The Roles of Negative Affect and Coping Motives in the Relationship Between Alcohol Use and Alcohol-Related Problems Among College Students

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Abstract

Objective—Although studies have consistently indicated that among college students alcohol use and the likelihood of experiencing alcohol-related problems are related it is possible that additional factors strengthen the magnitude of this relationship. The purpose of the present study was to assess the moderating effect of two such factors: negative affect and coping drinking motives.

Method—Data were collected on 316 college students at a midsized public university in the upper Midwest who reported using alcohol.

Results—Findings indicated that both negative affect and coping drinking motives moderated the alcohol use–alcohol problems relationship. The three-way interaction indicated that the strongest relationship between alcohol use and alcohol-related problems existed for individuals high in both negative affect and coping drinking motives.

Conclusions—This study suggests that college students high in negative affect and coping drinking motives are particularly at risk for experiencing problems as a result of their alcohol use, indicating that clinicians should consider screening for these factors when conducting alcohol-related prevention and intervention efforts.

Heavy drinking among college students is a personal and public health risk. Results from national epidemiological studies indicated that approximately 40%–45% of students engaged in "heavy episodic" drinking (four or more drinks in one sitting for women; five or more drinks for men) in the preceding 2 weeks, approximately 20% of students met diagnostic criteria for an alcohol-related disorder, and college students were more likely to experience such disorders than their non-college-attending peers (Dawson et al., 2004; Johnston et al., 2005; Wechsler et al., 2002). Research has consistently demonstrated a link between heavy alcohol use among college students and negative consequences that range

from the relatively benign (e.g., missing class, becoming ill) to the very severe (e.g., experiencing legal problems, serious injury/death) (Hingson et al., 2005; Wechsler et al., 2002). Perhaps of greatest concern, epidemiological research documenting the overall public health problems caused by heavy drinking among college students estimated that each year 1,700 deaths, 500,000 unintentional injuries, and 600,000 assaults could be attributed to college student drinking (Hingson et al., 2005).

It is not surprising that studies among college students have consistently shown that levels of alcohol use are associated with alcohol-related problems. For example, national studies have shown that students engaging in heavy episodic drinking were more likely to experience alcohol-related problems than lighter drinkers (e.g., Wechsler et al., 2000), whereas other research has shown that alcohol contributes to a significant number of emergency department visits by college students (Turner and Shu, 2004). Studies using continuous measures of alcohol use and alcohol-related problems have consistently demonstrated a moderate-to-large correlation between the two constructs. For example, Neighbors and colleagues (2003) reported correlations of .63–.68 between Rutgers Alcohol Problem Index (RAPI; White and Labouvie, 1989) total scores and drinks per week; Martens et al. (2005) reported correlations of .43–.50 between RAPI scores and several measures of alcohol use; and Park (2004) found correlations of .48–.61 between several quantity-frequency measures and an alcohol problems scale.

This research clearly demonstrates that, as one would expect, the overall relationship between alcohol use and alcohol-related problems is relatively strong when judged by conventional standards (e.g., Cohen, 1988). It is important to note, however, that in many of the aforementioned studies a considerable portion of the variability in alcohol-related problems was *not* explained by alcohol use itself. For example, the correlations of .43–.50 reported by Martens et al. (2005) mean that individual alcohol-use measures accounted for 18%–25% of the variance in RAPI scores, leaving at least three quarters of the variance in alcohol-related problems not accounted for by alcohol consumption alone. Even a correlation of .68 between alcohol use and alcohol-related problems, as reported by Neighbors et al. (2003), leaves a majority (54%) of the variance unexplained. Therefore, it may be useful to explore factors that place college students at greater risk for experiencing negative consequences as a result of their drinking. We believe that two factors, namely negative affect and coping drinking motives, will moderate the relationship between alcohol use and alcohol-related problems. More specifically, we believe that those high on both constructs will demonstrate the strongest relationship between alcohol use and alcohol-related problems.

Rooted in self-medication theories of substance use (Khantzian, 1985), negative affect has been conceptualized as causal factor for heavy alcohol use, which in turn increases the likelihood of experiencing alcohol-related problems. In such models negative affect is therefore conceptualized as having an indirect effect (via increased alcohol use) on alcohol-related problems. Research has in fact suggested that depressive symptoms and negative affect may make individuals more likely to experience alcohol-use disorders (e.g., Dixit and Crum, 2000). Among college students, however, research has reported nonsignificant relationships between negative affect and alcohol use (e.g., Park and Grant, 2005; Simons et

al., 2005). Research has, however, indicated that among college students negative affect has a direct relationship with alcohol-related problems or consequences (e.g., Park and Grant, 2005; Simons et al., 2005).

Although among college students alcohol use and negative affect have not demonstrated a direct correlation, it is nonetheless possible that they relate to each other in a manner that will improve understanding of the relationship between alcohol use and alcohol-related problems. Specifically, it is possible that negative affect serves as a moderator variable in the relationship between these variables. Such a model represents a shift from how negative affect has been previously conceptualized in alcohol-use studies. If, among college students, negative affect does not have a direct relationship with alcohol use, then by definition it cannot be a predictor variable in a model that includes alcohol use as a mediating variable (Baron and Kenny, 1986; Frazier et al., 2004). Negative affect could nonetheless impact the relationship between alcohol use and alcohol-related problems via moderation, as moderator variables do not need to be directly related to either a predictor or outcome variable to have an effect on the relationship between the two (Baron and Kenny, 1986). Given the relatively large body of research on the effects that cognitive and affective factors can have on the drinking experience (e.g., Goldman et al., 1999, 2006), we think it is unlikely that a strong cognitive-affective factor like negative affect is not somehow involved in the alcohol use–alcohol related problems relationship. Previous research has shown that depressive symptoms, which are conceptually similar to negative affect, moderate important relationships involving alcohol use, such as maternal problem drinking and level of social problems among one's children (El-Sheikh and Flanagan, 2001). A similar moderating process could occur in the relationship between alcohol use and alcohol-related problems among college students.

A second variable that could be involved in moderating the relationship between alcohol use and alcohol-related problems is drinking motives, especially coping motives. Theoretical models have conceptualized motives as a "final" mediating pathway to one's decision to drink (e.g., Cox and Klinger, 1988). In such models, motives presumably have an indirect effect on alcohol-related consequences via increased drinking. A number of studies among college students have tested the tenets of this model, whereas others have explored the direct relationship between motives and alcohol-related consequences. Cross-sectional studies have shown that both positively reinforcing and coping-related motives had indirect relationships with alcohol-related problems (Carey and Correia, 1997; Lecci et al., 2002) but that coping-related motives also had strong direct relationships with alcohol problems (Carey and Correia, 1997; Lecci et al., 2002; McNally et al., 2003; Martens et al., 2003; Park and Levenson, 2002). Longitudinal research, however, has been equivocal. Some studies have shown that coping motives, but not positively reinforcing motives, were prospective predictors of problems with alcohol (e.g., Kassel et al., 2000), whereas other longitudinal studies have not found a prospective relationship between coping motives and either alcohol use or alcohol-related problems (e.g., Read et al., 2003).

Recently, researchers have also been exploring alcohol models in which coping motives have been conceptualized as moderator variables rather than a variable with direct or mediating effects. For example, Mohr et al. (2005) found that coping motives moderated the

relationship between negative social contacts and drinking at home, whereas Hussong and colleagues (2005) reported an interaction between coping motives and both shyness and fear quadratic effects and probability of alcohol use. These studies provide examples in which one's level of coping drinking motives served to strengthen the relationship between a potential risk factor and an alcohol-related outcome variable.

Based on this existing body of literature, we believe that it is possible that a three-way interaction among alcohol use, negative affect, and coping drinking motives exists such that the relationship between alcohol use and alcohol-related problems is strongest among students high in *both* negative affect and coping drinking motives. Negative affect and coping motives may serve as independent moderating factors of the use–problems relationship, but we believe that the strongest relationship will exist for individuals who exhibit high levels of both constructs. For example, one might expect that a student who reports high coping drinking motives and a high level of negative affect, which would presumably require some type of coping strategy, would be more likely to experience problems from his or her drinking than the student high in such motives but who does not report high negative affect and is presumably less in need of a coping strategy. Similarly, one would expect that the student high in negative affect who also reports elevated coping drinking motives would be more likely to experience problems as a result of alcohol use than a student high in negative affect who reports low or moderate levels of drinking to cope, as the latter student would be less likely to use alcohol as a coping mechanism. Therefore, the purpose of this study was to determine whether in fact these variables moderated the alcohol use–alcohol problems relationship in a sample of college students.

Method

Participants and procedures

Participants included 316 first-year students from a midsized Midwest university who were part of a larger project examining the efficacy of an alcohol education program. Students were required to attend a large first-year experience lecture class, dependent on major, in which they were invited to fill out a paper-and-pencil screening survey for the larger study. For students not required to attend the specialized lecture, trained research assistants went to other first-year experience classes to invite remaining students to participate. Approximately one half of first-year students (46.9%) participated in the screening survey. Not all students were present at the lecture or in class when the survey was offered. The total number of students invited to complete the survey is unknown; thus, 46.9% is a completion rate based on the total number of incoming first-year students rather than a response rate based on those invited to complete the survey. Although the actual completion rate is estimated to be quite higher than 46.9%, this rate is comparable to other large scale trials in college student populations (e.g., Marlatt et al., 1998).

Students were provided a written description of the study and their rights as participants in research (e.g., the voluntary nature of the research). Students providing written informed consent were asked to complete a brief paper-and-pencil questionnaire assessing demographics, peak alcohol use, and perceived peer drinking norms during the first-year experience lecture or their regular first-year experience course time. Of the 891 students

(51% female) completing the screening survey, approximately one half met heavy drinking criteria (i.e., had one or more episodes of heavy episodic drinking, defined as at least five/four drinks in one sitting for men/women, in the last 30 days; $n = 437$, 49% [53% female]). All students meeting criteria were telephoned and invited to participate in the larger longitudinal study, of which 316 were successfully recruited (54% female, mean [SD] age = 18.48 [1.18]; 99% while). There were no demographic differences (gender, age, ethnicity) between those choosing and declining to participate in the study. Participants accepting invitation to the longitudinal study were recruited via telephone and scheduled to complete a web-based survey in a controlled setting on campus. Students received $50 for the completion of a 1-hour baseline survey. All study procedures were approved by the university's institutional review board.

Measures

Alcohol use—One's use of alcohol was measured by three variables: peak drinks, typical drinks per week, and typical drinking frequency per week. We used different measures to determine whether our hypothesized relationships were consistent across varying indices of one's alcohol use. Students were provided a definition of a standard drink for these measures. To assess peak number of drinks, students were asked. "Think of the occasion you drank the most this past month. How much did you drink?" (Dimeff et al., 1999). Responses ranged from 0 to 25 or more drinks. Typical drinks per week and typical drinking frequency per week were assessed with one question from the Daily Drinking Questionnaire (Collins et al., 1985), "Consider a typical week during the last month. How much alcohol, on average (measured in number of drinks), do you drink on each day of a typical week?" A typical weekly drinking score was computed by summing of the standard number of drinks for each day of the week. A typical drinking frequency score was computed by summing the number of days on which one reported consuming alcohol per week.

Alcohol-related problems—Alcohol-related problems were measured using the Rutgers Alcohol Problem Index (RAPI; White and Labouvie, 1989). The RAPI consists of 23 items that ask how many times the person has experienced each problem over a specific period (the past 3 months for the present study). Responses are scored on a Liken scale ranging from 0 (never) to 4 (more than 10 times), with responses to each item summed to create a total score. The RAPI has been shown to be a valid measure of alcohol-related problems (e.g., White and Labouvie, 1989), and the internal consistency with the present sample was satisfactory ($\alpha = .86$).

Negative affect—Negative affect was assessed using the ten negative affect items from the Positive and Negative Affect Scale (PANAS; Watson et al., 1988). Respondents were asked the extent that they feel distressed, upset, hostile, irritable, scared, afraid, ashamed, guilty, nervous, and jittery on a regular basis ($\alpha = .85$ in the present study). Responses range from 0 (not at all) to 6 (extremely), and a total score reflects the average score of each item. Thus, higher scores indicate more negative affect.

Coping drinking motives—Coping-related motives were assessed with five items (α = .82 in the present study) from the Drinking Motives Questionnaire (DMQ; Cooper, 1994). The DMQ measures how often individuals drink for various reasons, including coping-related motives generally related to reducing negative affect (e.g., "to forget your worries." "because it helps you when you feel depressed or nervous," "to cheer you up when you are in a bad mood"). Items are scored on a scale from 1 (never/almost never) to 5 (almost always/always), with the total score reflecting the average score on each item.

Results

Descriptive information

Before data analysis, variables were screened for outliers and for normality. No extreme outliers or departures from normality were evident for any of the variables; therefore, all participants were retained for the study. Table 1 provides means, standard deviations, and zero-order correlations for negative affect, coping motives, alcohol consumption, and alcohol-related problems. Overall, results indicated that negative affect was positively associated with drinking to cope and alcohol-related problems while demonstrating no relationship with measures of alcohol use. In addition, coping motives were related to more alcohol consumption and negative consequences. Finally, heavier alcohol consumption was linked to experiencing more alcohol-related problems.

Regression analyses

Multiple regression analyses were used to determine whether a three-way interaction existed among alcohol use, negative affect, and coping drinking motives in predicting alcohol-related problems. We conducted three regression analyses, one for each measure of alcohol consumption (peak quantity, typical number of drinks per week, and frequency). In each analysis, alcohol-related problems was the dependent variable. Gender and age were included as covariates in all tests. All main effects (alcohol consumption, negative affect, coping drinking motives), two-way interactions (Alcohol Consumption × Negative Affect, Alcohol Consumption × Coping Motives, Coping Motives × Negative Affect), and the three-way interaction (Alcohol Consumption × Negative Affect × Coping Motives) were entered simultaneously. Because we were most interested in the three-way interaction, as well as the fact that interaction terms supersede main effects and higher-order interactions supersede lower-order interactions (Kirk, 1982; Pedhazur, 1997), we first examined the three-way interaction for statistical significance. If the three-way interactions were not statistically significant, then we would proceed to exploratory analyses of two-way interactions and main effects. Significant interactions were examined with tests of simple slopes as described by Aiken and West (1991). All predictors were mean centered to facilitate interpretation of parameter estimates and to reduce multicollinearity of product terms.

Results from the regression analyses are presented in Tables 2–4. The overall model was statistically significant for each alcohol-use variable, with R^2 values ranging from .36 (drinking frequency) to .43 (drinks per week). There were a number of statistically significant main effects and two-way interactions, but in each case there was a statistically significant three-way interaction (Negative Affect × Peak Drinking × Coping Motives: $t =$

2.49, 306 df, $p < .05$, $d = 0.28$; Negative Affect × Drinks per Week × Coping Motives: $t = 3.35$, 306 df, $p < .05$, $d = 0.38$; and Negative Affect × Drinking Frequency × Coping Motives: $t = 2.12$, 306 df, $p < .05$, $d = 0.24$).

Figure 1 displays predicted means and standardized simple slopes derived from the regression equation for the significant three-way interactions. When conducting simple slopes analyses of three-way interactions the researcher must select which two-way interaction he or she wishes lo test at different values of the third variable. For our analyses, we felt that it made the most conceptual sense to examine the two-way interaction between alcohol use and negative affect between those high versus low on coping motives (defined as one standard deviation below and above the mean, respectively). At low levels of coping motives, negative affect did not moderate the relationship between consumption and problems when consumption was operationalized as peak drinking ($t = -0.86$, 306 df, $p =$ NS), drinks per week ($t = 0.27$, 306 df, $p =$ NS), or drinking frequency ($t = 0.23$, 306 df, $p =$ NS). In contrast, at high levels of coping motives the relationship between consumption and problems was significantly stronger at higher levels of negative affect relative to lower levels of negative affect. The simple two-way interactions between consumption and negative affect were significant for peak drinking ($t = 2.45$, 306 df, $p < .05$), drinks per week ($t = 4.32$, 306 dt, $p < .001$), and drinking frequency ($t = 3.97$, 306 df, $p < .001$).

Discussion

This study was designed to evaluate whether negative affect and coping drinking motives moderated the relationship between alcohol consumption and alcohol-related problems in college students. We hypothesized that students high in both negative affect and coping drinking motives would demonstrate the strongest relationship between alcohol use and alcohol-related problems. Consistent with our hypotheses, results demonstrated a three-way interaction among alcohol use, negative affect, and coping motives in predicting alcohol-related problems. For those low in coping drinking motives, the relationship between alcohol use and alcohol-related problems was consistent between those high and low in negative affect. For those high in coping drinking motives, however, the relationship between alcohol use and alcohol-related problems was significantly stronger for those high in negative affect than those low on the construct. This relationship was consistent across three separate measures of alcohol use (peak drinking, drinks per week, and drinking frequency per week).

It is important to consider possible reasons that the relationship between alcohol use and problems was stronger for those with higher negative affect and coping motives for drinking. It is possible that both biological and social factors influence this relationship. First, although alcohol may be used for reasons of self-medication (Khantzian, 1985) and may have short-term desirable effects on mood (Martin et al., 1993), alcohol intoxication can also lead to sleep deprivation (e.g., Stein and Friedmann, 2005) as well as increased focus on and perseveration regarding negative life events and depressive cognitions (Steele and Josephs, 1990; Taylor and Leonard, 1983), both of which may ultimately exacerbate mood difficulties. This could lead to increased reporting of consequences such as having a bad time while drinking, as well as result in increased likelihood of consequences such as missing class or missing work. It is also possible that individuals who are drinking primarily

for coping reasons in response to negative affect lack other skills that might be more effective for navigating drinking situations with reduced harm, such as social or interpersonal communication skills that might help them avoid such situations (e.g., fights or arguments with others while drinking or recognizing and avoiding risky sexual situations). Alternatively, some research indicates individuals who primarily drink for coping reasons may be more likely to drink alone and at home (Cooper, 1994) which has been shown to be related to increased risk of developing an alcohol-use disorder (Carpenter and Hasin, 1998a, 1998b, 1999). This outcome is perhaps in part the result of the lack of external monitoring or controls on alcohol use that might occur when individuals drink in public settings or because of the social isolation that may result from high levels of negative affect. Additional research is needed to better understand the precise mechanisms by which the interactions among drinking to cope, negative affect, and alcohol use are associated with greater alcohol-related problems in both college student and general populations.

There are several implications of these findings for clinicians, campus prevention providers, and researchers. Results suggest that clinicians should be advised to assess college student problematic drinkers for negative affect, coping drinking motives, and overall coping skills, Both clinicians and prevention professionals should consider using existing efficacious techniques, such as Motivational Enhancement (Dimeff et al., 1999; Marlatt et al., 1998; Miller and Rollnick, 2002) and Alcohol Skills Training (Kivlahan et al., 1990; Larimer and Cronce, 2002) to help students examine their drinking motives and expose them to strategies to increase their coping skills. In addition, it may be useful to develop and test interventions that focus more specifically on emotion regulation and other coping skills (Linehan et al., 1999, 2002) to best address the needs of students drinking to cope with negative affect. Finally, results suggest that students high in negative affect who are participating in alcohol-related interventions should be encouraged to consider counseling or psychotherapy to address their poor affect.

There are limitations that need to be considered regarding this research. First, the data are cross-sectional rather than longitudinal, and thus not knowing the temporal associations among our variables makes it impossible to verify the directionality of the relationships. In addition, data were based on self-report measures of drinking, affect, and coping. Although accuracy of self-report data has been questioned, there is support for the reliability and validity of self-report in college student and adolescent populations (Babor et al., 2000; Miller et al., 2002). A third limitation is that the sample was limited to the 46.9% of students who completed the screening survey and to students who were first-year students and sell-reported heavy drinkers. Although this population may differ from the general college student population, a focus on heavy-drinking populations is justified in that these students are the ones most likely to experience negative consequences and thus are most likely to be the focus of future preventive efforts targeting negative affect or coping skills. However, future research should attempt to replicate these findings with other student populations including a wider range of drinking styles. Finally, an additional limitation is that the time frame for all measures was not identical (e.g., alcohol use was assessed over the past month; alcohol-related problems were assessed over the past 3 months). It is possible that more variability in alcohol-related problems might be explained if all measures covered the identical time period to the consequence measure. Thus, the current findings may represent a

conservative test of the extent to which negative affect mid coping motives moderate the relationship between consumption and consequences, and we encourage future research studies to use equivalent time frames among the measures.

Despite these limitations, the current study extends prior research on the relation among negative affect, coping drinking motives, and alcohol use and alcohol problems, through demonstrating that the relationship between alcohol use and alcohol-related problems is strongest for this high in both negative affect and coping drinking motives. This research provides evidence regarding the importance of attending to negative affect and coping motives in future prevention and treatment efforts on college campuses.

Acknowledgments

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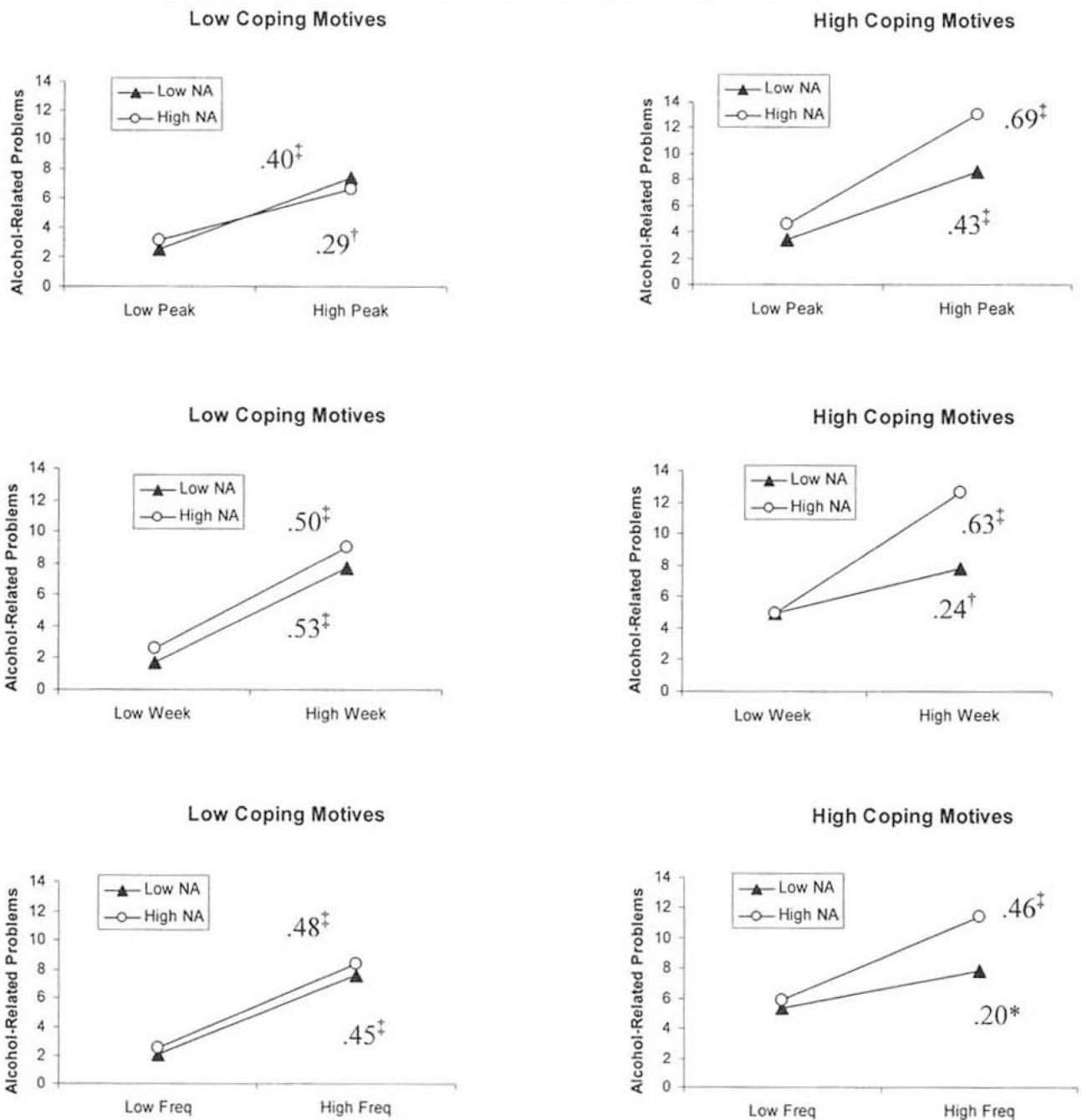
Figure 1.
The three-way interaction among coping motives, negative affect, and alcohol consumption in relation to alcohol-related problems. Values represent standardized beta weights. Peak represents maximum number of drinks consumed on one occasion in the previous month. Week represents the average number of standard drinks consumed per week over the past month. Freq = the average number of days per week in which alcohol was consumed over the previous month: NA = negative affect.

*$p < .05$; †$p < .01$; ‡$p < .001$.

Table 1

Means, standard deviations, and zero-order correlations ($n = 316$)

Variable	Mean (SD)	1	2	3	4	5	6
1. Negative affect	1.58 (0.57)	—					
2. Coping motives	1.85 (0.73)	$.36^{\ddagger}$	—				
3. Peak	9.73 (5.06)	−.03	$.17^{\dagger}$	—			
4. Week	14.27 (11.23)	−.05	$.15^{\dagger}$	$.77^{\ddagger}$	—		
5. Freq.	2.71 (1.33)	.01	$.19^{\ddagger}$	$.53^{\ddagger}$	$.69^{\ddagger}$	—	
6. Alcohol problems	6.50 (6.06)	$.24^{\ddagger}$	$.39^{\ddagger}$	$.46^{\ddagger}$	$.50^{\ddagger}$	$.46^{\ddagger}$	—

Notes: Peak represents maximum number of drinks consumed on one occasion in the previous month. Week represents the average number of standard drinks consumed per week over the past month. Freq. represents the average number of days per week in which alcohol was consumed over the previous month.

† $p < .01$;

‡ $p < .001$.

Table 2

Regression results for the three-way interaction among peak alcohol use, negative affect, and coping drinking motives in predicting alcohol-related problems ($n = 316$)

Predictor	B	β	t	d
Gender	−1.08	−.09	−1.82	−0.21
Age	−0.11	−.03	−0.71	−0.08
Negative affect	1.19	.11	2.25[*]	0.26
Peak	0.54	.45	9.18[‡]	1.05
Coping	1.71	.21	4.00[‡]	0.46
Negative Affect × Peak	0.08	.04	0.85	0.10
Negative Affect × Coping	1.73	.16	3.17[†]	0.36
Peak × coping	0.17	.11	2.38[*]	0.27
Negative Affect × Peak × Coping	0.27	.12	2.49[*]	0.28

Notes: Cohen's *d* was calculated with the following formula: $d = 2t / \sqrt{df}$ (Rosenthal and Rosnow, 1991). By conventional criteria (e.g., Cohen, 1988) small, medium, and large effects are generally considered to be .2, .5, and .8, respectively. Peak represents maximum number of drinks consumed on one occasion in the previous month.

[*] $p < .05$;

[†] $p < .01$;

[‡] $p < .001$.

Table 3

Regression results for the three-way interaction among drinks per week, negative affect, and coping drinking motives in predicting alcohol-related problems ($n = 316$)

Predictor	B	β	t	d
Gender	−0.68	−.06	−1.24	−0.14
Age	−0.10	−.03	−0.69	−0.08
Negative affect	1.54	.14	3.02[†]	0.35
Week	0.26	.48	9.88[‡]	1.13
Coping	1.60	.19	4.00[‡]	0.46
Negative Affect × Week	0.10	.12	2.51[*]	0.29
Negative Affect × Coping	0.78	.07	1.45	0.17
Week × Coping	−0.03	−.04	−0.84	−0.10
Negative Affect × Week × Coping	0.12	.17	3.35[‡]	0.38

Notes: Cohen's *d* was calculated with the following formula: $d = 2t / \sqrt{df}$ (Rosenthal and Rosnow, 1991). By conventional criteria (e.g., Cohen, 1988) small, medium, and large effects are generally considered to be .2, .5, and .8, respectively. Week represents the average number of standard drinks consumed per week over the past month.

[*] $p < .05$;

[†] $p < .01$;

[‡] $p < .001$.

Table 4

Regression results for the three-way interaction among drinking frequency, negative affect, and coping drinking motives in predicting alcohol-related problems ($n = 316$)

Predictor	*B*	β	*t*	*d*
Gender	0.14	.01	0.23	0.03
Age	−0.34	−.10	−2.11[*]	−0.24
Negative affect	1.20	.11	2.21[*]	0.25
Freq.	1.82	.40	7.87[‡]	0.90
Coping	1.69	.20	3.97[‡]	0.45
Negative Affect × Freq.	0.57	.08	1.36	0.16
Negative Affect × Coping	0.82	.08	1.35	0.15
Freq. × Coping	−0.43	−.08	−1.34	−0.15
Negative Affect × Freq. × Coping	0.62	.14	2.12[*]	0.24

Notes: Cohen' *d* was calculated with the following formula: $d = 2t / \sqrt{df}$ (Rosenthal and Rosnow, 1991). By conventional criteria (e.g., Cohen, 1988) small, medium, and large effects are generally considered to be .2, .5, and .8, respectively. Freq. represents the average number of days per week in which alcohol was consumed over the previous three months.

[*]$p < .05$;

[‡]$p < .001$.