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Positive and negative pathways linking depressive symptoms to problematic alcohol use among Argentinian college students: An examination of positive and negative urgency traits and internal drinking motives

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Abstract

Growing evidence suggests the tendency to act rashly under positive and negative emotions and affect-related drinking motives connect symptoms of mood disorders with alcohol-related problems. However, studies examining this sequence are scarce in Latin-American samples. The present study evaluated, in Argentinian college students ($n=403$; 68.2% women; $M_{age}=21.03\pm 4.90$), a sequential model of symptoms of depression, urgency traits, internal drinking motives and problematic alcohol use. Path analysis was conducted to examine the direct and indirect associations between symptoms of depression and problematic alcohol use (heavy episodic drinking and alcohol-related negative consequences) via positive and negative urgency traits and internal drinking motives. Findings revealed indirect associations from depressive symptoms to problematic alcohol use via urgency traits and drinking motives (e.g., depression symptoms \rightarrow positive [negative] urgency \rightarrow enhancement [coping] \rightarrow drinking problems). This suggests that students who experience more symptoms of depression may be more likely to react to these experiences of negative affect by engaging in heavy drinking episodes and encounter more alcohol-related problems. This seems to stem from a higher propensity to act rashly during intense emotional experiences and a greater motivation to drink as a means of regulating their mood. Future interventions aimed at preventing or reducing problematic alcohol use (especially among Argentinian young adults) might consider targeting these specific impulsivity traits as well as affect-related drinking motivations.

Keywords: symptoms of depression, urgency traits, drinking motives, problematic alcohol use, college students

Introduction

Depression is highly prevalent among college students from around the world (Li et al., 2022), albeit more information on its prevalence and determinants is needed in several countries, including Argentina. It has been reported that 18% of Argentinian college students exhibit symptoms indicative of severe or extreme depression (Leonangeli et al., 2022), whereas others have suggested that close to 40% of this population could suffer from depression (Mezquita et al., 2019). Furthermore, recent findings shed light on the extent of alcohol-related issues within this population. Monthly alcohol use is normative among Argentinian college students (Pilatti et al., 2023) and, among those who reported alcohol use in the last month, a staggering 58.5% engaged in heavy episodic drinking. This pattern of alcohol consumption is usually referred to as drinking 56/70 grams of alcohol (for women/men, respectively) in ≤ 2 h (National Institute on Alcohol Abuse and Alcoholism, 2004). Furthermore, nearly 35% of those students (Pilatti et al., 2023) scored ≥ 8 on the Alcohol Use Disorders Identification Test (Babor et al., 2001), indicating hazardous drinking behavior. Combined with prior literature linking depression to alcohol problems among college students (Bravo, Pilatti et al., 2018), these high rates of depression and problematic drinking among Argentinian college students underscores the need for a more profound understanding of the mental health challenges faced by this at-risk population.

For some, the co-occurrence of mood disorder symptoms (e.g., depression) and problematic alcohol use may be explained by the self-medication or tension reduction hypothesis (Khantzian, 1997). This model postulates that alcohol is consumed to alleviate psychological distress (i.e., a state of emotional suffering indicative of impaired mental health that may reflect symptoms of internalizing psychopathology, such as mood or anxiety disorders). According to these principles, individuals experiencing psychological distress are

more likely to engage in problematic alcohol use as a means of relieving their affective symptoms (i.e., negative affect regulation model). Furthermore, it has been suggested that approximately one in four individuals report using alcohol or other drugs to cope with emotional suffering (Turner et al., 2018). The positive affect regulation model offers another etiological pathway to problematic alcohol use, suggesting that individuals use alcohol to enhance and elevate their positive mood (Sher et al., 2005). Various studies support the associations postulated by these negative and positive reinforcement pathways models, elucidating psychological conditions (e.g., low emotional stability [Mezquita, Bravo et al., 2018] and low distress tolerance [Pilatti et al., 2022; Webb et al., 2020]) that influence alcohol use to regulate mood when experiencing psychological distress.

Urgency traits as transdiagnostic factors for psychopathology

Urgency traits, the propensity to act rashly and engage in maladaptive behavior during heightened emotional states (Cyders et al., 2016), have been implicated in both negative and positive reinforcement pathways (Berg et al., 2015). Intense negative emotions may promote alcohol use as means to alleviate the undesirable state of emotional suffering (i.e., negative reinforcement). Individuals experiencing intense positive emotions, on the other hand, may use alcohol to exacerbate these emotions or make them last longer (i.e., positive reinforcement).

These traits may serve as transdiagnostic personality risk factors for various psychopathological disorders (Berg et al., 2015; Cyders et al. 2016; Johnson et al., 2017; Mattingley et al., 2023). For instance, negative urgency is distinctly linked to substance use disorders (Mattingley et al., 2023), while different forms of emotion-related impulsivity (i.e., dispositions toward impulsive actions triggered by heightened emotional states) are positively related to anxiety, depression and substance use (Johnson et al., 2017).

Furthermore, a meta-analytic investigation (Berg et al., 2015) revealed that both negative and positive urgency exhibit significant associations with a broad spectrum of psychopathological conditions, including depression and alcohol use.

Research has focused on elucidating the underlying mechanisms that channel urgency traits with diverse forms of psychopathology, such as symptoms of depression and problematic substance use (Gunn et al., 2018; Pang et al., 2014; Um et al., 2019). Collectively, these studies indicate a positive correlation between levels of depression and problematic alcohol use, wherein the tendency towards impulsive actions driven by mood-related factors plays a pivotal role. Pang et al. (2014) reported that, in a sample of adolescents, negative urgency mediated the association between depressive symptoms and alcohol use (i.e., more severe depression tendencies were associated with heightened negative urgency which was associated with augmented alcohol use). In a study involving adolescents (Wolitzky-Taylor et al., 2016), negative urgency significantly mediated the correlation between psychological distress and alcohol-related problems. Altogether, these findings suggest that individuals experiencing emotional suffering due to impaired mental health may be more likely to exhibit problematic alcohol use via an increased tendency for impulsive behavior during these intense negative emotional states.

The role of positive urgency remains relatively less explored in comprehensive models linking symptoms of depression and alcohol-related indicators via emotion-related factors. This is particularly troublesome given the extant of the evidence suggesting that positive urgency is a key predictor of alcohol use and associated problems (Berg et al., 2015; Smith & Cyders, 2016; Whitt et al., 2019), coupled with the strong correlation between positive and negative urgency facets (Billieux et al., 2021; Smith & Cyders, 2016). Noteworthy, Um et al. (2019) tested, in a community-based sample of adults, the mediational

role of both urgency traits in the relationship between depressive symptoms and problematic alcohol use. They observed that negative, but not positive, urgency significantly mediated this indirect association while positive urgency emerged as a significant mediator only when negative urgency was not included in the model. This nuanced interplay underscores the importance of considering both positive and negative urgency facets in constructing comprehensive models that elucidate the connections between symptoms of depression and alcohol outcomes (i.e., use and problems) through emotion-related mechanisms.

Drinking motives as mediators of the relation among distress, urgency, and alcohol use

As already stated, it has been postulated that negative and positive urgency are, respectively, components of the negative and positive reinforcement pathways (Berg et al., 2015). Drinking motives, the underlying incentives that influence the decision to drink (Cooper, 1994; Cox & Klinger, 1988), are another central feature of these etiological pathways. It is assumed that the decision to drink alcohol can be determined by the anticipated positive affective consequences of this action (increase positive feelings or decrease negative feelings), which exceed those of not consuming the substance, also considering other available incentives. The positive reinforcement pathway (i.e., consumption guided by the rewarding, pleasurable effects associated with drinking alcohol) is related to enhancement motives and with heavy episodic drinking while the negative reinforcement pathway (i.e., consumption guided to relieve negative emotions) is related to coping motives and alcohol-related negative consequences (Cooper et al., 2016).

Drinking motives, pivotal proximal determinants of drinking that mediate the effect of distal variables (e.g., mental health, personality traits) on alcohol outcomes (Cooper et al., 2016), are described based on two dimensions: 1) avoidance versus approach, and 2) internal versus external. These categories encompass social (approach, external), coping (avoidance,

internal), conformity (avoidance, external), and enhancement (approach, internal) motives. Of particular significance are motives tied to affect: 1) drinking to enhance positive emotions (enhancement motives) and 2) drinking to alleviate or avoid negative emotions (coping motives). Multiple studies conducted with samples of U.S. college students highlight a positive association between negative urgency and alcohol use indicators, mediated by drinking motives, especially coping and enhancement motives (Adams et al., 2012; Anthenien et al., 2017; Wolkowicz et al., 2021; Yang et al., 2019).

For instance, Adams et al. (2012) observed that negative urgency indirectly contributed to heightened problem drinking through both negative and positive reinforcement pathways. Building on this, Anthenien et al. (2017) incorporated alcohol expectancies (i.e., anticipated positive and negative effects of drinking; Leigh, 1999) into a comprehensive model. Their findings substantiate the positive, but not the negative, reinforcement pathway, as individuals with increased negative urgency were more likely to consume more drinks per week to enhance positive affect due to the exhibiting of more tension reduction expectancies (e.g., negative urgency → enhancement motives → positive expectancies → drinks per week). Relatedly, Wolkowicz et al. (2021) explored the indirect links between negative urgency and alcohol-related problems through cognitive variables (i.e., drinking motives and alcohol expectancies). Their findings unveil indirect effects of negative urgency on alcohol problems via both positive (including positive alcohol expectancies and enhancement motives) and negative (coping motives) reinforcement pathways. This dual pathway, from negative urgency to problematic alcohol use through distress intolerance and coping motives, was also substantiated by Yang et al. (2019).

The present study

In summary, past research suggests that urgency links symptoms of depression to alcohol-related problems and that endorsing greater positive and negative urgency may lead to more alcohol use or problems via internal drinking motives. Noteworthy, most prior studies have separately examined either the indirect associations from depressive symptoms to problematic alcohol use via urgency traits (mainly negative urgency), the indirect associations from depressive symptoms to problematic alcohol use via internal drinking motives, or the indirect associations of urgency to alcohol outcomes via motives tied to affect (i.e., coping and enhancement). Moreover, these studies largely focused on U.S. or European samples. The present study examined, in Argentinian college students, the indirect associations of symptoms of depression to two indicators of problematic alcohol use (i.e., frequency of heavy episodic drinking and alcohol-related negative consequences) via the behavioral tendency to act rashly under intense emotions (i.e., negative and positive urgency) and internal drinking motives (i.e., coping and enhancement).

The present work significantly advances the field by not only addressing the role of negative urgency in a population that has largely been neglected but also by incorporating positive urgency alongside the typical consideration of negative urgency. Furthermore, the present study significantly broadens the proposed cascade leading to problematic alcohol use by integrating motives into the model. Our hypotheses posited that the positive association between symptoms of depression and problematic alcohol use will be elucidated through the sequential links of negative urgency and coping motives (i.e., negative reinforcement pathway) and positive urgency and enhancement motives (i.e., positive reinforcement pathway).

Method

Sample and procedure

The present study utilized data from the second (and final) wave of a longitudinal project. It is essential to note that several variables, including symptoms of psychological distress, were exclusively measured during this second wave. Consequently, the focus of the present study is on this cross-sectional data. At the beginning of the study (March 2018), the research team visited classrooms attended by freshmen students of two public universities of Cordoba (Argentina). There, students were invited to provide an email address to be part of a two-wave study assessing risk factors associated with substance use. A total of 3820 college students were sent an email with the link to an online (*Qualtrics*) survey. Those who completed the first wave ($n = 1033$) were sent the invitation for the second wave. The survey explained the aims of the study, emphasized the voluntary nature of the participation and the confidentiality handling of the data, and provided contact information of the researchers. Those who completed the second wave of surveys were eligible for a raffle of two cash prizes (each equivalent to ≈ 22 US dollars at the moment of data collection), 10 gift cards to exchange in a bookstore (≈ 9 US dollars each) and ≈ 200 small items (e.g., thermos). Participants provided their consent to participate by clicking on the "next" option. The survey provided electronic prompts for each missing response. Contact information was used to identify duplicated responses and for the raffles. Participants received up to eight reminders (via email, phone and social media) to complete the survey.

Data from the second wave was collected from mid-April to mid-November 2019. A sample of 558 students completed at least 80% of the second survey (70.6% women, Mean age = 21.11 ± 5.12); however, the present study focused on those who reported alcohol use within the previous month ($n = 422$; 67.8% women, Mean age = 20.99 ± 4.80) and who had completed answers on the urgency, drinking motives, and symptoms of depression measures. Therefore, after excluding 19 cases with incomplete answers, the final analytic sample

comprised 403 students (68.2% women; Mean age = 21.03±4.90). The procedures were approved by the institutional review board (#PE24) and endorsed the ethical guidelines for human research of the American Psychological Association (2017), the Declaration of Helsinki, and the National Law 25.326 for the Protection of Personal Data.

Measures

For all measures, composite scores were created by summing/averaging items (reverse-coding of items was conducted for the urgency measures), such that higher scores indicate higher levels of the construct. Internal consistency of all variables is presented on the diagonals of Table 1.

Symptoms of depression. We used a translated into Spanish version of the 20-item General Depression scale (GD) of the Inventory of Depression and Anxiety Symptoms (IDAS, Watson et al., 2007). The GD encompasses 10 items from the Dysphoria dimension and 10 specific items (i.e., symptoms) from other scales. Participants indicated, on a 5-point scale (from 1= *not at all* to 5= *extremely*), the extent to which they had experienced the symptom described by each item during the past two weeks. In the context of an independent and larger cross-cultural study, the English version of the IDAS was translated into Spanish by three Spanish-speaking psychologists proficient in English and Spanish, and knowledgeable on depression. A confirmatory factor analysis suggested fairly adequate model fit (CFI = 0.958; TLI = 0.950; RMSEA 0.068 [90% CI 0.062, 0.074]).

Negative and positive urgency traits. We used the Spanish version (Lozano et al., 2018) of the 20-item Short UPPS-P Impulsive Behavior Scale (Cyders et al., 2014). The UPPS-P assesses five impulsivity-like traits: lack of perseverance, lack of premeditation, sensation-seeking, positive urgency and negative urgency. Given the study aims, we used the positive

and negative urgency dimensions. Each of these dimensions encompass 4 items rated on a 4-point scale (ranging from 1 = *strongly agree* to 4 = *strongly disagree*).

Drinking Motives. We used the Spanish version (Mezquita, Ibáñez, et al., 2018) of the Drinking Motives Questionnaire-Revised, Short Form (DMQ-R SF; Kuntsche & Kuntsche, 2009) that assesses drinking motives within four domains (3 items each): social, conformity, enhancement, and coping. Based on the aims of the present study, we only focused on coping and enhancement motives. Participants rated each item on a 5-point scale (ranging from 1 = *almost never/never* to 5 = *almost always/always*). Previous studies provided evidence of the validity and reliability of DMQ-R SF scores to assess drinking motives in Argentinian college students (Bravo, Pilatti et al., 2018).

Heavy episodic drinking. Participants reported the number of days they engaged in heavy episodic drinking during the previous month (i.e., “*In the past 30 days, how many days have you consumed five or more standard drinks (if you are male) or four or more standard drinks (if you are female) in a period of two hours or less?*”). An image depicting different alcohol beverages helped participants calculate the number of standard drink units (SDU) consumed (1SDU = 14 grams of pure alcohol).

Negative Alcohol-related Consequences. We used the Spanish version (Pilatti et al., 2014) of the Brief Young Adult Alcohol Consequences Questionnaire ([B-YAACQ], Kahler et al., 2005). Participants indicated if they have experienced (1= *yes*; 0= *no*) each of 24 items assessing diverse alcohol-related negative consequences, during the past month. The Spanish version, validated in a sample of Argentinian college students, was supported as an appropriate measure in terms of validity and internal consistency (Pilatti et al., 2014).

Data analysis

We first conducted zero-order correlations to examine the associations involving the distal predictor (i.e., symptoms of depression), mediators (negative and positive urgency and internal drinking motives) and the two dependent variables (i.e., frequency of heavy episodic drinking and alcohol problems). Then, we applied path analysis to examine the direct and indirect associations of symptoms of depression on the dependent variables and the sequential association between the included variables (i.e., urgency traits and internal drinking motives). The model was fully saturated such that the indicator of symptoms of depression had paths estimated on each urgency trait, drinking motives, and indicators of problematic alcohol use. To assess the total, direct, and indirect effects, we employed bias-corrected bootstrapped estimates (Efron & Tibshirani, 1993), a method robust against minor deviations from normality (Erceg-Hurn & Mirosevich, 2008) and recognized for providing a resilient test of mediation (Fritz & MacKinnon, 2007). Statistical significance was determined by 95% bias-corrected bootstrapped confidence intervals (CIs) that did not encompass zero (based on 10,000 bootstrapped samples). The analyses were conducted with *MPlus* 8.4 (Muthén & Muthén, 2019).

Results

Bivariate Results

Bivariate correlations between model variables are presented in Table 1.

Table 1. *Bivariate correlations and descriptive statistics among study variables*

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1. IDAS-GD	<u>.899</u>	.38	.25	.37	.18	.03	.26	50.29	14.14
2. Negative Urgency		<u>.751</u>	.38	.30	.16	.04	.30	2.12	0.72
3. Positive Urgency			<u>.766</u>	.22	.24	.11	.34	1.62	0.61
4. Coping Motives				<u>.739</u>	.39	.25	.39	1.50	0.67
5. Enhancement Motives					<u>.788</u>	.33	.47	2.19	1.05
6. Heavy Episodic Drinking Days						-	.38	0.80	1.49

7. Alcohol Problems	<u>.826</u>	4.02	3.84
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Note. IDAS-GD= Inventory of Depression and Anxiety Symptoms - General Depression scale. Significant correlations ($p < .05$) are in bold typeface and Alpha's Cronbach values in underline for emphasis.

Path Analysis Results

Table 2 and Figure 1 present the total, indirect, and direct associations of symptoms of depression on indicators of problematic alcohol use (i.e., heavy episodic drinking and alcohol-related problems) via urgency traits (i.e., negative and positive) and internal drinking motives (i.e., coping and enhancement). The indirect associations between both urgency traits and alcohol outcomes via internal drinking motives (i.e., coping and enhancement) are also presented in Table 2. Symptoms of depression were not significantly associated with any indicator of problematic alcohol use once accounting for the associations of urgency and drinking motives. The indirect associations of symptoms of depression with drinking problems and heavy episodic drinking via urgency traits and drinking motives are described below for each indicator of problematic alcohol use.

Frequency of heavy episodic drinking. Symptoms of depression were indirectly associated with heavy episodic drinking via coping and enhancement motives (i.e., depression → coping [enhancement] → heavy episodic drinking). The double mediated paths from symptoms of depression to heavy episodic drinking via negative urgency and coping motives and via positive urgency and enhancement motives were also statistically significant (i.e., depression → positive [negative] urgency → enhancement [coping] → heavy episodic drinking). These indirect associations suggest that those who experienced more symptoms of depression were more likely to engage in heavy drinking episodes via a higher tendency to act rashly when under intense emotions and a higher motivation to drink to enhance positive mood or to

alleviate distress.

Alcohol-related negative consequences. Symptoms of depression were indirectly associated with drinking problems via positive and negative urgency (i.e., depression → positive [negative] urgency → negative alcohol-related consequences) and internal drinking motives (i.e., depression → coping [enhancement] → negative alcohol-related consequences). The double mediated paths from symptoms of depression to alcohol problems via urgency traits and drinking motives were also statistically significant (i.e., depression → positive [negative] urgency → enhancement [coping] → drinking problems). These indirect associations suggest that those who experienced more symptoms of depression were more likely to report experiencing more negative alcohol-related consequences via a higher tendency to act rashly when under intense emotions and a higher motivation to drink to enhance positive mood or to alleviate distress.

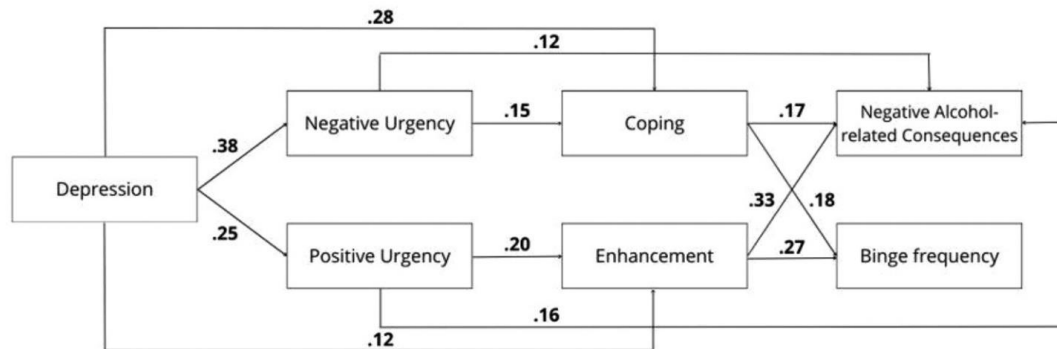
Table 2.

Summary of total, indirect, and direct effects of comprehensive mediation path model

Alcohol Variables:	<i>Frequency of Heavy Episodic Drinking</i>		<i>Negative Alcohol-related Consequences</i>	
	β	95% CI	β	95% CI
Predictor Variable: <i>Symptoms of Depression</i>				
Total	.031	-.072, .137	.257	.153, .352
Total indirect ^a	.109	.034, .195	.209	.140, .280
Negative Urgency	-.015	-.060, .031	.044	.005, .091
Positive Urgency	.010	-.014, .044	.040	.012, .085
Coping	.050	.013, .105	.049	.018, .090
Enhancement	.032	.005, .070	.040	.006, .082
Negative Urgency - Coping	.010	.002, .027	.010	.003, .023
Positive Urgency - Coping	.004	.000, .013*	.004	.000, .013*
Negative Urgency - Enhancement	.003	-.007, .016	.004	-.009, .019

Positive Urgency - Enhancement	.013	.005, .028	.016	.007, .031
Direct	-.079	-.177, .021	.048	-.051, .147
Predictor Variable: <i>Negative Urgency</i>	<i>Frequency of Heavy Episodic Drinking</i>	<i>Negative Alcohol-related Consequences</i>		
Total	-.002	-.126, .120	.155	.041, .268
Total indirect ^a	.036	-.004, .086	.038	-.008, .083
Coping	.027	.006, .066	.026	.008, .056
Enhancement	.009	-.019, .043	.011	-.024, .051
Direct	-.039	-.152, .081	.118	.011, .224
Predictor Variable: <i>Positive Urgency</i>	<i>Frequency of Heavy Episodic Drinking</i>	<i>Negative Alcohol-related Consequences</i>		
Total	.112	.009, .228	.247	.129, .367
Total indirect ^a	.071	.033, .119	.083	.043, .131
Coping	.017	.001, .047*	.016,	.000, .046*
Enhancement	.054	.024, .094	.067	.035, .110
Direct	.041	-.061, .156	.164	.049, .285

Note. Significant associations are in bold typeface for emphasis and were determined by a 95% bias-corrected standardized bootstrapped confidence interval (based on 10,000 bootstrapped samples) that does not contain zero. ^aReflects the combined indirect associations within the model. * Although statistically significant, these indirect associations should be taken with caution given a non-significant direct association between Positive Urgency and coping motives ($\beta = .09$, 95% CIs = $-.009, .194$).



Discussion

The present study examined the indirect associations between symptoms of depression and indicators of problematic alcohol use via two affect-related mediators: urgency traits and drinking motivations to regulate mood. Novel aspects of this study are the evaluation of a comprehensive model that includes both negative *and* positive urgency alongside mood-related drinking motives in Argentinian college students, an understudied population. Our findings revealed dual indirect pathways from symptoms of depression to alcohol-related negative consequences and frequency of heavy episodic drinking. This may suggest that students experiencing more symptoms of depression are more likely to engage in heavy drinking episodes and face more alcohol-related problems due to a higher tendency to act rashly when experiencing intense emotions and a greater motivation to drink to regulate their mood.

Our results align substantially with past research by supporting the role of negative urgency as a potential key mediator linking symptoms of depression and problematic alcohol use (Pang et al., 2014; Um et al., 2019). Furthermore, our observed associations extend past studies by emphasizing the role of positive urgency. While Um et al. (2019) included positive urgency in their mediational models, they did not find a significant indirect path from depressive symptoms to problematic alcohol use via positive urgency (when negative urgency was also included in the model). It is possible that this difference arises from methodological aspects, as Um et al. studied these associations in a community sample of adults, while here the model was tested in college students. By examining both urgency traits, the present study enhances our understanding of the interconnections between transdiagnostic risk factors and problematic alcohol use. While previous research predominantly concentrated on negative urgency (Adams et al., 2012; Wolitzky-Taylor et al.,

2016; Wolkowicz et al., 2021), the incorporation of positive urgency proves especially insightful. Our findings not only support the negative reinforcement pathway but also propose an additional affect-related pathway linking psychological distress and problematic alcohol consumption through positive urgency and enhancement motives. Collectively, the current results underscore the significance of considering not only the inclination toward impulsive actions driven by mood-related factors but also the affective valence.

Indeed, the inclusion of drinking motives might help clarify how urgency traits, which are a risk factor for those experiencing symptoms of depression (or other manifestations of psychological distress), are associated with problematic alcohol use. Supporting this possibility, previous studies observed that negative urgency was indirectly associated with problematic drinking through two mood-related drinking motives: coping and enhancement motives (Adams et al., 2012; Wolkowicz et al., 2021). Notably, Anthenien et al. (2017) found evidence supporting the positive but not the negative reinforcement pathway, where negative urgency was indirectly associated with greater alcohol use per week via an increased motivation to enhance positive affect. The absence of support for the negative reinforcement pathway may be attributed to the nature of the outcome variable. Remarkably, coping motives consistently exhibit stronger associations with drinking problems than with overall alcohol use, while enhancement motives display a more robust link with heavy alcohol use rather than drinking-related issues (Cooper et al., 2016). Taken together with our study findings, and others that included problematic alcohol use as the dependent variable (Adams et al., 2012; Wolkowicz et al., 2021), the disposition to act rashly when experiencing intense negative emotions may put these individuals at higher risk for problematic alcohol use in an attempt to improve their emotional state. This risk seems to encompass both negative (drinking to cope with distress) and positive (drinking to increase positive mood)

reinforcement pathways.

Implications

The present findings provide input for the planning of prevention efforts. Those who present symptoms of depression and are motivated to drink as a way of coping with negative emotions, could benefit from interventions targeting dysfunctional coping mechanisms (Cavicchioli et al., 2019) and improving regulatory skills (e.g., via emotion regulation [Cavicchioli et al., 2019; Stappenbeck et al., 2021] or mindfulness [Vinci et al., 2014]). These strategies could provide students adaptive tools to navigate adverse emotions without engaging in risky behaviors such as alcohol use. Alternatively, those with impulsive behaviors as a result of positive affect, might benefit from intervention strategies aimed at providing alternative -and healthy- methods for enhancing their positive mood. For instance, engaging in physical activity and exercise (Biddle et al., 2021) seems effective in reducing alcohol consumption in individuals with alcohol use disorder (for a review, see Lardier et al., 2021). In line with these suggestions, interventions such as the *Late Night Programming*, which focus on providing students alternative and alcohol-free activities (e.g., music, dance, video games), have shown promising results in college students (Maney et al., 2002; Wilkinson et al., 2018).

Limitations

The interpretation of our findings requires consideration of several limitations. First, our study was conducted utilizing cross-sectional data. Consequently, an inherent limitation lies in our inability to establish temporal associations among the variables included in the study. Other limitations of our study are the use of self-report measures, which depends on the ability to recall consumption behaviors (hence it can be affected by memory biases), and the use of convenience sampling. The lack of random sampling restricts the generalization of

the findings. In line with previous research conducted in Argentinian citizens (Salguero et al., 2023), the majority of participants were women, who are known to exhibit a higher rate of self-selection in health-related studies compared to men (Glass et al., 2015). Additionally, our focus was on individuals who reported alcohol use in the last month; therefore, the relationships proposed by the model might not be applicable to those who use alcohol less frequently. Last but not least, our model did not incorporate, for the sake of parsimony, other important constructs associated with alcohol outcomes, such as social norms (subjective perceptions of how common or accepted is the use of a given substance [Pilatti et al., 2017]) or cognitive distortions (e.g., ruminative thinking, Bravo et al., 2017). The latter are automatic irrational thoughts that are positively associated with alcohol use (Ruiz Santos et al., 2023).

Conclusions

Notwithstanding these limitations, our investigation displays several strengths. Foremost, we implemented a comprehensive model that integrated urgency traits and mood-related motives. This approach distinguishes our study by providing a nuanced understanding of the complex interplay between psychological factors and alcohol-related behaviors. Moreover, our research contributes to the existing body of knowledge on alcohol use by specifically addressing two significant problematic outcomes: heavy episodic drinking and alcohol-related problems. This deliberate focus enhances our comprehension of the underlying mechanisms driving these behaviors. Another salient feature is the inclusion of a sample comprising college students from less-explored populations (i.e., Latin American countries). By doing so, we aimed to broaden the scope of research in this domain and offer insights into addictive behaviors that may be contextually influenced. This inclusive approach contributes to the generalizability of past findings, thereby advancing our collective

understanding of addictive behaviors in a global context.

Data availability: The data that support the findings of this study are available from the authors upon reasonable request.

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