The relationship among alcohol use, related problems, and symptoms of psychological distress: Gender as a moderator in a college sample

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Abstract

This research evaluated the prevalence of general symptoms of psychological distress, the degree to which these symptoms related to alcohol use and alcohol-related negative consequences, and gender-specific relationships among alcohol use, alcohol consequences, and symptoms of psychological distress. The sample included 1705 students drawn from a random sample of three West Coast universities who completed the survey. Results revealed higher levels of consumption and more negative drinking consequences for men, more psychological distress symptoms reported by women, and stronger relationships between psychological symptoms and drinking consequences than use per se. The association between psychological distress and negative drinking consequences was stronger among men than women. The present findings suggest that a focus on negative consequences of alcohol use in addition to the use itself may have greater utility in identifying students at risk for comorbid psychological distress to provide intervention.

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1. Introduction

Excessive alcohol use is a common and significant problem on college campuses. Research indicates that up to 90% of college students drink alcohol, with 25–50% being considered “heavy” or “binge” drinkers (Wechsler, Lee, Kuo, & Lee, 2000). Students who abuse alcohol
are at high risk for developing negative consequences, such as traffic accidents, academic failure, risky sexual behavior, and alcohol dependence (Marlatt et al., 1998). Research has also found surprisingly high rates of psychological distress among student populations, particularly depression and anxiety (Kushner & Sher, 1993; McDermott, Hawkins, Littlefield, & Murray, 1989). However, there is considerable disagreement in the literature regarding whether, and under what circumstances, alcohol use by college students is related to psychological distress.

Gender and gender differences may account for some of the conflicting findings in studies of the relationship among alcohol use, alcohol problems, and psychological distress. Past studies have revealed gender differences in the development of drinking patterns and mental health problems, although even in this research, there are some inconsistent results (Berger & Adesso, 1991). Whether the relationship between psychopathology and alcohol use and related problems might be moderated by gender in college students has been relatively understudied. There is preliminary evidence to suggest that the relationship between mood symptoms and alcohol use might be stronger for men than for women (Berger & Adesso, 1991).

The current research was designed to replicate and extend prior research and to address the gaps in the literature. The research specifically evaluates, in a large random sample of college students, the prevalence of psychological distress symptoms, the degree to which these symptoms are related to alcohol use and alcohol-related negative consequences, and gender-specific relationships among alcohol use, alcohol consequences, and psychological distress.

Consistent with other findings, men were expected to drink more alcohol more frequently than women drink and to have more alcohol-related problems. Women were expected to have more symptoms of psychological distress than men. We expected that symptoms of psychological distress would be positively related to both alcohol use and alcohol-related negative consequences. Finally, we examined whether gender would moderate the relationship among alcohol use, alcohol-related problems, and symptoms of psychopathology. These relationships must be elucidated to develop effective prevention and intervention approaches.

### 2. Methods

#### 2.1. Procedure

The current study consists of year 1 data from an ongoing, large, longitudinal, multisite study examining social norms and their role in college student drinking. Students completed paper or web assessments, which took approximately 45 minutes. As incentives, students were given two movie tickets and entered into drawings for one $500 gift certificate and twenty $100 gift certificates. All procedures were reviewed and approved by the Institutional Review Boards of all three Universities.

#### 2.2. Participants

The sample was drawn from a pool of randomly selected undergraduate students at three west coast, public institutions. Participants included 1705 students (1181 women and 524
men) with a mean age of 22.03 (S.D. = 5.79). Approximately half of the participants across the three campuses ($n$s = 610, 377, 718) completed web assessments ($n$ = 875) with the other half completing paper assessments ($n$ = 830). Ethnicity was 81.19% Caucasian, 10.46% Asian, and 8.35% other.

2.3. Measures

Three instruments drawn from a larger assessment were used in the present research.

The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) asks students to fill in seven boxes (for each day of the week) with their typical drinking on that day, averaged over the past 3 months. The internal consistency (Cronbach’s $z$) for this study was $z$ = .78.

The Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) is a questionnaire used to assess drinking consequences in college populations. The RAPI asks students to rate the occurrence of 23 items reflecting alcohol’s impact on social and health functioning over the past 3 months. The internal consistency (Cronbach’s $z$) for this study was $z$ = .90.

The Brief Symptom Inventory (BSI; Derogatis, 1993) is a widely used 53-item, shortened version of the Hopkins Symptom Checklist-Revised and has demonstrated good reliability and validity. The BSI includes subscales assessing nine symptom dimensions (somatization, obsessive–compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism). The BSI provides a Global Severity Index (GSI) based on a summary score of the nine symptom dimensions (sum/number of total number of responses). The internal consistency (Cronbach’s $z$) for this study was $z$ = .96.

3. Results

Campus, web-versus-paper administration, age, and ethnicity were covaried in all analyses. Pairwise deletion was used throughout analyses. Differences in alcohol consumption and alcohol-related negative consequences were examined as a function of gender and GSI using multivariate multiple regression. Multivariate results were significant for both gender [Wilks’ Lambda = .95, $F(2,1649) = 43.99$, $P < .0001$] and GSI scores [Wilks’ Lambda = .89, $F(2,1649) = 102.74$, $P < .0001$]. The multivariate effect for the gender by GSI interaction was also significant [Wilks’ Lambda = .99, $F(2,1648) = 6.95$, $P = .001$].

3.1. Alcohol consumption

Univariate results revealed that men reported greater alcohol consumption (5.99 standard drinks per week) than did women (3.56 standard drinks per week).
Participants higher in psychological distress also reported greater alcohol consumption \([t(1661)=6.28, P<.0001]\). An interaction was also apparent, in that the relationship between psychological distress and alcohol consumption was stronger for men \([t(1661)=2.17, P<.05]\). Fig. 1 (left) presents a graph of the interaction based on values derived from the regression equation, with high and low values specified as two standard deviations above and below the mean, respectively (Aiken & West, 1991).

We were also interested in examining whether gender moderated the relationship between specific symptom dimensions and alcohol consumption. A series of Bonferroni-adjusted regressions revealed significant interactions for only two of the nine specific dimensions. Relations between somatization and alcohol consumption and between hostility and alcohol consumption were stronger for men than women.

### 3.2. Alcohol-related negative consequences

Univariate results revealed that men reported experiencing more negative consequences from drinking (4.2) than did women (3.3) \([t(1698)=3.74, P<.001]\). Participants higher in psychological distress also reported more alcohol-related problems \([t(1698)=14.46, P<.0001]\). The interaction revealed that the relationship between psychological distress and negative drinking consequences was stronger for men \([t(1698)=3.69, P<.001]\). Fig. 1 (right) presents a graph of the interaction based on predicted values derived from the regression equation.

In examining gender as a moderator of specific symptom dimensions and alcohol-related consequences, we again tested a series of Bonferroni-corrected regressions. These analyses revealed that men exhibited stronger associations than women between alcohol-related negative consequences and somatization, anxiety, hostility, phobic anxiety, and paranoid ideation.

![Fig. 1. Gender as a moderator of psychological distress and problem drinking.](image-url)
4. Discussion

The present research examined relationships among gender, symptoms of psychological distress, and drinking within a random sample of college students from three West Coast campuses. Men continue to drink more than women and have more alcohol-related problems than women. Women endorsed more symptoms of psychological distress as measured by the BSI.

The most striking results of the current study were in regard to the moderation effects of gender. The relationship between symptoms of psychological distress and alcohol problems was significantly stronger for men than for women, although women reported more total symptoms. Men who were more distressed had more alcohol-related problems than did women exhibiting the same levels of distress. These results are consistent with previous research with other populations (Berger & Adesso, 1991; Schutte, Hearst, & Moos, 1997), but are the first to demonstrate this finding in a college population. Berger and Adesso (1991) suggested that men are more likely to cope with depression by drinking, taking drugs, and ignoring the problem, while women are more likely to confide in friends, take medication, or seek professional help. Schutte et al. (1997) suggested alcohol problems as more likely to cause depressive symptoms in men. Regardless of the causal direction, the present findings suggest a need to incorporate interventions addressing symptoms of psychological distress into alcohol abuse prevention and treatment services offered on college campuses.

It is important to acknowledge the limitations of this research. Data were analyzed cross-sectionally, thereby limiting the ability to make causal inferences. The sample consisted of college students from a particular area of the country; thus, the results may not generalize to other areas. Finally, the data were provided via self-report only. However, the assurance of confidentiality provided is believed to enhance reliability and validity of the information.

Results suggest male students may need extra interventions, such as skills building and alternate coping strategies to reduce alcohol-related problems. Clinicians need to pay extra attention to psychological distress when dealing with men presenting with alcohol problems. Such interventions may be more efficiently and effectively designed to help the students and campus administrators reduce the costs associated with the problems of both alcohol abuse and mental health symptoms.

The present findings suggest several potentially fruitful avenues for future research. Longitudinal examinations of college drinking and psychological distress are needed to establish causal pathways between psychopathology and alcohol over time. Research assessing a broader range of symptoms and additional substances is also needed. A planned follow-up to the current sample and ongoing recruitment of additional cohorts will partially address these questions.

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References


