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# Coping motives for alcohol and cannabis use better reflect negative emotionality than emotion regulation deficits in young adults

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## Abstract

**Objective.** Motivational models argue that people use alcohol and cannabis to regulate emotions (Cooper et al., 2016; Cox & Klinger, 1988). Descriptions of global self-reports of coping motives have emphasized their role as a reflexive or disengagement emotion regulation strategy focused on avoidance of stressors or negative emotions and focus on building emotion regulation skills in terms of the clinical implications (Bresin & Mekawi, 2019, 2021). However, there is also substantial evidence that self-reports of coping motives reflect a broader tendency towards negative emotionality.

**Method.** We used data from two large ecological momentary assessment studies of regularly drinking and cannabis using young adults (age 18–22, n=297) to test the convergent, divergent, and criterion validity of global self-reports of coping motives in both global self-report and daily life data.

**Results.** Pre-registered analyses demonstrated that global self-reports of coping motives for alcohol and cannabis use were at best weakly associated with global and EMA reports of reflexive or disengagement emotion regulation strategy use, and were also moderately associated with both global and EMA measures negative emotionality, emotion reactivity, and negative urgency.

**Conclusion.** These findings undermine the assertion that coping motives reflect deficits in adaptive emotion regulation strategies rather than a broad tendency towards negative affectivity. Research should seek to understand what global self-reports of coping motives reflect.

### Keywords

coping motives; emotion regulation; alcohol use; cannabis use; affect regulation; ecological momentary assessment

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## Introduction

Motivational models argue that people are driven to use alcohol and cannabis in order to decrease negative or increase positive emotions (Cooper et al., 2016; Cox & Klinger, 1988). People are thought to engage in reflexive or disengagement emotion regulation strategies (such as rumination, avoidance, or suppression) when more active or adaptive oriented strategies (such as problem solving or reframing) are absent, ineffective, or too difficult to deploy (Compas et al., 2017). Using alcohol or cannabis to relieve negative emotions is thought to represent one such tendency towards reflexive or disengagement emotion regulation (Cox & Klinger, 1988), and people who report coping motives for alcohol or cannabis use are hypothesized to lack more adaptive emotion regulation strategies (Cooper, 1994). We tested this hypothesis using data from both global self-report and daily life data, focusing whether coping motives really indicate specific deficits in adaptive emotion regulation strategies.

What does it mean when people say they frequently drink or use cannabis to cope with their negative emotions? Global self-reports of coping motives are assumed to be face valid: that people who say they frequently drink or use cannabis to cope with their negative emotions actually do so. However, the evidence is mixed at best. First, people who report higher coping motives also report more alcohol and cannabis use in both cross-sectional (Bresin & Mekawi, 2019, 2021; Cooper, 1994; Hauck-Filho et al., 2012; Kuntsche et al., 2006, 2008; MacLean & Lecci, 2000; Nemeth et al., 2011; Simons et al., 1998) and daily life studies (Bonar et al., 2017; Dora et al., 2023; Pearson et al., 2020). But studies find mixed results when looking at the association between global and EMA self-reported coping motives. For example, Dvorak, Pearson, & Day (Dvorak et al., 2014) found a significant correlation between the DMQ and daily averaged EMA coping motives ($r = .5$, $p < .05$), in a sample of 74 moderate AUD drinkers, and Arbeau, Kuiken, & Wild (Arbeau et al., 2011)had found a significant but small interaction between negative affect and global self-report coping motives on predicting daily coping motives ($B = .18$, $p < .01$). On the other hand, Todd & Armeli (Todd et al., 2003) struggled to find significant interactions between global self-reported coping motives and within-day, daily, and weekly relations with coping motives, negative affect and alcohol use. In a review on the state of EMA-reported coping motives (Votaw & Witkiewitz, 2021), the authors conclude that trait motives (i.e. global self-reported motives) and EMA-reported motives likely capture different constructs in part due to the modest associations between them and the fact that trait motives did not consistently moderate within-persons associations between affect and substance use (pg. 554). Additionally, large scale, rigorous studies from people's daily lives have failed to produce robust evidence that people who report higher coping motives are any more likely to use alcohol or cannabis when they experience negative emotions (Dora et al., 2022, 2023; Littlefield et al., 2012). In other words, there is little evidence that people who report that they typically use alcohol or cannabis to help regulate their emotions actually do so in their daily lives. Thus, it is especially important to investigate the construct validity of constructs like coping motives to understand what inferences can be drawn about them.

People who report coping motives are thought to "lack other more adaptive ways of coping with these emotions" (Cooper, 1994, p. 117). Early theory and research on global

self-reports of coping motives hypothesized that they reflect both a broad deficit in the implementation of effective emotion regulation strategies *and* a tendency to experience negative emotions (Cooper, 1994; Cooper et al., 2016; Cox & Klinger, 1988). Indeed, prior work has reported modest associations coping motives for alcohol with global self-reports of engagement ($_{Avg}r$=−.15, *SD*=.08) and disengagement emotion regulation strategies ($_{Avg}r$=.30, *SD*=.08), as well as the tendency to experience negative emotions including daily/global negative affect, emotional instability, neuroticism, depression, and negative and positive urgency (*Avg r's* ranging between .26–.38) (Adams et al., 2012; Cooper et al., 2016; Dvorak et al., 2015; Magid et al., 2007). In other words, there is evidence that coping motives reflect individual differences in broader emotion dysregulation, although the vast majority of this research has focused on coping motives for drinking. Yet this contrasts with typical descriptions of coping motives, which are largely described them as a reflection of a tendency towards reflexive or disengagement emotion regulation strategies (Bresin & Mekawi, 2019, 2021).

Prior research on the construct validity of coping motives has almost entirely focused on its correlations with other global self-report measures (such as emotion regulation and negative emotionality). And this work has primarily evaluated drinking coping motives with little emphasis given to the validation of coping motives for cannabis use (e.g. Simons et al., 1998). As the items in the Marijuana Motives Questionnaire (MMQ) parallel the Drinking Motives Questionnaire (DMQ), inspecting the validity of both measures concurrently may inform generalizability or highlight discrepancies warranting further investigation. The majority of coping motives research has been conducted with college student samples, with meta-analytic evidence indicating that approximately 67% of studies examining coping motives are based on college student populations (Bresin & Mekawi, 2021). This is consistent with the history of the development of coping motives measures: the Drinking Motives Questionnaire was originally developed and validated in adolescent samples (Cooper, 1994), with its four-factor structure subsequently confirmed in college student populations (MacLean & Lecci, 2000). Further, using data from daily life methods, such as ecological momentary assessment (EMA) can provide important information about how people experience and regulate emotions in their daily lives because it minimizes biases inherent to retrospective recall (Shiffman et al., 2008). Our focus on college students provides an opportunity to examine these constructs in the population where coping motives theories were primarily developed and validated. We sought to test the construct validity (convergent, discriminant, and criterion validity) of global-self report coping motives using evidence from both global self-report and EMA data.

## Methods

### Participants

Two samples of young adults (combined n=297) ages 18–22 were included in this study, consisting students enrolled at a large university in the Pacific Northwest of the United States who reported drinking alcohol or using cannabis at least once a week. Participants received course credit for participation. Participants were 58% female and 40.5% male (with 1.5% gender diverse), 66.4% White, 32.18% Asian and Asian American, 8.6% Hispanic/

Latino, 3% Black, 3.3% Middle Eastern/North African, 4% Native American or Pacific Islander, and 11% reporting mixed or other ethnic identities (participants could endorse multiple ethnicities).

Participants completed an in-lab baseline self-report survey, and then completed an EMA protocol (either 10 consecutive days with 3 prompts per day, or 8 days over two social weekends Thursday – Sunday with 5 prompts per day). Surveys were sent at least two hours apart; participants always had one hour to complete each survey and received a reminder after 30 minutes. The study protocol was approved by the local ethics review board. Participants completed 7,935 EMA questionnaires on 2224 EMA days (78% compliance across studies).

Data were collected between 2016 and 2019. Sample size was determined by the number of participants we could collect given funding and available staffing. A sensitivity power analysis using simulations indicated that a sample size of 297 had the power ($1 - \beta = .80$, $\alpha = .05$) to detect correlations as small as $r = .16$, logistic regression odds ratios as small as 1.52 (assuming a mean frequency of drinking of 12%), and negative binomial risk ratios as small as 1.14 (assuming a mean of 1.43).

## Measures

### Coping Motives.

**Global self-report.** Participants completed 5 items each from the coping motives subscales of the Drinking Motives Questionnaire-Revised (DMQ-R) scale (Cooper, 1994; Kuntsche & Kuntsche, 2009) and the Marijuana Motives Questionnaire (MMQ) scale (Simons et al., 1998), respectively. Sample items for both measures included “Because it helps you when you feel depressed or nervous” or “To cheer you up when you are in a bad mood.” Participants responded on a 5-point Likert scale from 1 (Almost never/never) to 5 (Almost always/always). In the total sample, reliability was high for both the DMQ-R ($\alpha = 0.86$; $\Omega = 0.92$) and the MMQ ($\alpha = 0.89$; $\Omega = 0.92$).

### Alcohol Use.

**Global self-report.** Participants completed the Daily Drinking Questionnaire Revised (DDQ-R), which assesses drinking patterns over the prior 30 days (R. L. Collins et al., 1985). Drinking volume was assessed by asking for an estimate of average alcohol consumption for each day of the week over the prior 30 days (e.g., “Fill in the number of standard drinks typically consumed on that day: Monday”). We computed the typical weekly frequency of drinking as the sum of the number of days participants reported drinking during a typical drinking week (R. L. Collins et al., 1985).

**EMA: Daily Alcohol Use.** Each morning during the EMA period, participants completed an item describing their prior day’s alcohol use: “How many alcoholic drinks did you have yesterday? Please remember that a drink refers to a “standard” drink size: 12 oz. beer, 8–9 oz. malt liquor, 5 oz. wine, 1.5 oz. hard liquor.” For the current study, we scored a day as a 1 if participants reported any use, and a 0 if they reported no use, then averaged across EMAs

to obtain a proportion of days on which participants used alcohol to reflect an EMA measure of frequency of drinking.

### Cannabis Use.

**Global self-report.** Participants completed the Daily Drug Taking Questionnaire, which was adapted from the DDQ-R to assess cannabis use (Parks, G. A., 2001). Participants reported whether or not they would typically consume cannabis for each day of the week over the prior 30 days (e.g., "Place an "X" in the box of days you consumed marijuana: Monday"). Scoring yielded weekly cannabis consumption, calculated as the sum of the number of days participants reported use for each day of their typical drinking week (R. L. Collins et al., 1985).

**EMA: daily cannabis use.** Each morning, participants reported on their cannabis use with the following item "How much cannabis did you use yesterday? (Estimate in joints)." For the current study, we scored a day as a 1 if participants reported any use, and a 0 if they reported no use, then averaged across EMAs to obtain a proportion of days on which participants used cannabis.

### Emotion regulation strategy use.

**Global self-report.** Participants completed 36 items from the Cognitive Emotion Regulation Questionnaire (Garnefski et al., 2001), which captures participants typical cognitions when experiencing negative or unpleasant events. Response options ranged from 1=Almost never to 5=Almost always. Examples of these items include "I feel that I am the one to blame for it," representing the dimension of self-blame, and "I think that I have to accept that this has happened," representing the dimension of acceptance. In the current study, reliability was adequate for all subscales ($\alpha > 0.7$; $\Omega > 0.8$). We calculated the proportion of reflexive/disengagement strategy use relative to all strategies, as in our prior work (King et al., 2018), by calculating the mean of all reflexive/disengagement strategies (e.g. rumination, self-criticism, self-blame, avoidance, etc.) divided by the total mean. Our prior research has shown that this ratio is strongly associated with anxiety and depression in both cross-sectional and daily life data (Alawadhi et al., 2023; Smith et al., 2022).

**EMA self-report.** At each EMA, participants completed seven items measuring emotion regulation strategies they had used since the last assessment (Tan et al., 2012) and used in prior work (King et al., 2018; Smith et al., 2022), capturing acceptance, problem-solving, rumination, reframing, avoidance, distraction, and suppression. These items parallel closely the global self-reported emotion regulation strategies from the Cognitive Emotion Regulation Questionnaire, but written from the second-person perspective. One example being "you tried not to think about a problem or tried to forget all about it." We computed a ratio of reflexive/disengagement strategy use by dividing the number of reflexive or disengagement strategies (e.g., suppression, rumination, avoidance, and distraction) endorsed at an EMA by the total number of strategies endorsed at that same EMA, then average this across all EMAs.

### Negative Emotionality.

**Global self-report of emotional reactivity.** Participants completed 21 items from the Emotion Reactivity Scale (Nock et al., 2008). Rating was on a 0–4 Likert scale where 0=Not at all like me and 4=completely like me. Example items include "I am often bothered by things that other people don't react to," and "When I experience emotions, I feel them very strongly/intensely." Reliability was high for all subscales ($\alpha > 0.7$; $\Omega > 0.8$). We computed a total score as the average of all subscales.

**Global self-reports of internalizing symptoms: Anxiety.** Participants completed the PROMIS-Anxiety short-form measure (Pilkonis et al., 2011). Response options ranged from 1=Never and 5=Always (Cella et al., 2010). Example items include "I found it hard to focus on anything other than my anxiety," and "I felt like I needed help for my anxiety." Scoring yields a standardized T-score. Reliability was high ($\alpha$=0.97, $\Omega$=0.97).

**Global self-reports of internalizing symptoms: Depression.** Participants completed the PROMIS-Depression short-form measure (Pilkonis et al., 2011). Example items include "I felt that I had nothing to look forward to," and "I felt depressed." Response options ranged from 1=Never and 5=Always (Cella et al., 2010). Scoring yields a standardized T-score. Reliability was high ($\alpha$=0.98, $\Omega$=0.98).

**Exploratory: EMA self-report of negative and positive affect.** Participants reported on their current emotional state at each EMA since the last assessment using items adapted from the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). We included 5 positive emotions (happiness, engagement, cheerfulness, friendliness, and calm) and 5 negative emotions (anxiety, unhappiness, anger, irritability, boredom). Participants responded with a continuous slider bar ranging from 1–100 with visual anchors at 1 ("Not at all"), 50 ("Somewhat"), and 100 ("Very much"). We computed a mean of all negative and positive affect items at each observation, and then computed person level aggregated mean negative and positive affect scores across all observations within each participant. To index variability in affect, we also computed person-level standard deviations.

**Global self-report of urgency.** We measured negative and positive urgency with 12 each items from the UPPS-P (Lynam, D. R. et al., 2006). Example items include "I have trouble controlling my impulses," and "I have trouble resisting my cravings (for food, cigarettes, etc.)." Participants were asked how well each of these statements fit them using a 1–4 Likert scale where 1=agree strongly to 4=disagree strongly. Reliability was high ($\alpha > 0.8$, $\Omega > 0.8$). We computed means for each subscale.

**Exploratory: EMA self-report of urgency.** At each EMA, participants completed 4 items reflecting momentary urgency since the last assessment using items adapted from the UPPS (Whiteside & Lynam, 2001) and validated for EMA (Halvorson et al., 2021). At each observation, participants were presented with 4 randomly selected items from a bank of 6 items adapted from the urgency subscale. Responses were on a slider bar scale of 0–100, with 0 being "strongly disagree" and 100 being "strongly agree." example items include "It was hard for me to resist acting on my feelings," and "Others were shocked or worried about

the things I did." We computed a mean of all urgency items at each observation, and then computed a person level aggregated mean across all observations within each participant.

**Discriminant validity.** We selected premeditation (e.g. how much people report thinking and planning ahead) as an indicator of discriminant validity because premeditation is thought to reflect individual differences in conscientiousness that are generally uncorrelated with other measures of emotion regulation and negative emotionality (Whiteside & Lynam, 2001). We measured global self-reports of planning with 11 items from the premeditation scale of the UPPS-P (Whiteside & Lynam, 2001; Lynam, Smith, Whiteside, & Cyders, 2006). Example items include "I followed a rational, "sensible" approach to things," and "Before making up my mind, I considered all the advantages and disadvantages." As with urgency, participants rated items using a 1–4 Likert scale where 1=agree strongly to 4=disagree strongly. Internal reliability was high ($\alpha > 0.8$, $\Omega > 0.8$). We computed means for this subscale.

**Analysis Plan:** Analyses were pre-registered after data collection but before accessing the data (https://osf.io/ha58c/). Exploratory variables and analyses are identified as such. We used Zero-order correlations and stepwise regression methods to test our hypotheses. We conducted all analyses in R 4.2.2. (R Core Team, 2017), using the packages tidyverse (Wickham et al., 2019), psych (Revelle, 2015), MASS (Venables & Ripley, 2002), and betareg (Cribari-Neto & Zeileis, 2010).

We pre-registered effect size thresholds indicating strong ($r > .50$) and moderate ($r > .30$) evidence for convergent validity. We took strong evidence of convergent validity to reflect evidence of overlapping constructs, while moderate evidence of convergent validity reflected related but conceptually distinct constructs. Coping motives are said to reflect a tendency to use alcohol and cannabis in order to decrease unwanted emotions (Cooper et al., 2016; Cox & Klinger, 1988), so constructs that measured both negative emotion and reflexive/disengagement behaviors were expected to closely overlap with coping motives, and constructs which measure only one of these components were expected to be related but conceptually distinct. Because of this, constructs reflecting specific deficits in emotion regulation (reflexive/disengaged emotion regulation in the CERQ) was given an effect-size threshold of .50, while constructs reflecting broader emotion dysregulation: negative urgency (UPPS) emotional reactivity (ERS), anxiety (PROMIS), and depression (PROMIS) were given an effect-size threshold of .30. We decided that the EMA reported emotion-regulation would have a threshold of .30 as extra noise was expected in the momentary reports of emotion-regulation measure relative to the CERQ. We based these on conventional thresholds for effect sizes (Cohen, 1992; Flora, 2020). More recent research on effect sizes in personality science indicated that correlations larger than .30 were observed *among conceptually distinct* constructs only about 25% of the time (Gignac & Szodorai, 2016). These thresholds were used to determine whether associations were *sufficiently strong* to be considered strong or moderate evidence of convergent validity, in the same way a $p$ value of .05 is used as a threshold to determine the presence or absence of an effect (Lakens et al., 2018). We relied on effect sizes thresholds rather than significance because statements about convergent validity reflect assertions about the degree of similarity rather

than the presence or absence of an association (which are heavily confounded with sample size).

We used gaussian and negative binomial distributions to predict global self-report alcohol and cannabis use (respectively). For the daily models, an outcome variable of the daily frequency of use (e.g., the proportion of all days that were use days) was best fit to a logistic regression model for both alcohol and marijuana. We then tested whether the associations between coping motives and alcohol and cannabis use were robust to the inclusion of broader measures of emotion regulation. A reduced marginal effect would suggest the predictive power of coping motives on use was partially explained by the factors added in the model. We examined the marginal effects (e.g., the effects controlling for covariates) and statistical significance of coping motives on the use frequency outcome was observed, alongside overall model performance, including AIC and BIC statistics.

## Results

Descriptive statistics are presented in Table 1. At baseline, participants reported an average of 2.16 drinking days per week (*SD*=1.28) and an average of 1.57 cannabis use days per week (*SD*=2.08). In the daily outcomes for use, participants indicated drinking on 36% of study days (*SD*=.28) and using cannabis on 24% of days (*SD*=.32). On average, participants reported having coping motives for drinking “Some of the time” (M=2.10, SD=.94), and coping motives for cannabis use also nearly “Some of the time” (M=1.71, SD=.98).

### Convergent validity: correlations of coping motives with emotion regulation strategy use and negative emotionality.

Figure 1 illustrates the correlation matrix. Coping motives for drinking were only modestly associated with disengagement emotion regulation styles at the global and daily level, but not larger than our pre-registered effect size threshold ($r > .50$ & $r > .30$, respectively). Coping motives for drinking were also associated with indicators of emotion dysregulation, including global self-reports of emotion reactivity, positive and negative urgency, depressive symptoms, and anxiety symptoms, all of which were larger than our pre-registered effect size ($r > .30$). The association of alcohol coping motives with global reports of planning was small and not significant ($r=-.11$, $p=.050$). *Exploratory analysis*. We added variables from the EMA (negative and positive affect person level means and SDs, and person level mean urgency) that were not included in the pre-registration. Coping motives were moderately associated with the mean and SD of EMA reported negative affect, and with the SD of EMA reported positive affect and the mean of EMA reported negative urgency. Coping motives were weakly and negatively associated with the mean of EMA reported positive affect.

As with coping motives for alcohol use, associations of coping motives for cannabis use with disengagement emotion regulation style were statistically significant at the global level and daily level, but lower than our effect size thresholds. Similar to alcohol, coping motives for cannabis use were correlated with depressive and anxiety symptoms above our effect size threshold, while other indicators of emotion dysregulation were correlated but not beyond the threshold. The association with planning was significant but small, providing evidence of discriminant validity. *Exploratory analysis*. We added variables from the EMA (negative and

positive affect person level means and SDs, and person level mean urgency) that were not included in the pre-registration. Coping motives were moderately associated with the mean and SD of EMA reported negative affect, and the mean of EMA reported negative urgency. Coping motives were weakly and negatively associated with the mean of EMA reported positive affect but not with the SD of positive affect.

### Criterion validity: predicting alcohol and cannabis use from coping motives.

We next tested the criterion validity of coping motives reported at baseline and in daily reports of alcohol use. A 1 SD difference in coping motives predicted a .25 difference in drinking days per week reported at baseline. In the daily data, coping motives were not significantly associated with the proportion of study days that participants reported alcohol use. Adding demographic covariates was related to an improvement in model fit and an increase (0.26 – 0.33) in the association of coping motives with baseline alcohol use, but not with daily use. Table 2 illustrates how the effect changed across the inclusion of different covariates. Relative to the bivariate association, the association of coping motives with alcohol use either was unchanged or *increased* (opposite of predicted) as other indicators of convergent validity were included in the model.

In terms of cannabis use, a 1 SD difference in coping motives was associated with a 66% increase in the count of cannabis use days reported at baseline. In the daily data, coping motives were also associated with the proportion of study days of cannabis use, such that a 1 SD difference in coping motives was associated with a 110% increase in the proportion of cannabis use days. Table 3 illustrates how the effect changed across the inclusion of different covariates. As with alcohol use, the association of coping motives with alcohol use either was unchanged or *increased* (opposite of predicted) as other indicators of convergent validity were included in the model.

## Discussion

Prior research has interpreted global self-reports of coping motives of alcohol and cannabis use at face value, presuming that they both reflect the actual frequency with which people use alcohol or cannabis to regulate emotions, and that they measure individual differences in a generalized tendency towards avoidant coping (Bresin & Mekawi, 2019, 2021; Cooper, 1994). However, other research had reported that coping motives for alcohol also captured individual differences in constructs related to broader emotion dysregulation (such as negative emotionality and negative urgency), although this research had larger not interrogated the construct validity of coping motives for cannabis use. Our findings suggest that coping motives for both alcohol and cannabis use do not reflect a specific deficit in the use of effective emotion regulation strategies, but rather reflect broader challenges with emotion dysregulation.

Our findings provide three arguments against traditional interpretations. First, we found only modest evidence of convergence with other measures of avoidant emotion regulation from both global self-reports and EMA: beliefs that alcohol and cannabis were used to regulate people's emotions were weakly to moderately associated with avoidant emotion regulation styles across global self-report and in their daily lives. Second (and consistent with prior

research), coping motives were as strongly (or even more strongly) associated with other indicators of negative emotionality, such as emotion reactivity, anxiety and depressive symptoms, and negative urgency, observed both in global self-reports, and somewhat more weakly in EMA (Cooper et al., 2016). In other words, people who report coping motives for alcohol or cannabis use had a *general* tendency towards experiencing and being more strongly reactive to negative emotions, using avoidant emotion regulation strategies, and reporting more negative urgency, rather than a specific deficit in adaptive emotion regulation as hypothesized in prior work (Cooper, 1994). In line with prior research, coping motives for use predicted cannabis use in both global self-reports and EMAs, and alcohol use in global-self reports (Bresin & Mekawi, 2019, 2021), but these associations were unchanged after we accounted for measures of avoidant emotion regulation styles and negative emotionality. If coping motives had significant shared variance with avoidant emotion regulation, we would expect that their associations with alcohol or cannabis use would at least be diminished once shared variance with emotion regulation was accounted for. This was not the case. Our results add important validation evidence to the primary population where coping motives theories were developed and validated. If coping motives do not reflect actual emotion regulation deficits in college students, the population where these constructs were originally established, this raises fundamental questions about the construct validity that likely extend across populations.

In short, a more accurate description of coping motives would be that they reflect people's *beliefs* about why they use alcohol or cannabis, rather than the true causes of their behaviors. These beliefs, as reflected both in qualitative (Couture et al., 2020; Lau-Barraco et al., 2017) and quantitative research using global self-reports of coping motives, are thought to be a composite of both retrospections of typical behavior (Fleeson & Gallagher, 2009) and heuristic impressions (Conner & Barrett, 2012). EMA research suggests that global self-reports are moderately associated with people's thoughts, feelings, and behaviors in their daily lives (Baumert et al., 2017; Fleeson & Gallagher, 2009; McCabe & Fleeson, 2012), but that people are less accurate at reporting the causes of their behavior (Gawronski & Bodenhaysen, 2012; King et al., 2024; Nisbett & Wilson, 1977; Wegner & Wheatley, 1999). People are especially likely to make causal attributions for negative events (Bohner et al., 1988), and to attribute negative events (such as substance use) to situational factors such emotional states (Malle, 2006). This may explain why coping motives are both associated with negative emotionality, and why motives do not explain the within-person association of affect and alcohol or cannabis use. Future research should seek to understand how people come to develop their beliefs about their motivations for substance use across different populations and use contexts.

There are multiple limitations that constrain the generality of our conclusions. First, our EMA data used 8 to 10 days of data from college students who reported regular alcohol or cannabis use. A longer study period may increase the reliability of the individual difference measures derived from the EMAs. Moreover, a sample that was wider in age or severity of alcohol use disorder might capture effects not seen in our data. For example, some have hypothesized that affect motivated alcohol use (and thus coping motives) only emerges in people with longer histories of more severe alcohol use disorder (Baker et al., 2004; Koob & Le Moal, 2008). Moreover, our measure of daily emotion regulation does not capture

all possible strategies, and we did not account for other factors in the emotion regulation process like emotion regulation goals or appraisals of emotions (Ford & Gross, 2019; Swerdlow et al., 2022; Veilleux et al., 2015). Future research should seek to replicate the present findings across different populations, study periods, and measurement approaches to understand how our findings generalize beyond college students.. Moreover, we only focused on global self-reports of coping motives. Motives that are assessed at the daily or momentary level are known to be only modestly associated with global self-reports, and understanding the construct validity of these more state-like reports of motives is an important direction of future research.

Despite broad concerns about the need to harmonize theory with research questions (L. M. Collins, 2006; Kaurin et al., 2022; King & Dora, 2022), it has been common to presume the face validity of global self-report measures. Theories of construct validation have matured beyond the traditional multi-trait, multi-method model (Clark & Watson, 1995; Cronbach & Meehll, 1955) towards understand both how scales and tests related to one another across time scales and time frames (e.g. nomological networks) as well as the response processes that shape participants' responses to tests (Whitely, 1983). Our understanding of the construct and meaning of global self-reports of coping motives is substantially impoverished because the field has failed to seriously pursue a multi-faceted program of research that would fully and thoroughly validate the construct of coping motives by understanding what it is associated with, what it is not, and how participants interpret, understand and respond to the questionnaires we give them.

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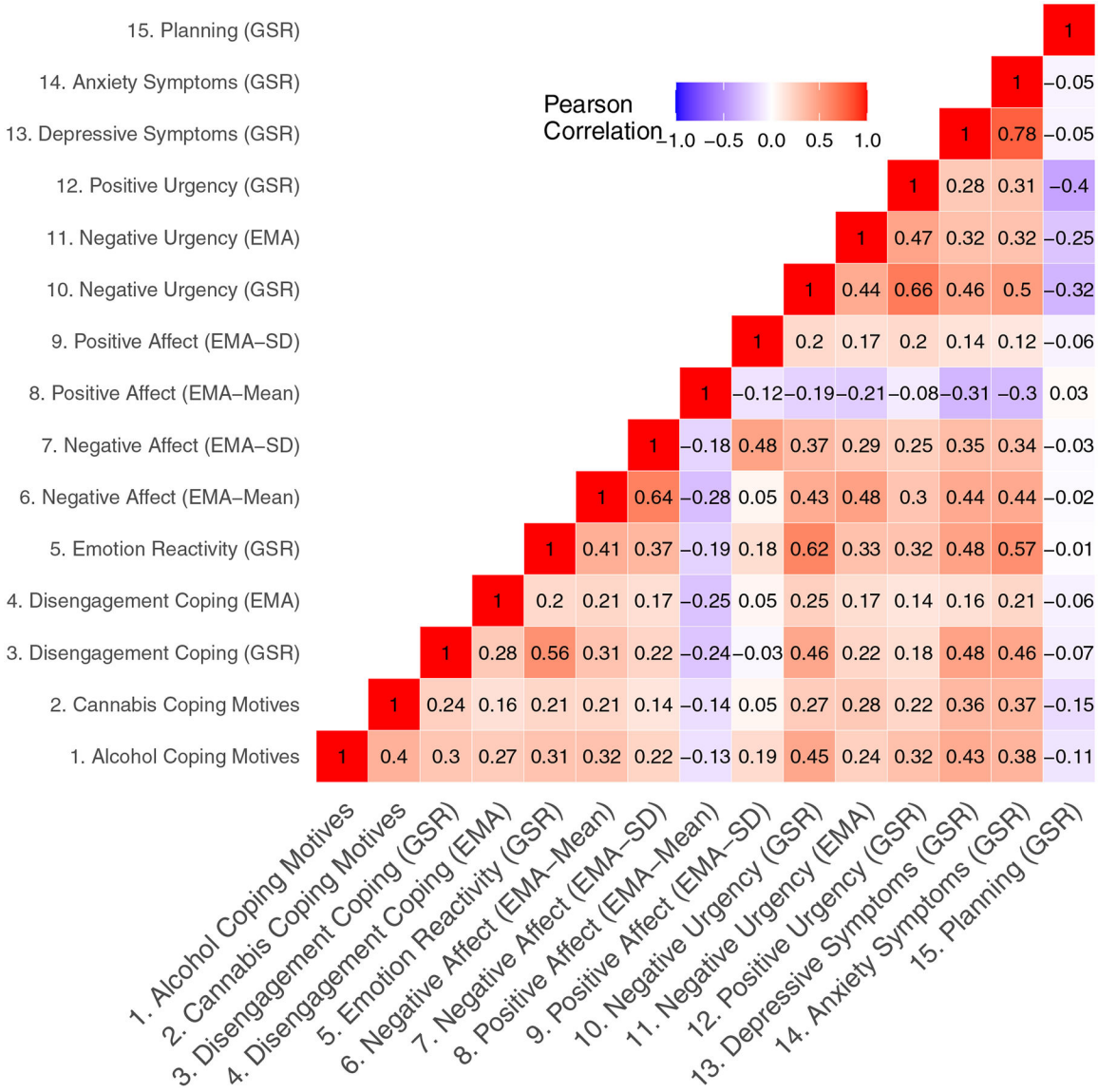


**Figure 1.**

Correlations of alcohol and cannabis coping motives with study variables. Note: GSR=global self-report. EMA= ecological momentary assessment.

**Table 1.**

Descriptive statistics.

| | M | SD | Median | Min | Max |
|---|---|---|---|---|---|
| Alcohol Coping Motives | 2.11 | 0.94 | 2.00 | 1.00 | 5.00 |
| Cannabis Coping Motives | 1.72 | 0.98 | 1.20 | 1.00 | 5.00 |
| Disengagement Coping (GSR) | 0.40 | 0.07 | 0.39 | 0.20 | 0.59 |
| Disengagement Coping (EMA) | 0.44 | 0.24 | 0.46 | 0.00 | 1.00 |
| Emotion Reactivity (GSR) | 2.46 | 0.79 | 2.37 | 1.03 | 5.00 |
| Negative Affect (EMA-Mean) | 18.85 | 11.88 | 17.08 | 0.91 | 58.99 |
| Negative Affect (EMA-SD) | 13.13 | 6.21 | 12.36 | 1.97 | 42.25 |
| Positive Affect (EMA-Mean) | 53.87 | 14.11 | 54.44 | 15.18 | 96.76 |
| Positive Affect (EMA-SD) | 16.44 | 5.41 | 15.66 | 4.12 | 36.21 |
| Negative Urgency (GSR) | 3.31 | 0.58 | 3.25 | 2.08 | 4.83 |
| Negative Urgency (EMA) | 18.10 | 14.06 | 14.16 | 0.01 | 70.96 |
| Positive Urgency (GSR) | 2.92 | 0.60 | 2.93 | 2.00 | 5.00 |
| Depressive Symptoms (GSR) | 1.93 | 0.99 | 1.62 | 1.00 | 5.00 |
| Anxiety Symptoms (GSR) | 2.37 | 0.95 | 2.25 | 1.00 | 5.00 |
| Planning (GSR) | 4.11 | 0.48 | 4.18 | 2.27 | 5.00 |
| Baseline alcohol use frequency | 2.17 | 1.28 | 2.00 | 0.00 | 7.00 |
| EMA proportion of alcohol use days | 0.35 | 0.28 | 0.30 | 0.00 | 1.00 |
| Baseline cannabis use frequency | 1.56 | 2.05 | 1.00 | 0.00 | 7.00 |
| EMA proportion of cannabis use days | 0.24 | 0.33 | 0.00 | 0.00 | 1.00 |

Note: EMA=ecological momentary assessment. GSR=global self-report.

**Table 2.**

Prediction of retrospective and daily alcohol use from global self- reports of coping motives.

| Step | Predictor Type | Coping Motives Effect | SE | *p* | AIC | BIC |
|---|---|---|---|---|---|---|
| Step 1: No covariates | Retrospective | 0.26 | 0.08 | 0.001 | 983.18 | 994.27 |
| Step 2: Demographic Covariates | Retrospective | 0.33 | 0.08 | 0.001 | 970.84 | 993.00 |
| Step 3: + Disengagement Coping Covariates | Retrospective | 0.29 | 0.09 | 0.001 | 920.98 | 950.06 |
| Step 4: + Emotionality Covariates | Retrospective | 0.30 | 0.10 | 0.002 | 899.95 | 950.74 |
| Step 1: No covariates | EMA | 0.10 | 0.13 | 0.443 | 330.63 | 337.92 |
| Step 2: Demographic Covariates | EMA | 0.17 | 0.14 | 0.229 | 329.19 | 347.40 |
| Step 3: + Disengagement Coping Covariates | EMA | 0.19 | 0.15 | 0.206 | 328.08 | 353.50 |
| Step 4: + Emotionality Covariates | EMA | 0.21 | 0.17 | 0.22 | 328.46 | 375.57 |

Note: EMA=ecological momentary assessment.

**Table 3.**

Prediction of retrospective and daily cannabis use from global self reports of coping motives.

| Step | Type | Coping Motives Effect | SE | *p* | AIC | BIC |
|---|---|---|---|---|---|---|
| Step 1: No covariates | Retrospective | 0.53 | 0.07 | <0.001 | 961.46 | 972.51 |
| Step 2: Demographic Covariates | Retrospective | 0.57 | 0.07 | <0.001 | 957.16 | 979.24 |
| Step 3: + Disengagement Coping Covariates | Retrospective | 0.59 | 0.08 | <0.001 | 903.43 | 932.39 |
| Step 4: + Emotionality Covariates | Retrospective | 0.58 | 0.08 | <0.001 | 909.67 | 960.25 |
| Step 1: No covariates | EMA | 0.75 | 0.15 | <0.001 | 240.07 | 247.29 |
| Step 2: Demographic Covariates | EMA | 0.82 | 0.16 | <0.001 | 233.42 | 251.45 |
| Step 3: + Disengagement Coping Covariates | EMA | 0.86 | 0.17 | <0.001 | 230.96 | 256.13 |
| Step 4: + Emotionality Covariates | Daily Assessments | 0.87 | 0.18 | <0.001 | 239.07 | 285.75 |

Note: EMA=ecological momentary assessment.