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## Personality and Alcohol-Related Outcomes among Mandated College Students: Descriptive Norms, Injunctive Norms, and College-Related Alcohol Beliefs as Mediators

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### Abstract

The present study examined three alcohol-perception variables (descriptive norms, injunctive norms, and college-related alcohol beliefs) as mediators of the predictive effects of four personality traits (impulsivity, sensation seeking, anxiety sensitivity, and hopelessness) on alcohol use and alcohol-related consequences in a sample of mandated college students ( $n = 875$ ). Our findings replicated several findings of a previous study of incoming freshman college students (Hustad et al., in press) in that impulsivity and hopelessness had direct effects on alcohol-related problems, sensation seeking and impulsivity had indirect effects on alcohol-related outcomes via college-related alcohol beliefs, and college-related alcohol beliefs predicted both alcohol use and alcohol-related problems. We discuss the implications of our findings for global college student interventions as well as personality-targeted interventions.

### Keywords

personality; descriptive norms; injunctive norms; alcohol beliefs; mandated college students; alcohol use

## 1. Introduction

Alcohol use contributes to numerous adverse experiences among college students, ranging from poor academic performance and social consequences (Perkins, 2002) to injury and death (Hingson, Wenxing, & Weitzman, 2009). Within the college student population, mandated college students may be a particularly high-risk subpopulation of college students

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(Caldwell, 2002; Larimer & Cronce, 2007). Mandated students are required to participate in an alcohol intervention for violating a local/campus alcohol policy, ranging from drinking in a dormitory or underage drinking to alcohol-related hospitalization (Barnett & Read, 2005). In the present study, we examine both distal (i.e., personality) and proximal (i.e., alcohol-related perceptions) antecedents to alcohol-related outcomes in the high-risk population of mandated college students.

Although a diverse array of personality traits have been uncovered, we examined four that have been shown to be related to substance use and have formed the basis of personality-targeted substance use interventions (e.g., Conrod, Castellanos-Ryan, & Mackie, 2011): (1) hopelessness (depressed mood; e.g., Woicik, Stewart, Pihl, & Conrod, 2009), (2) sensation seeking (the conscious pursuit of activities that result in excitement and pleasure; e.g., Cyders, Flory, Rainer, & Smith, 2009); (3) anxiety sensitivity (the fear of arousal-related bodily sensations such as rapid breathing, perspiration, and elevated heart rate; e.g., DeMartini & Carey, 2011), and (4) impulsivity (a tendency to react to internal or external influences promoting alcohol use, without consideration of possible consequences to oneself or others; e.g., Littlefield, Sher, & Wood, 2009; Simons, 2005).

In college student samples, hopelessness, sensation seeking, and impulsivity have been shown to have unique predictive effects on alcohol-related problems (Studies 1 and 2; Woicik et al., 2009), whereas anxiety sensitivity has not. Although there is some evidence that the effect of sensation seeking on binge drinking is partially mediated by response reward bias (Castellanos-Ryan, Rubia, & Conrod, 2011), and that an anxiety sensitivity-targeted intervention reduces coping motives (Conrod et al., 2011), there is very little understanding of what mediates the effects of these personality traits on alcohol-related outcomes. In the present study, we examine three alcohol-related perceptions as mediators of the predictive effects of these personality traits: descriptive norms (DN), injunctive norms (IN), and college-related alcohol beliefs (CRAB).

DN reflect the perceived prevalence, quantity, and/or frequency of drinking by others while IN reflect the extent to which one believes that others approve/disapprove of their drinking (Cialdini, Kallgren, & Reno, 1991). Both DN and IN have been found to directly and independently predict drinking among college students (Borsari & Carey, 2003; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007). CRAB were operationalized by Osberg et al.'s (2010) College Life Alcohol Salience Scale (CLASS). CRAB have been characterized as internalized college drinking norms as well as alcohol beliefs regarding the importance of drinking to the college experience. CRAB have been shown to predict alcohol use and consequences cross-sectionally (Osberg et al., 2010; Osberg, Insan, Eggert, & Billingsley, 2011) and prospectively (Osberg et al., 2012), and have been shown to be a proximal mediator (Osberg et al., 2012).

In a recent study, Hustad et al. (2013) examined the predictive effects of the four personality traits reviewed above on alcohol use and alcohol-related problems via these three alcohol-related perception variables in a sample of incoming freshmen college students. They found that hopelessness and impulsivity had positive direct effects on alcohol-related problems, sensation seeking and impulsivity had significant indirect effects on alcohol use/problems,

and anxiety sensitivity had no unique effects on alcohol outcomes. DN were positively related to alcohol use, IN were negatively related to alcohol use but positively related to alcohol-related problems, and CRAB were positively related to both alcohol use and problems. The predictive effect of sensation seeking on alcohol use/problems was significantly mediated through both CRAB and IN, and the predictive effect of impulsivity on alcohol use/problems was significantly mediated through CRAB and DN. It is unknown if these results obtained using a sample of incoming college students generalize to other populations.

The purpose of the present study is to replicate the model tested by Hustad et al. (2013) in a sample of mandated college students. Based on previous findings, we expected hopelessness and impulsivity to have direct effects on alcohol-related problems, sensation seeking and impulsivity to have indirect effects via alcohol perceptions variables, and anxiety sensitivity to not have significant effects on alcohol-related outcomes.

## 2. Method

### 2.1. Participants and procedures

A total of 2405 mandated college students referred during the 2010-2012 academic year from a large, Mid-Atlantic state university were screened for eligibility for the present study. All mandated students were required to pay a \$200 program fee, complete a computerized baseline assessment, receive a one hour brief motivational intervention (Dimeff, Baer, Kivlahan, & Marlatt, 1999), and complete a 1 month follow-up. Students were not eligible if they were under 18 years old ( $n = 20$ ), if their score on the Alcohol Use Disorders Identification Test (AUDIT; Bradley, McDonell, Kivlahan, Diehr, & Fihn, 1998) was  $\geq 16$  ( $n = 307$ ), or if they reported suicidal ideation ( $n = 36$ ). Of 2,038 eligible students who were invited to participate, 45.7% ( $n = 932$ ) consented to participate. Participants were entered into a raffle to win 1 of 20 \$100 gift cards if they completed a 3-month follow-up. The present study examines only the baseline assessment. Given that alcohol problems was the ultimate outcome variable, non-drinkers ( $n = 57$ ) were dropped from analyses, leaving an analytic sample of 875 participants who reported drinking in a typical week during the past month. Participants were 37.8% female with an average age of 19.26 ( $SD = 1.28$ ). Self-reported race/ethnicity was 85.4% White, 7.7% Hispanic, 5.6% Asian, 4.9% Black or African American, and 3.4% was classified as other (participants could endorse multiple racial/ethnic groups). All procedures for this study were approved by the university's Institutional Review Board.

### 2.2. Measures

The measures given in the present study were identical to those administered in Hustad et al. (in press) using a sample of incoming college students. Descriptive statistics for all study variables and information regarding the internal consistency of each multi-item inventory are shown in Table 1.

Four personality traits were assessed using the 23-item Substance Use Risk Profile Scale (Woicik et al., 2009): hopelessness, sensation seeking, anxiety sensitivity, and impulsivity. Descriptive norms (DN) were assessed with the Drinking Norms Rating Form (Baer, Stacy,

& Larimer, 1991). Injunctive norms (IN) were assessed with a single item that asked participants to select the response that they believe best represents “the most common attitude” among college students at the host site about alcohol use (Perkins & Berkowitz, 1986) using a Likert response scale (1 = “drinking is never a good thing to do” to 5 = “getting drunk frequently is okay if that’s what the individual wants to do”). College-related alcohol beliefs (CRAB) were measured by the 15-item College Life Alcohol Salience Scale (CLASS; Osberg et al., 2010) Alcohol use was assessed using a modified version of the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985), which quantified alcohol use as the number of drinks consumed during a typical week in the past 30 days. Alcohol-related negative consequences in the past 30 days were assessed using the 24-item Brief Young Adult Alcohol Consequences Questionnaire (BYAACQ, Kahler, Strong, & Read, 2005).

### 2.3. Data Analysis Plan

Path analysis using Mplus 6.12 (Muthén & Muthén, 1998-2012) was conducted to examine a model in which personality variables (impulsivity, sensation seeking, hopelessness, and anxiety sensitivity) were modeled as distal determinants of alcohol outcomes, and alcohol-related perceptions (DN, IN, and CRAB) were modeled as more proximal antecedents to alcohol use and alcohol-related problems. Gender was modeled as a covariate to account for known gender differences in alcohol use and problems (e.g., Johnston, O’Malley, Bachman, & Schulenberg, 2009; Perkins, 2002). We examined the total, direct, and indirect effects of each predictor variable on outcomes using the bias-corrected bootstrap based on 10,000 bootstrapped samples (Efron & Tibshirani, 1993), which provides a powerful test of mediation (Fritz & MacKinnon, 2007), and is robust to small departures from normality (Erceg-Hurn & Mirosevich, 2008). Parameters were estimated using maximum likelihood estimation, and missing data were handled using full information maximum likelihood, which is more efficient and has less bias than alternative procedures (Enders, 2001; Enders & Bandalos, 2001).

## 3. Results

The descriptive statistics, correlations, and Cronbach’s alphas for the variables included in the path model are reported in Table 1. We examined the direct effects of 1) personality on DN, IN, CRAB, alcohol use, and alcohol-related problems; and 2) DN, IN, and CRAB on alcohol use and alcohol-related problems. Our model also permitted the examination of indirect (i.e., mediated) effects of 1) personality on alcohol use via DN, IN, and CRAB; 2) personality on alcohol problems, via DN, IN, CRAB, and alcohol use; and 3) DN, IN, and CRAB on alcohol problems via alcohol use. All significant direct effects of personality, DN, IN, and CRAB on alcohol outcomes are shown in Figure 1. All direct, indirect, and total effects of personality on alcohol-related outcomes are shown in Table 2. To control for gender, a dummy-coded gender variable (0 = men, 1 = women) was entered as a predictor of all other variables. Given that the model was fully saturated (i.e., the model implied covariance matrix equals the observed covariance matrix), model fit indices are not reported.

### 3.1. Direct Effects

**3.1.1. Personality**—None of the personality traits had significant direct effects on alcohol use, but both hopelessness and impulsivity had positive direct effects on alcohol-related problems. Each personality trait had a distinct pattern of relationships with the alcohol perceptions variables. Hopelessness was positively related to DN only, impulsivity was positively related to CRAB only, and anxiety sensitivity was negatively related to IN only. Sensation seeking was positively related to both DN and CRAB.

**3.1.2. Alcohol-related perceptions**—Each alcohol perceptions variable had a significant predictive effect on alcohol use. DN and CRAB were positively associated with alcohol use, and IN were negatively associated with alcohol use. Of these three alcohol-perception variables, only CRAB had a significant direct effect on alcohol-related problems.

### 3.2. Indirect Effects

**3.2.1. Personality**—Each personality trait had significant indirect effects on alcohol use and alcohol-related problems, yet the pattern of indirect effects were different given that each of these traits were related to different alcohol perception variables. Hopelessness had a significant indirect on alcohol use via DN, and a double-mediated indirect effect on alcohol problems via DN and alcohol use (i.e., hopelessness→DN→alcohol use→alcohol-related problems). Sensation seeking had indirect effects on alcohol use via DN and CRAB, a single-mediator effect on alcohol-related problems via CRAB, and double-mediated paths via DN and alcohol use as well as CRAB and alcohol use. Anxiety sensitivity had an indirect effect on alcohol use via IN, and a double-mediated effect on alcohol-related problems via IN and alcohol use. Impulsivity had an indirect effect on alcohol use via CRAB, and two indirect effects on alcohol-related problems via CRAB as well as CRAB and alcohol use.

### 3.3. Covariate Effects

Although not the primary purpose of the present study, we found several predictive effects of gender. Specifically, in the path analysis (which controls for all other predictors in the model), men reported higher sensation-seeking, DN, CRAB, and alcohol use, whereas women reported higher anxiety sensitivity, IN, and alcohol-related problems.

## 4. Discussion

We replicated several of the findings from Hustad et al. (2013): 1) hopelessness and impulsivity had direct effects on alcohol-related problems, but no direct effects on alcohol use, 2) CRAB mediated the predictive effects of sensation seeking and impulsivity on both alcohol use and alcohol-related problems, 3) DN and CRAB were positively related to alcohol use, and IN were negatively related to alcohol use, and 4) CRAB had a direct effect on alcohol-related problems. Importantly, our results were consistent with the large literature suggesting DN as an important risk factor for increased alcohol use (Borsari & Carey, 2001, 2003) and supports the growing evidence that CRAB is a risk factor for increased alcohol use and alcohol-related problems (Hustad et al., in press; Osberg et al., 2010, 2011, 2012). However, there were several notable differences between these two studies. We found

multiple significant effects that were not significant in Hustad et al. (2013): 1) the negative relationship between anxiety sensitivity and IN, 2) the indirect effects of hopelessness on alcohol use/problems via DN, 3) the indirect effects of anxiety sensitivity on alcohol use/problems via IN, and 4) the indirect effects of sensation seeking on alcohol use/problems via DN. We also found some relationships were not significant in the present study that were significant in Hustad et al. (2013): 1) the indirect effects of impulsivity on alcohol use/problems via DN, 2) the indirect effects of sensation seeking on alcohol use/problems via IN, and 3) the direct effect of injunctive norms on alcohol-related problems.

There are several plausible explanations for these discrepancies. First, the present study had a substantially larger sample size ( $n = 875$  vs.  $n = 490$ ), leading to more statistical power. This explanation could account for the fact that we found about a dozen more significant effects than Hustad et al. (2013), but does not immediately explain why certain effects that were significant in Hustad et al. (2013) were not found to be significant in the present study. For example, the present study found that DN mediated the predictive effects of sensation seeking (but not impulsivity) on alcohol use/problems, whereas Hustad et al. (2013) found that DN mediated the predictive effects of impulsivity (but not sensation seeking) on alcohol use/problems. Although these traits are related to one another, the modest correlations between these traits in both studies ( $r_s = .21$  and  $.30$ ) does not imply that multi-collinearity is leading to these inconsistent findings.

In an attempt to explain some of these discrepancies that might be related to differences in sample characteristics, we compared key variables between the samples in these two studies (we report Cohen's  $d$  here, but complete analyses are available from the authors). Interestingly, there were no significant differences in alcohol use ( $d = .031$ ) or alcohol-related problems ( $d = .060$ ) between the incoming student sample (Hustad et al., in press) and the mandated student sample. The mandated student sample had modestly lower CRAB ( $d = .284$ ) and DN ( $d = .261$ ) compared to the incoming student sample but very similar IN ( $d = .028$ ). As the mandated students had been in college for a longer period of time, the DN differences may reflect a modest correction to DN that occurs with increased exposure to college student drinking environments. However, consistent with previous research (Borsari & Carey, 2001, 2003), both samples rather similarly overestimated how much other college students' drink compared to themselves (mandated student sample:  $d = .844$ , incoming student sample:  $d = .886$ ). The largest differences between the two samples was that the mandated student sample had higher anxiety sensitivity ( $d = .389$ ), hopelessness ( $d = .509$ ), sensation seeking ( $d = .720$ ), and impulsivity ( $d = 1.427$ ). The substantial differences between these two samples in impulsivity may account for different observed relationships between impulsivity and DN. Specifically, in the present study, there was not a significant relationship between impulsivity and DN among mandated students, which may be attenuated given the relatively high level of impulsivity and relative homogeneity (i.e., lower standard deviation) in the present sample compared to the incoming student sample, leading to a restriction of range problem. Overall, most relationships observed in the present study were attenuated compared to the incoming student sample, providing more merit to the restriction of range problem that occurs with a more homogenous population.



Despite the fact that these differences may be accounted for by differences between the mandated student and incoming freshmen populations, given the preliminary nature of these results, we do not wish to overinterpret these relatively small differences across studies. For this reason, we focus most of our discussion on the findings that were consistent across both college student populations.

In both incoming freshmen and mandated college students, CRAB have been found to predict both alcohol use and alcohol-related problems when controlling for several other variables that have been shown to be related to alcohol-related outcomes (i.e., personality, DN, and IN). Further, CRAB mediates the predictive effects of sensation seeking and impulsivity. Thus, CRAB reflect distinct alcohol perceptions that have yet to be specifically targeted in alcohol interventions. We believe these findings have direct clinical implications. Specifically, CRAB could be targeted in the context of brief interventions designed for incoming, matriculated, and mandated college students. For example, it is possible to target CRAB in social norms interventions (see Moreira, Smith, & Foxcroft, 2009 for review). In addition, CRAB might decrease following interventions that are designed to encourage alcohol-free leisure activities (Murphy, Barnett, & Colby, 2006; Yarnal, Qian, Hustad, & Sims, 2013). Moreover, potential intervention strategies might also include a personality-targeted intervention, especially for students who screen high in impulsivity and sensation seeking, either as first-line treatment (Conrod et al., 2011) or for students who continue to drink heavily and/or experience consequences after receiving an intervention (i.e., stepped care; Borsari et al., 2012).

Personality-targeted interventions may be particularly appropriate for the mandated student population given their relative elevations in all four of the risk-promoting personality traits assessed in the present study. Personality-targeted alcohol interventions typically provide personality-specific coping skills interventions to individuals with a specific personality risk profile (e.g., elevated sensation seeking or elevated impulsivity). The evidence is mounting that personality-targeted alcohol interventions are effective for adolescents who have largely not yet initiated their alcohol consumption (Conrod, Castellanos, & Mackie, 2008; Conrod, Castellanos-Ryan, & Mackie, 2011; Conrod, Stewart, Comeau, & Maclean, 2006; Conrod, O'Leary-Barrett, Newton, Topper, Castellanos-Ryan, Mackie, & Girard, 2013; O'Leary-Barrett, Mackie, Castellanos-Ryan, Al-Khudhairy, & Conrod, 2010). Additional work is needed to determine if these personality-targeted interventions are also effective at reducing alcohol use in college student populations more generally and mandated students specifically who have already initiated problematic alcohol consumption.

Although we replicated several findings from a previous study with incoming freshmen (Hustad et al., in press) in our mandated college student sample, a number of limitations should be noted. As the present study was cross-sectional, we are unable to make causal attributions. However, there is experimental evidence from randomized controlled trials supporting the causal effects of both personality on alcohol outcomes (e.g., personality-targeted interventions, Conrod et al., 2013) and alcohol perceptions on alcohol outcomes (e.g., descriptive norms; Borsari & Carey, 2000; Doumas, 2010; Neighbors et al., 2004), giving support for the model tested in the present study. In addition, the generalizability of our study is limited by the fact that our sample came from a single university. Future

research examining these relationships experimentally and longitudinally with representative samples would greatly enhance our understanding of the relationships between personality, alcohol perceptions, and alcohol-related outcomes.

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JH designed and implemented the study. MP wrote the first draft of the manuscript and conducted the analyses. Both authors edited and approved of the final manuscript.

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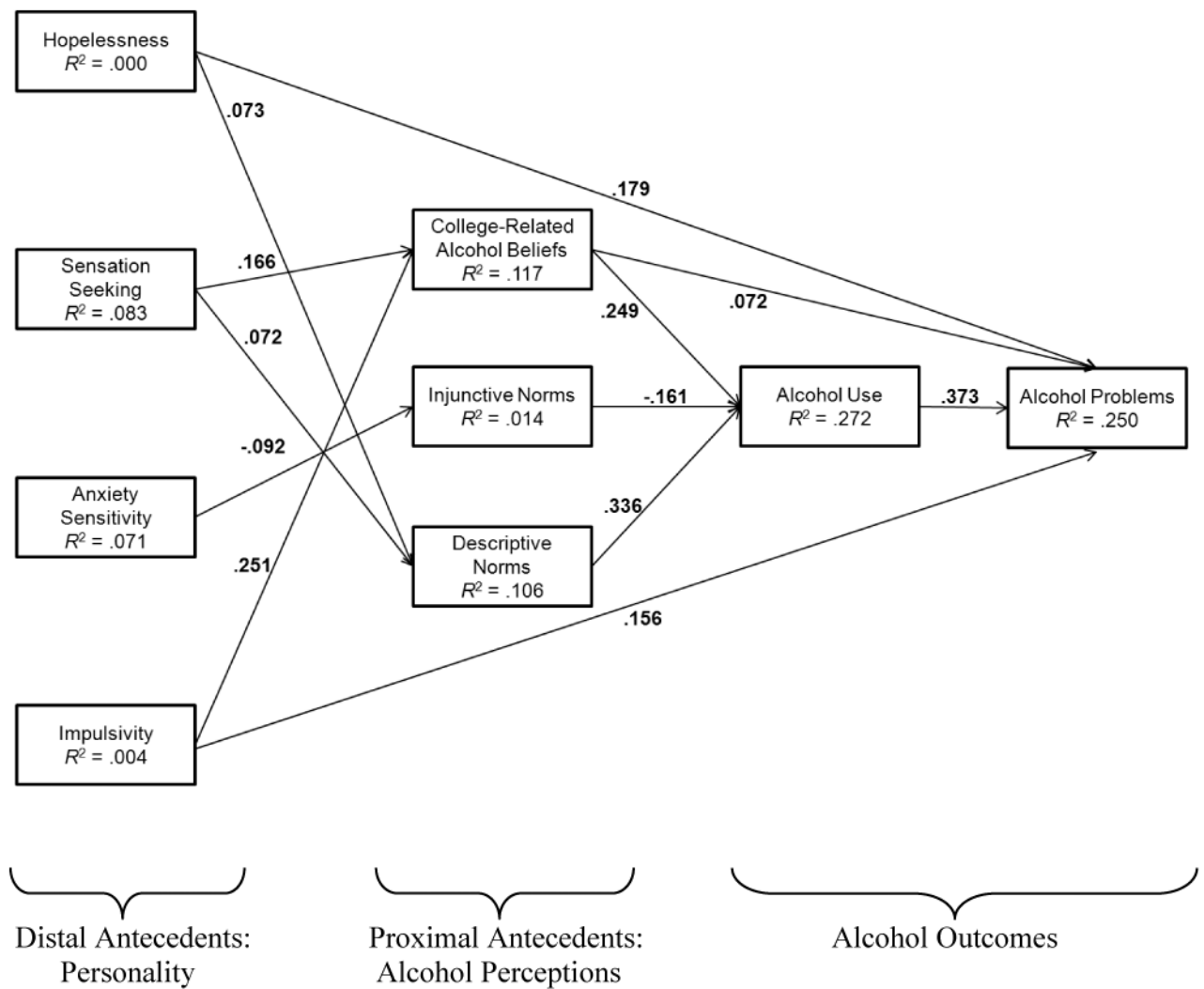


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### Highlights

- We examined associations between 4 personality traits and alcohol-related outcomes
- We used path analysis in a sample of mandated college students (N=875)
- Alcohol perceptions mediated the personality-alcohol outcome associations
- We largely replicated findings from an incoming college student sample
- Implications for global and targeted college student interventions are discussed



**Figure 1.** Path model of associations among personality traits, alcohol-related perceptions, alcohol use, and alcohol problems. Only significant effects ( $p < .05$ ) are shown. Although the correlations among personality variables as well as the correlations among alcohol perception variables were estimated, they are not shown for reasons of parsimony. Gender was controlled for by entering it as an exogenous predictor of all study variables; these effects are also omitted for clarity.

**Table 1**  
**Correlations, means, standard deviations, and Cronbach's alphas for study variables**

	1	2	3	4	5	6	7	8	9	10	M	SD
1. Hopelessness	<u>.87</u>										10.78	3.05
2. Sensation Seeking	<b>-.09</b>	<u>.68</u>									16.70	3.14
3. Anxiety Sensitivity	<b>.08</b>	<b>-.20</b>	<u>.70</u>								12.37	2.50
4. Impulsivity	<b>.22</b>	<b>.21</b>	<b>.03</b>	<u>.66</u>							9.80	2.07
5. College-Related Alcohol Beliefs (CRAB)	<b>.07</b>	<b>.23</b>	<b>-.05</b>	<b>.29</b>	<u>.84</u>						40.16	7.95
6. Injunctive Norms (IN)	<b>.02</b>	<b>-.02</b>	<b>-.06</b>	<b>.01</b>	<b>.08</b>	----					2.26	0.73
7. Descriptive Norms (DN)	<b>.08</b>	<b>.16</b>	<b>-.12</b>	<b>.11</b>	<b>.24</b>	<b>.21</b>	<u>.77</u>				17.54	8.51
8. Alcohol use	<b>.06</b>	<b>.19</b>	<b>-.06</b>	<b>.18</b>	<b>.35</b>	<b>-.08</b>	<b>.40</b>	----			10.96	7.00
9. Alcohol Problems	<b>.24</b>	<b>.04</b>	<b>.07</b>	<b>.27</b>	<b>.24</b>	<b>-.03</b>	<b>.11</b>	<b>.39</b>	<u>.78</u>		3.01	3.08
10. Gender (men=0, women=1)	<b>-.02</b>	<b>-.29</b>	<b>.27</b>	<b>-.06</b>	<b>-.09</b>	<b>.07</b>	<b>-.30</b>	<b>-.23</b>	<b>.04</b>	----	0.38	0.49

Note. Significant correlations ( $p < .05$ ) are in bold typeface for emphasis. Underlined values on the diagonal represent Cronbach's alphas.

**Table 2**  
**Total, Direct, and Indirect Effects of Personality on Alcohol Outcomes via DN, IN, and CRAB**

Predictors:	Hopelessness			Sensation Seeking			Anxiety Sensitivity			Impulsivity		
	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>
Outcome: Alcohol Use	<b>.04</b>	<b>.08</b>	<b>.019</b>	<b>.07</b>	<b>.16</b>	<b>&lt;.001</b>	-.01	-.02	.620	<b>.08</b>	<b>.27</b>	<b>&lt;.001</b>
Total Indirect												
Specific Indirect Effects												
DN	<b>.03</b>	<b>.06</b>	<b>.038</b>	<b>.02</b>	<b>.05</b>	<b>.035</b>	-.02	-.05	.119	.02	.07	.122
IN	.00	.01	.583	.00	.01	.552	<b>.02</b>	<b>.04</b>	<b>.035</b>	-.00	-.01	.515
CRAB	.01	.02	.375	<b>.04</b>	<b>.09</b>	<b>&lt;.001</b>	-.01	-.02	.553	<b>.06</b>	<b>.21</b>	<b>&lt;.001</b>
Direct Effect	.00	.00	.975	.04	.08	.237	.01	.04	.663	.06	.20	.084
Total Effect	.04	.08	.267	<b>.11</b>	<b>.23</b>	<b>.001</b>	.01	.01	.877	<b>.14</b>	<b>.47</b>	<b>&lt;.001</b>
Outcome: BYAACQ	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>	$\beta$	<i>B</i>	<i>p</i>
Total Indirect	.01	.01	.336	<b>.05</b>	<b>.05</b>	<b>&lt;.001</b>	.00	.00	.838	<b>.07</b>	<b>.10</b>	<b>&lt;.001</b>
Specific Indirect Effects												
DN	-.00	-.00	.344	-.00	-.00	.343	.00	.00	.389	-.00	-.00	.369
IN	.00	.00	.957	.00	.00	.954	.00	.00	.921	.00	.00	.952
CRAB	.00	.00	.430	<b>.01</b>	<b>.01</b>	<b>.040</b>	-.00	-.00	.589	<b>.02</b>	<b>.03</b>	<b>.036</b>
alcohol use	.00	.00	.975	.01	.01	.239	.01	.01	.665	.02	.03	.081
DN→alcohol use	<b>.01</b>	<b>.01</b>	<b>.044</b>	<b>.01</b>	<b>.01</b>	<b>.042</b>	-.01	-.01	.126	.01	.01	.131
IN→alcohol use	.00	.00	.585	.00	.00	.555	<b>.01</b>	<b>.01</b>	<b>.039</b>	-.00	-.00	.518
CRAB→alcohol use	.00	.00	.381	<b>.02</b>	<b>.02</b>	<b>.001</b>	-.00	-.00	.557	<b>.02</b>	<b>.04</b>	<b>&lt;.001</b>
Direct Effect	<b>.18</b>	<b>.18</b>	<b>&lt;.001</b>	-.01	-.01	.716	.04	.04	.254	<b>.16</b>	<b>.23</b>	<b>&lt;.001</b>
Total Effect	<b>.19</b>	<b>.19</b>	<b>&lt;.001</b>	.04	.04	.308	.04	.05	.246	<b>.22</b>	<b>.33</b>	<b>.000</b>

Note. All parameter estimates and significance test are based on 10,000 bootstrapped samples. Significant effects ( $p < .05$ ) are in bold typeface for emphasis. DN = descriptive norms. IN = injunctive norms. CRAB = college-related alcohol beliefs. BYAACQ = Brief Young Adult Alcohol Consequences Questionnaire.