not from norms to alcohol frequency. In some cases, the predictive value depends on the type of norm; for example, Larimer et al. (2004) found that descriptive norms predicted alcohol use cross-sectionally, but only injunctive norms predicted alcohol use longitudinally. Furthermore, there are some findings that suggest that when DN are included in models with other predictor variables they do not always predict alcohol consumption (Cooke et al., 2007; Elliott & Ainsworth, 2012). However, much less work has been done linking drinking norms for specific consequences like blackouts to the experience of those outcomes. The norms data collected in this study indicated that less than half of student peers are believed to blackout in any given month and peers are perceived as on the disapproving side of neutral; thus because blackouts are not seen as normative, the influence of norms may be muted, relative to personal attitudes.

One of the contributions of the TPB-informed models is how they highlight the role of intentions in predicting the frequency of blackout drinking. Intention to blackout was a strong cross-sectional and prospective predictor of later blackouts, supporting a rational or planned pathway in the experience of alcohol-related memory impairment among young adults (cf. Gerrard et al., 2008). Although some drinkers assert that blackouts occur unintentionally (e.g., Wombacher et al., 2019), the current findings suggest that at least some drinkers can articulate intentions that translate into behavior. Our own qualitative research reveals that drinkers who experience blackouts endorse nuanced evaluations of the experience; while most report blackouts to be negative experiences, some describe them using neutral or even positive terms (Merrill et al., 2019). More specifically, this prior study

showed that how a blackout is viewed may depend on the context in which it is experienced, with less negative evaluations reported when blackouts were expected to occur, and were experienced among familiar friends and/or in familiar locations. Likewise, it is possible that one's *intentions* to blackout also vary with respect to the planned social and physical context of the drinking event. Taken together, our findings suggest that a better understanding of the factors that contribute to intentions to blackout may be important for preventing future blackout drinking.

The current findings have implications for both clinical work and future research. Indeed, several studies have documented that the strength of personal attitudes is associated with a variety of outcomes, as well as strategies for changing those attitudes. Among those who develop interventions, it is important to consider work focused on the science of attitude change (Petty & Brinol, 2010). The present research documented attitudes as an important predictor of blackouts indirectly through intentions. Several social psychological paradigms could be used as novel attitude change paradigms in the domain of alcohol use. For example, Counter Attitudinal Advocacy (CAA) is a cognitive dissonance based attitude change paradigm that has been used successfully to change other health behaviors (e.g., smoking cessation; Simmons, Heckman, Fink, Small, & Brandon, 2013) and has recently been adapted for use in the alcohol use domain (DiBello, Carey, & Cushing, 2018). Briefly, CAA asks participants to engage in an activity that is contrary to an existing attitude or behavior in order to create cognitive dissonance. For example, an individual who experiences alcohol-related blackout may describe how he/she can avoid that consequence and why avoiding blackouts is a positive approach to alcohol use. This dissonance may be reduced by changing future behavior or attitudes (e.g., reducing drinking to avoid blackout).

Limitations

Several limitations of this study should be noted when interpreting results. First, our sample consisted of college students because they represent a subpopulation of young adults that is at greater risk for alcohol-induced memory impairment (Wetherill and Fromme, 2016). Also, our participants were predominantly White. Both of these factors limit the generalizability of our findings, so it would be important to replicate these findings with a more diverse sample of young adults, including those not attending college. Second, to be eligible for this study, all participants had to endorse at least one blackout in the previous year. Future studies are needed to determine if there are differences in the predictive validity of TPB constructs among young adults who are naïve to blackouts. Third, these data were also limited by the use of self-reported outcomes. However, self-reported estimates of both alcohol use (Leffingwell et al., 2013) correlate with more objective measures of drinking among young adults. Fourth, given financial restrictions on our study design, we had a reduced follow-up sample. Notably, women were disproportionately represented in the participants who volunteered for our follow-up assessment, which may limit the generalizability of prospective analyses. Fourth, we present cross-sectional mediation analyses in the current manuscript and recognize the limited conclusions that can be drawn from such results. However, we maintain the cross-sectional analyses for two reasons: (1) the cross-sectional sample is larger and both sexes are better represented than in the longitudinal sample (in which women are over-represented), and (2) the consistency across both sets of analyses

speaks to the robustness of the findings. On the latter point, a classic case of inconsistency across cross-sectional and longitudinal analyses is Larimer et al. (2004). Finally, with the exception of attitudes, the TPB constructs were operationalized using single items. Although multiple item scales are often preferred to single items for complex constructs (Nunnally & Bernstein, 1994), the literature contains many examples of single items performing as well as multiple item scales, especially when single items are shown to be reliable (Bergkvist & Rossiter, 2007; Wanous et al, 1997). However, because attitudes emerged as the sole prospective predictor in the current analyses, our findings should be replicated using different measurements.

Conclusion

In summary, heavy alcohol use is prevalent among young adults and results in a range of negative health outcomes. Consistent with the TPB, the findings from this study suggest that favorable attitudes toward blackout and higher norms were associated with greater intention to blackout as well as blackout frequency, self-efficacy was a negative predictor a blackout intention, and finally the association between attitude and blackout frequency prospectively was mediated through intentions. Importantly, these findings emerged controlling for baseline levels of alcohol suggesting that these effects persist over and above level of alcohol consumed. Thus, these data indicate their promise for interventions designed to target TPB constructs, namely attitude, in the service of reducing risky drinking behavior.

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Table 1

Descriptive Statistics and Correlations.

	1.	2.	3.	4.	5.	6.	7.	8.
1. BL Drinks Per Week	--							
2. BL Attitudes toward Blackout	.167***	--						
3. BL Injunctive Norm for Blackout	.079	.314***	--					
4. BL Descriptive Norm for Blackout	.229***	.309***	.318***	--				
5. BL Self-efficacy for not Blacking out	-.128*	-.217***	-.004	-.093	--			
6. BL Intentions to Blackout	.231***	.549***	.313***	.429***	-.254***	--		
7. BL Blackout frequency	.367***	.449***	.238***	.431***	-.385***	.533***	--	
8. 1M Blackout frequency	.298***	.406***	.059	.189*	-.317***	.428**	.586***	--
Mean	11.272	1.786	2.934	43.552	80.352	1.963	.849	.658
SD	10.304	.920	1.098	24.018	25.006	1.477	1.011	.884

Note. BL = baseline, 1M = 1-month follow-up

*
 $p < .05$,**
 $p < .01$,***
 $p < .001$.

Unstandardized effects of examining intentions as a mediator of the association between theoretical correlates and alcohol-induced blackout cross-sectionally (N=384).

Table 2.

Criterion	Predictor	b	se	Est/se	Exp(b)	p
Blackout Intentions (measure at baseline)	Sex	-.307	.131	-2.354	.736	.019
	Drinks per week	.010	.007	1.397	1.010	.162
	Attitude toward Blackout	.624	.078	7.970	1.866	<.001
	Injunctive Norms for Blackout	.143	.059	2.440	1.154	.015
	Descriptive Norms for Blackout	.013	.003	4.462	1.013	<.001
	Self-Efficacy for not Blackout	-.007	.003	-2.545	.993	.011
Blackout Frequency (measure at baseline)	Sex	-.271	.124	-2.180	.763	.029
	Drinks per week	.016	.005	3.104	1.016	.002
	Attitude toward Blackout	.168	.063	2.687	1.183	.007
	Injunctive Norms for Blackout	.036	.071	.504	1.037	.614
	Descriptive Norms for Blackout	.014	.003	4.848	1.014	<.001
	Self-Efficacy for not Blackout	-.013	.002	-5.743	.987	<.001
	Intention to Blackout	.105	.043	2.475	1.111	.013

Note. Significant findings in bold.

Unstandardized effects of examining intentions as a mediator of the association between theoretical correlates and alcohol-induced blackout prospectively (N = 120).

Table 3.

Criterion	Predictor	b	se	Est/se	Exp(b)	p
Blackout Intentions (measure at baseline)	Sex	-.307	.131	-2.354	.736	.019
	Drinks per week	.010	.007	1.397	1.010	.162
	Attitude toward Blackout	.624	.078	7.970	1.866	<.001
	Injunctive Norms for Blackout	.143	.059	2.440	1.154	.015
	Descriptive Norms for Blackout	.013	.003	4.462	1.013	<.001
	Self-Efficacy for not Blackout	-.007	.003	-2.545	.993	.011
Blackout Frequency (measure at 1-month)	Sex	-.200	.246	-.812	.819	.417
	Drinks per week	.033	.011	3.026	1.034	.002
	Attitude toward Blackout	.249	.155	1.610	1.283	.107
	Injunctive Norms for Blackout	-.096	.160	-.601	.908	.548
	Descriptive Norms for Blackout	.004	.006	.0672	1.004	.501
	Self-Efficacy for not Blackout	-.007	.006	-1.231	.993	.218
	Intention to Blackout	.242	.121	2.00	1.274	.044

Note. Significant findings in bold.