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Drinking, Abstinence, and Academic Motives: Relationships Among Multiple Motivational Domains and Alcohol Use in College Students

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Abstract

Background—Drinking, abstinence, and academic motives have been previously linked with alcohol consumption in high school and college students; however, little research has examined the impact of such sources of motivations concurrently.

Objective—Drawing from self-determination theory (SDT; Ryan and Deci, 2000), the current study tested the hypothesis that alcohol-related and academic motives would be associated with one another along internal vs. external focused dimensions. We also examined the relative influence of these motives on alcohol consumption.

Methods—College students ($N = 226$) completed self-report measures assessing drinking motives, abstinence motives, academic motives, and alcohol-related outcomes.

Results—Findings suggest that drinking motives are related to abstinence motives but not academic motives. Both forms of alcohol-related motives were related to alcohol use and consequences; no associations between academic motives and alcohol variables were observed.

Conclusions/Importance—The lack of associations among academic motives, alcohol-related motives, and alcohol variables departs from previous findings suggesting that academic motives impact alcohol use. The current findings indicate a greater understanding of the interplay of motivational sets related to salient issues for youth, such as academics, is needed in order to expand intervention models for alcohol use in such populations.

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Keywords

self-determination theory; drinking motives; college students

1. Introduction

Excessive alcohol use in college leads to various adverse consequences, including diminished academic performance (Johnston et al., 2014; Kuntsche et al., 2005). Considerable research has examined drinking motives (DM), motives not to drink (MND), and alcohol use in college students (Epler et al., 2009; Huang et al., 2011; Read et al., 2003; Rinker and Neighbors, 2013). Given the importance of academic performance in college, the dearth of research on academic motivation (AM) and alcohol use is surprising (Vaughan et al., 2009; Singleton, 2007). To date, no studies have examined the role of academic and alcohol-related motives concurrently on alcohol use and associated outcomes in college students. A better understanding of the relationships among these domains of motivation and relevant outcomes may help practitioners target and tailor intervention/prevention programs.

1.1 Academic Motives

Motives are contextually dependent reasons for engaging in a behavior (Cooper et al., 2015), and each domain of behavior has generated native frameworks for understanding motives. A dominant model in the AM literature is self-determination theory (SDT; Ryan and Deci, 2000). According to this taxonomy, motives exist along a continuum from externally to internally focused: *external regulation* is associated with the salience of external reward and/or punishment contingencies, *introjection* with a focus on internal pressure or conflict based on the opinions of others, and *identification* with a conscious valuing of activity. *Intrinsic motivation*, or engaging in activity for its own sake, is the optimal form of motivation and the most internally focused (Ryan and Deci, 2000; Vansteenkiste et al., 2009). The alcohol literature has paid little attention to this model, possibly leading to mixed findings regarding relations between AM and alcohol use. For example, high levels of global AM have been associated with increased frequency of drinking (Singleton, 2007), while other research suggests that AM serves as a protective factor (Vaughan et al., 2009). Applying the SDT framework in high school students, Wormington et al. (2011) found that intrinsic AM was negatively correlated with lifetime and current drinking while external regulation AM was positively correlated with current drinking. Given developmental and situational differences between high school and college, it is unknown whether similar patterns would emerge in college students.

1.2 Drinking Motives

Cooper's (1994) model is central to our current understanding of DM. This framework posits two underlying dimensions, an internal-external dimension and a positive-negative reinforcement dimension. Social motives (external-positive) reflect reasons associated with social facilitation; conformity motives capture drinking to fit in and avoid social consequences (external-negative); enhancement reasons relate to having fun (internal-positive); coping reasons involve ameliorating negative affect (internal-negative). College

students most frequently report drinking for social and enhancement motives (Kuntsche et al., 2005; LaBrie et al., 2007). Each motive is associated with different drinking-related outcomes: social and enhancement with drinking quantity/frequency, and more so in the case of enhancement, potential hazardous drinking; coping with alcohol-related problems; with results for conformity being mixed (Cooper et al., 2015). When considering the SDT model for AM in relation to Cooper's DM framework, taxonomic similarities along the internal-external dimension are clearly apparent.

1.3 Motives Not to Drink

MND may have important predictive value for college students' behavior (Anderson et al., 2013; Epler et al., 2009; Rinker and Neighbors, 2013). Compared to drinkers, abstainers endorsed reasons pertaining to lifestyle choices (e.g., religion, personal values) as more important than interference reasons (e.g., school obligations; Huang et al., 2011). Surprisingly, endorsement of MND based on perceived/experienced negative consequences predicted lower abstinence rates in college students over time (Epler et al., 2009). While an explicit internalexternal dimension has not been articulated for MND, motives focused on external constraints (peer disapproval/norm, legal concerns) and internally-focused factors (lifestyle/personal values, interference/weight, lack of interest) fit such a framework and may influence drinking in different ways.

1.4 Hypotheses

We hypothesized positive associations between AM, DM and MND such that more externally-focused motives would be positively associated with one another rather than internally-focused motives. We expected intrinsic AM would be protective against alcohol consumption and alcohol-related consequences while external regulation AM would be related with greater consumption and consequences, as in Wormington et al. (2011). We also expected to replicate previous patterns of associations between DM, MND, and alcohol use and consequences (Cooper et al., 2015; Epler et al., 2009; Huang et al., 2011).

2. Methods

2.1 Participants

College students ($N = 226$, 74.5% female) in the Pacific Northwest, aged 18–28 years old ($M = 20.3$, $SD = 1.8$), completed study procedures. Based on available data ($n = 30$ did not complete demographic questions), 81.7% of the sample self-identified as white, 9.9% as Asian American, 1.6% as African American, and 6.8% as Other/Biracial. Approximately 7% of the sample identified as Latino/a. Seventy-five percent of students attended a private college, 21% attended a public university; the remainder attended community college.

2.2 Procedure

Participants were recruited from multiple college campuses using fliers advertising entry into a lottery for a \$50 gift card in exchange for completing an online survey. Measures related to drinking variables, drinking motivation, and academic motivation were presented in random order. Demographic information was collected after the drinking and motivation questionnaires in order to prevent the activation of stereotype threat (Steele and Aronson,

1995) or priming. Relevant IRB approval was obtained for all study procedures and participants provided informed consent prior to study participation.

2.3 Measures

AM were measured using the 16-item Academic Self-Regulation Scale (ASRS; Ryan and Connell, 1989), which assesses students' reasons for studying using the SDT framework on a 5-point Likert scale with higher scores indicating greater motivation (Table 1). The ASRS is valid for use with college students (Vansteenkiste et al., 2009), and all four subscales demonstrated acceptable reliability in the current sample (Table 1).

DM were measured via the 20-item Drinking Motives Questionnaire-Revised (DMQ-R; Cooper, 1994), which assesses reasons why participants might consume alcohol on a 4-point scale with higher scores indicating greater motivation to drink. The DMQ-R has demonstrated strong reliability and validity (Cooper, 1994). In the current sample, all four subscales demonstrated acceptable reliability (Table 1).

MND were measured using a section from the Survey of College Alcohol Norms and Behavior (SCANB; Huang et al., 2011) which inquires about 23 reasons why a participant might choose to abstain from drinking and asks the participant to rate level of importance on a 3-point scale with higher scores indicating stronger motivation to abstain. The six SCANB subscales demonstrated acceptable reliability in this sample (Table 1).

Alcohol use was measured through the Drinking Norms Rating Form (DNRF; Baer et al., 1991) where participants estimate the typical and maximum number of drinks consumed for each day of the week over the past month. The DNRF has been shown to be reliable and valid in college samples (Larimer et al., 1997) and demonstrated acceptable reliability in the current sample (Table 1). Frequency of negative consequences experienced as a result of drinking within the last year was assessed using the 48-item Young Adult Alcohol Consequences Questionnaire (YAACQ; Read et al., 2006). The YAACQ has demonstrated strong validity and test-retest reliability (Read et al., 2007) and was highly reliable in the current sample (Table 1). Problem severity was measured using the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 2001); higher scores suggest a greater likelihood of an alcohol use disorder. The AUDIT has been validated for identifying high-risk drinking in collegiate samples (Kokotailo et al., 2004), and showed acceptable reliability within this sample (Table 1).

2.4 Statistical Analyses

Statistical analyses were performed using STATA 13.1 (StataCorp, 2013). Pairwise correlations tested associations between DM, MND, and AM subscales. Multivariate regression models examined the effect of motives on the four alcohol use variables (average drinks, maximum drinks, consequences, problem severity); one model for each motives domain (drinking, abstinence, academic). Multiple regression models compared the relevant effects of DM vs. AM and MND vs. AM on alcohol variables simultaneously.

3. Results

3.1 Associations Among Drinking, Abstinence, and Academic Motives

A bonferroni correction to the $p < .05$ level was applied to control for multiple pairwise comparisons. Correlations within the same motive domain are not reported for the sake of brevity, but are available upon request. Across alcohol domains, alcohol nonessential MND (i.e. alcohol is not required to enjoy oneself) were negatively associated with DM: social ($r = -.31, p < .001$), coping ($r = -.33, p < .001$), and enhancement ($r = -.34, p < .001$). DM and MND subscales were not significantly associated with AM.

3.2 Effect of Drinking, Abstinence, and Academic Motives on Alcohol Variables

Only adjusted R^2 estimates are reported. When all four DM were entered as predictors, DM significantly predicted average drinks per week, $F(5, 186) = 17.69, R^2 = .28, p < .001$, maximum drinks per week, $F(5, 186) = 16.20, R^2 = .26, p < .001$, problem severity, $F(5, 186) = 27.37, R^2 = .38, p < .001$, and alcohol-related consequences measured cross-sectionally, $F(5, 186) = 32.84, R^2 = .42, p < .001$. Both enhancement and coping DM emerged as significant for all alcohol outcomes (Table 2). Conformity DM were not associated with alcohol outcomes; social DM reached significance for alcohol-related consequences. As a set, MND significantly predicted average drinks per week, $F(7, 183) = 3.31, R^2 = .10, p = .004$, maximum drinks per week, $F(7, 183) = 4.44, R^2 = .13, p < .001$, problem severity, $F(7, 183) = 6.17, R^2 = .17, p < .001$, and alcohol-related consequences, $F(7, 183) = 5.67, R^2 = .16, p < .001$. Alcohol nonessential MND were negatively associated with all alcohol outcomes (Table 2); legal MND were negatively associated with alcohol-related consequences and problem drinking history MND was positively associated with alcohol-related consequences. Similar results were observed when DM and MND were entered into the models concurrently; small minor changes in individual effects were observed (e.g., the effect of alcohol nonessential MND failed to reach significance for average drinks per week). AM were unrelated to alcohol variables. As such, models including alcohol-related and academic domains were not tested.

4. Discussion

Alcohol-related and academic motives have been linked to alcohol use independently. This was the first study, to the best of our knowledge, to examine the relationships between these motivational sets and drinking concurrently. Associations between DM and MND were largely non-significant; the only relationships to emerge were between alcohol nonessential MND and various DM (social, coping, enhancement). Interestingly, AM were not related to alcohol use or alcohol-related motivation, suggesting relative independence of alcohol-related and academic domains in this sample of college students. This is in contrast to previous research indicating that AM can be both a protective and a risk factor for alcohol use in high school (Wormington et al. 2011). Differing academic pressures and level of motivation between high school and college may have influenced these differences.

Overall, these findings contribute to a growing body of work examining relations between DM, MND, and alcohol-related variables as well as expanding the limited literature on AM

and alcohol use. As alcohol use and associated problems are of particular concern during adolescence and emerging adulthood, better understanding the interplay of motivational sets relating to salient issues for youth, such as academics, allows for the expansion of relevant models for alcohol use in this population. Based on the current findings, academic motivation classified according to SDT is not associated with alcohol use or alcohol-related motives in college students. Through subsequent validation of such models, alcohol prevention and intervention strategies can be better tailored to the needs of youth with differing types of motivations (Anderson et al., 2011; Brown and D'Amico, 2001). For example, findings indicate that college students should benefit from prevention strategies regardless of their AM, and students who consider alcohol nonessential for enjoyment may not need to be targeted.

Further research is needed to examine whether these findings hold in larger, more diverse samples representing differing educational levels and types of educational institutions where the effects of development and school type can be explicitly tested. Future studies should also investigate the relative contribution of academic and alcohol motives using longitudinal designs.

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Highlights

- We examined the role of academic and drinking motives on college alcohol use
- Academic motives were unrelated to drinking motives or alcohol use
- Drinking and abstinence motives each were associated with alcohol use
- Greater understanding of the interplay of motivational sets is needed to expand interventions

Table 1

Mean (SD) scores and internal reliability for academic motives, alcohol-related motives, and alcohol use variables.

Scale	M	SD	Range		α
			Min.	Max.	
AM					
Intrinsic	3.74	1.03	1	5	0.92
Identified	4.39	0.80	1.5	5	0.87
Introjected	3.12	1.08	1	5	0.85
External	2.41	1.02	1	5	0.88
DM					
Social	2.83	1.14	1	5	0.88
Coping	1.80	0.81	1	4	0.86
Enhancement	2.60	1.13	1	5	0.89
Conformity	1.39	0.60	1	4.5	0.82
MND					
Lifestyle/personal values	0.75	0.49	0	2	0.78
Peer disapproval/norms	0.43	0.46	0	2	0.73
Interference/weight	0.86	0.58	0	2	0.62
Legal concerns	0.46	0.58	0	2	0.78
Alcohol nonessential	1.29	0.67	0	2	0.89
Problem drinking history	0.42	0.67	0	2	0.68
Alcohol Use					
Average drinks/week	11.83	6.61	1	45	0.77
Maximum drinks/week	15.46	10.50	2	59	0.84
Alcohol problems	7.69	7.66	0	41	0.92
Problem severity	2.42	3.25	0	15	0.75

Note: α represents Cronbach's alpha.

Min. = minimum score, Max. = maximum score, AM academic motives as measured via the Academic Self-Regulation Scale, DM = drinking motives as measured via the Drinking Motives Questionnaire-Revised, MND = motives not to drink as measured via the Survey of College Alcohol Norms and Behavior.

Table 2

Effects of alcohol-related motive categories on alcohol variables in a multivariate regression model.

Model	Effect	Dependent Variable			
		Average drinks/week	Maximum drinks/week	Consequences	Problem Severity
DM	Social	<i>ns</i>	<i>ns</i>	1.45 (.62) *	<i>ns</i>
	Enhance	1.77 (.52) ***	2.40 (.84) **	1.83 (.55) ***	.81 (.24) ***
	Conformity	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Coping	1.65 (.65) *	2.69 (1.05) *	2.16 (.66) ***	1.44 (.29) ***
MND	Lifestyle/personal values	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Peer disapproval/norms	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Interference/weight	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
	Legal concerns	<i>ns</i>	<i>ns</i>	-2.21 (1.03) *	<i>ns</i>
	Alcohol nonessential	-2.36 (.77) **	-4.55 (1.21) ***	-3.51 (.84) ***	-1.90 (.36) ***
	Problem drinking history	<i>ns</i>	<i>ns</i>	1.88 (.91) *	<i>ns</i>

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

Values represent the regression coefficient (standard error) and are only reported for significant effects.

DM = drinking motives; MND= motives to limit or abstain from alcohol; Drinking and abstinence motives were entered into separate models.