Impulsivity-related traits, college alcohol beliefs, and alcohol outcomes: Examination of a prospective multiple mediation model among college students in Spain, Argentina, and USA

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HIGHLIGHTS

• Tested a mediation model among college drinkers in Argentina, Spain and US.
• College alcohol beliefs prospectively predicted increased alcohol use/consequences.
• Impulsivity-like traits relate to alcohol outcomes via college alcohol beliefs.
• Model was invariant across countries/sex, suggesting a culturally-universal model.

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ABSTRACT

Objectives: The present study examined (both cross-sectionally and prospectively) the mediational role of college alcohol beliefs in the relationship between impulsivity-related traits and alcohol outcomes (i.e., alcohol use and negative consequences) among college student drinkers from the United States (U.S.), Spain, and Argentina.

Method: A sample of 1429 (U.S. = 733, Spain = 292, Argentina = 404) drinkers (at least one drinking episode within the previous month) completed the baseline survey, and 242 drinkers completed the follow-up. To test study aims, a cross-sectional model was first employed to examine whether the proposed double-mediated paths (i.e., each dimension of impulsivity → college alcohol beliefs → alcohol use → negative alcohol-related consequences) extends across samples with different cultural backgrounds (i.e., structural invariance testing). A longitudinal model was then conducted to assess if college alcohol beliefs prospectively mediate the associations between trait impulsivity and alcohol outcomes.

Results: College alcohol beliefs were concurrently and prospectively associated with both greater alcohol use and increased number of negative alcohol-related consequences. These internalized beliefs about college student drinking culture significantly mediated the effects of several distinct impulsivity-related traits on alcohol-related outcomes including urgency (positive and negative), sensation seeking, and perseverance. These findings were invariant across gender and across three countries (Argentina, Spain, and the U.S.).

Conclusions: Our findings highlight the modulatory role of cognitive factors on problematic alcohol use among college students with different cultural backgrounds. Our results suggest that, despite the cultural differences exhibited by these three countries, the unique and mediational effects of college alcohol beliefs appear relatively universal.

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1. Introduction

Decades of research has identified the college student drinking culture as a barrier toward effective prevention efforts (Borsari, Murphy, & Barnett, 2007; Moffatt, 1991; National Advisory Council on Alcohol Abuse and Alcoholism, 2002; Wolburg, 2016). More recent research has formally operationalized the internalization of college student drinking culture, or beliefs regarding the degree to which alcohol use is considered an integral part of the college experience using the College Life Alcohol Salience Scale (CLASS; Osberg et al., 2010). Among U.S. college students, research has found these perceptions to be robustly associated with elevated levels of alcohol use (rs = 0.31 to 0.71) and negative consequences (rs = 0.35 to 0.52; Bravo, Prince, & Pearson, 2017; LaBrie, Kenney, Napper, & Miller, 2014; Osberg & Boyer, 2016; Osberg, Billingsley, Eggert, & Insana, 2012; Ward, Galante, Trivedi, & Kahrs, 2015), including prospective associations among first year college students (Osberg, Insana, Eggert, & Billingsley, 2011).

Beyond direct associations with alcohol outcomes and in line with various theoretical models linking personality traits to substance use behaviors via their influence on individual beliefs or perceptions (e.g., Acquired Preparedness Model, Smith & Anderson, 2001; Theory of Planned Behavior, Ajzen, 2011; Health Belief Model, Rosenstock, 1974), two cross-sectional studies have demonstrated that internal college alcohol beliefs partially mediate the associations between personality traits (i.e., impulsivity and sensation seeking) and alcohol-related outcomes among college students (Hustad, Pearson, Neighbors, & Borsari, 2014; Pearson & Hustad, 2014). These results indicate that personality-tailored interventions targeting the degree to which alcohol use is considered an integral part of the college experience may be appropriate (Conrod, Castellanos-Ryan, & Mackie, 2011). However, these studies were limited by their cross-sectional study design, and thus lacked the ability to examine these associations prospectively to demonstrate temporal precedence (i.e., one requisite for making causal inferences). In addition, these studies utilized a unidimensional assessment of impulsivity, and research suggests that impulsivity is multifaceted (Cyders et al., 2007; Whiteside & Lynam, 2001) with different facets exhibiting different associations with alcohol outcomes (Kaiser, Bonsu, Charnigo, Milich, & Lynam, 2016; LaBrie et al., 2014).

Finally, the data were collected in a single cultural milieu (i.e., a large northeast university in the United States) and it is not clear how generalizable these findings are to college students across various cultures and countries.

Recent cross-cultural research by our research team has found that internal college alcohol beliefs is significantly and positively associated with various alcohol outcomes (e.g., typical quantity, binge drinking frequency, negative consequences) among college students in three countries (U.S., Argentina, and Spain) and these associations are fairly similar across countries and gender (Bravo, Pearson, et al., 2017). However, a cross-cultural examination of the mediation effects found in previous studies (Hustad et al., 2014; Pearson & Hustad, 2014) could help further guide the development of effective, contextually-tailored interventions targeting internalized college alcohol beliefs. Specifically, a better understanding of how personality traits (i.e., impulsivity) impact internalized college alcohol beliefs and alcohol outcomes should help tailor intervention efforts to the different needs of college students with different cultural backgrounds.

The present study sought to cross-culturally replicate and extend previous findings by examining three distinct research questions: a) to what extent are the mediational effects found in previous research (Hustad et al., 2014; Pearson & Hustad, 2014) replicable when examining impulsivity multidimensionally (i.e., positive urgency, negative urgency, premeditation, perseverance, and sensation-seeking), b) to what extent does the proposed double mediation model (i.e., impulsivity-related traits → college alcohol beliefs → alcohol use → negative consequences) replicate when examining these associations prospectively (e.g., baseline sensation seeking → baseline college alcohol beliefs → follow-up alcohol use → follow-up negative consequences), and c) are these models invariant across distinct cultural contexts (i.e., across different countries) and gender (men vs women)? Based on findings from previous cross-sectional research (Hustad et al., 2014; Pearson & Hustad, 2014) and prospective research (Osberg et al., 2011), we expected that college alcohol beliefs would prospectively predict alcohol outcomes and mediate (both cross-sectionally and prospectively) the associations between impulsivity-related traits and alcohol outcomes.

2. Method

2.1. Participants & procedures

College students from four universities (n = 1864) across three countries (U.S. [two universities; one located in the southeast and the other in the southwest], Argentina, and Spain) participated in the baseline online survey study regarding personality traits, alcohol beliefs, and alcohol use behaviors (for more information on recruitment procedures, see Bravo et al., 2018). Three of the four sites also participated in a follow-up assessment approximately three months later (the southeastern U.S. site did not participate in this follow-up). Of the 884 students eligible for the follow-up (i.e., students who consumed alcohol at least once in the previous month during baseline), 271 completed the same survey from the baseline roughly three months later and were entered in raffles for cash prizes at their respective institutions. To test our proposed cross-sectional mediational model, we used baseline data from students who consumed alcohol at least once in the previous month (n = 1429; U.S. sites combined, n = 733, 72.3% women; Argentina, n = 404, 70.5% women; Spain, n = 292, 52.2% women). To test our proposed prospective mediation model, we used data from students who participated in the follow-up and consumed alcohol in the previous month during the follow-up assessment (n = 242; U.S., n = 30, 66.7% women; Argentina, n = 120, 66.7% women; Spain, n = 92, 80.4% women). These studies were approved by the institutional review boards (or their international equivalent) at the participating universities.

2.2. Measures

2.2.1. Impulsivity-related traits

At the U.S. sites, we used the UPPS-P Impulsive Behavior Scale (Lynam, Smith, Whiteside, & Cyders, 2006). The UPPS-P is a 59-item scale devised to assess positive urgency, negative urgency, premeditation, perseverance, and sensation-seeking. Items are assessed on a 4-point response scale (1 = Disagree Strongly, 4 = Agree Strongly). In Spain and Argentina, we administered the Spanish version of the scale (Pilatti, Lozano, & Cyders, 2015; Verdejo-García, Lozano, Moya, Alcázar, & Pérez-García, 2010).

2.2.2. College alcohol beliefs

The College Life Alcohol Salience Scale (CLASS; Osberg et al., 2010) was used to assess college alcohol beliefs of college students. Items are measured on a 5-point response scale (1 = Strongly Disagree, 5 = Strongly Agree). In Spain and Argentina, we employed the Spanish version of the CLASS (see translating and adaptation procedures in Bravo, Pearson, et al., 2017). Although originally examined as a 15-item measure, Bravo et al. revealed that a 12-item version was scalar invariant across gender and drinker status, and metric invariant across countries (thus we used the 12-item version for the present study).

2.2.3. Alcohol consumption

The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) was used to measure alcohol consumption. Participants indicated the total amount of Standard Drink Units (SDUs) taken during a typical
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