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Drinking to cope mediates the relationship between depression and alcohol risk: Different pathways for college and non-college young adults

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HIGHLIGHTS

- College and non-college respondents reported similar alcohol use and problems.
- Drinking to cope was associated with alcohol-related problems in both samples.
- Drinking to cope mediated the depressed mood-alcohol problems pathway in students.
- Drinking to cope did not mediate the pathway in non-college emerging adults.
- Among emerging adults, pathways to alcohol risk may differ by college status.

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ABSTRACT

Background: It is well-established that drinking to cope with negative affective states mediates the relationship between depressed mood and alcohol risk outcomes among college students. Whether non-college emerging adults exhibit a similar pathway remains unknown. In the current study, we compared the mediating role of coping motives in the relationship between depressive symptoms and drinking risk outcomes (heavy episodic drinking and alcohol problems) in college and non-college emerging adult subgroups.

Methods: Participants were three hundred forty-one community-recruited 18–25 year olds reporting past month alcohol use. We used a structural equation modeling (SEM) for our primary mediation analysis and bias-corrected bootstrap resampling for testing the statistical significance of mediation.

Results: Participants averaged 20.8 (± 1.97) years of age, 49% were female, 67.7% were White, 34.6% were college students, and 65.4% were non-college emerging adults. College and non-college emerging adults reported similar levels of drinking, alcohol problems, and drinking to cope with negative affect, and drinking to cope was associated with alcohol-related problems in both samples. However, while drinking to cope mediated the relationship between depressed mood and alcohol problems among students, it did not mediate the pathway among non-college emerging adults.

Conclusions: These findings caution against extending college-based findings to non-college populations and underscore the need to better understand the role of coping motives and other intervening factors in pathways linking depressed mood and alcohol-related risk in non-college emerging adults.

1. Introduction

Co-occurring depressed mood and risky alcohol use are prevalent during emerging adulthood, a critical development period ranging from approximately 18 to 25 years of age linking adolescence and adulthood and characterized by identity exploration, instability, self-focus, and opportunity (Arnett, 2005). Three-quarters of individuals with lifetime history of mood disorders have their first onset by the age of 24 (Kessler et al., 2005), and emerging adulthood is associated with peak lifetime drinking risk (Patrick & Schulenberg, 2011; Sussman & Arnett, 2014), including alcohol use disorder (AUD; Hasin, Stinson, Ogburn, & Grant, 2007). In a review of 18 studies directly comparing U.S. college and non-college samples, Carter, Brandon, and Goldman (2010) show that college students drink at riskier levels and display greater increases in drinking during emerging adulthood relative to non-college peers. However, studies adjusting for background factors reveal similar rates

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of psychiatric disorders (Blanco et al., 2008) and AUD (Blanco et al., 2008; Harford, Yi, & Hilton, 2006). Other studies demonstrate that emerging adults who do not attend college report greater levels of daily drinking (O'Malley & Johnston, 2002; Slutske, 2005), experience more alcohol-related problems (Quinn & Fromme, 2011; White, Labouvie, & Papadaratsakis, 2005), and are at heightened risk for developing alcohol dependence over time (Bingham, Shope, & Tang, 2005; Carter et al., 2010; Slutske, 2005).

Motivational models of problematic alcohol use posit that depressed individuals are susceptible to consuming alcohol to avoid or regulate negative internal states (Abrams & Niaura, 1987; Maisto, Carey, & Bradizza, 1999). Moreover, of all drinking motives (e.g., social, enhancement, coping, conformity; Cooper, 1994), drinking to cope is the most robust predictor of negative alcohol-related consequences among college students (Merrill, Wardell, & Read, 2014), among the strongest correlates of binge drinking (5 + drinks in a row in past two weeks) from ages 18–22, and the strongest correlate of bingeing after age 22 (Cooper, 1994; Kuntsche, Stewart, & Cooper, 2008; Park & Levenson, 2002; Patrick & Schulenberg, 2011). Although drinking to cope fails to effectively resolve problems and may actually induce depressant effects, learned behavioral patterns reinforce maladaptive coping behaviors (Bonin, McCreary, & Sadava, 2000; Cooper, Frone, Russell, & Mudar, 1995; Cooper, Russell, Skinner, Frone, & Mudar, 1992; Merrill & Thomas, 2013; Park, Armeli, & Tennen, 2004). In effect, individuals who rely on drinking to cope are less likely to transition out of excessive drinking patterns over time (Baer, 2002; Littlefield, Sher, & Wood, 2010; Merrill & Read, 2010).

Drinking to cope has emerged as a strong mediator in the relationship linking depressive symptoms with subsequent negative alcohol consequences among college students (Bravo, Pearson, Stevens, & Henson, 2016; Clerkin, Werntz, Magee, Lindgren, & Teachman, 2014; Gonzalez, Bradizza, & Collins, 2009; Kenney, Jones, & Barnett, 2015; Tomaka, Morales-Monks, & Shamaley, 2013; Vernig & Orsillo, 2015). Two of these studies also show intervening effects on alcohol consumption outcomes, including drinking frequency (Bravo et al., 2016; Gonzalez et al., 2009) and heavy drinking (Gonzalez et al., 2009). Unfortunately, existing emerging adult research has primarily examined undergraduate student samples at four-year universities (for review see Kuntsche, Knibbe, Gmel, & Engels, 2005), and researchers regularly note the lack of generalizability to non-college populations (Armeli, Sullivan, & Tennen, 2015; Cooper, Kuntsche, Levitt, Barber, & Wolf, 2016; Merrill et al., 2014). Nationally, one in five eighth graders drop out of high school (Heckman & Lafontaine, 2010), and among high school graduates, less than half matriculate into 4-year colleges the following fall (Aud et al., 2011). Therefore, it is surprising that the current literature examining the role of coping motives in predicting alcohol risk among distressed emerging adults largely neglect a substantial proportion of this population. Examining the extent to which pathways may differ by college status is important to attend adequately to the needs of all emerging adults.

1.1. Objective and hypotheses

In the current study, we aim to fill a prominent gap in the existing literature by examining if the pathways (i.e., via drinking to cope) linking depressive symptoms with heavy episodic drinking and adverse alcohol outcomes are similar when comparing college and non-college emerging adults. Although college and non-college emerging adults experience substantially different environmental contexts and exhibit different drinking behaviors, consequences, and trajectories, consistent with the college student literature, we hypothesized that drinking to cope would mediate the relationship between depressive status and alcohol-related problems in both college and non-college emerging adult samples. We also hypothesized that drinking to cope would mediate the relationship between depressive status and heavy episodic drinking (Wechsler & Nelson, 2001) in both college and non-college emerging adult samples. All study models control for age, gender, and racial/ethnic status. These factors are known correlates of alcohol use frequency and quantity (e.g., Grant et al., 2004; Vicary & Karshin, 2002) and could confound associations between depression, motivations for alcohol use, and alcohol use and adverse consequences (Kenney et al., 2015; Perkins, 1999).

2. Method

2.1. Participants and procedure

Study participants were recruited between January 2012 and March 2015 for a study on "health behaviors of young adults, 18–25 years old" using online, newspaper, commercial radio, and public transportation advertising. Those interested in participating were screened anonymously via phone after providing verbal consent. In addition to being 18–25 years old, eligibility criteria for the parent study included using alcohol or marijuana in the last month, not having suicidal ideation in the past two weeks, and living within 30 min of the research site. Of the 2645 individuals screened by phone, 1252 were ineligible. The most common reasons for ineligibility included having suicidal ideation (n = 234) and being outside the age range (n = 148). The remaining 1393 eligible persons were invited for an interview and 893 were either not interested [n = 102 actively refused; n = 188 passively refused, i.e. said they would call back to schedule an appointment, but never did; or were already participating in a research study (n = 17)], or did not keep a scheduled appointment (n = 586).

Five hundred persons provided written informed consent (the study was approved by the Institutional Review Board of a research hospital in Southern New England). Because our interest was in the comparison of college and non-college emerging adults, we excluded 101 who had completed a college degree and 55 currently enrolled in (n = 44) or had completed (n = 11) a two-year college program. We excluded these participants to ensure the college sample used in the current analyses was most consistent with existing studies that have primarily utilized current 4-year college students (for review see Kuntsche et al., 2005; Stone, Becker, Huber, & Catalano, 2012). Further, achieving a college degree represents a marked transition into adulthood roles (Stone et al., 2012) and two-year college contexts differ significantly from those of four-year colleges (Cremeens-Matthews & Chaney, 2016; VanKim, Laska, Ehlinger, Lust, & Story, 2010). Finally, we excluded three participants who did not provide data on the drinking motives measure, leaving 341 persons in the final analytic sample. Of these, 223 were currently enrolled in a 4-year college degree program and 118 were not in college (52 were not currently enrolled and 66 had never enrolled). While those not currently enrolled in college are more likely to be non-Hispanic White than those never enrolled, no other significant differences emerged between the non-college subgroups on any variables assessed in the final models.

2.2. Measures

Demographics commonly assessed in health behavior research, including age, sex, and race, were included as covariates in the current analyses. Moreover, during the emerging adult developmental period, risky drinking is shown to increase, peak, and then decrease (Maggs & Schulenberg, 2005), and men and White emerging adults consistently demonstrate greater drinking levels relative to women and non-Whites, respectively (for review see Borsari, Murphy, & Barnett, 2007; Grigsby, Forster, Unger, & Sussman, 2016; Stone et al., 2012). The following variables were also assessed.

2.2.1. Parental history of alcohol problems

Participants answering that their biological mother *or* father has or had "a problem with alcohol" were coded as having a parental history of alcohol problems. Parental history of alcohol problems predicts