UPPS-P facets of impulsivity and alcohol use patterns in college and noncollege emerging adults

UPPS-P Facets of Impulsivity and Alcohol Use Patterns in College and Non-College Emerging Adults

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Abstract

Background: Alcohol use and related problems reach a peak in emerging adulthood. Impulsivity is a multifaceted construct known to be involved in emerging adult alcohol use. Few studies have examined impulsivity and alcohol use across both college attending and non-college attending emerging adults. *Objectives:* To clarify the multifaceted nature of impulsivity and its links to emerging adult alcohol use, this study investigated whether the five distinct facets of the UPPS-P model of impulsivity were predictive of three different behavioural outcomes: alcohol intake, alcohol related problems and binge drinking. In addition, the moderating effects of college attendance were tested. *Methods:* A community sample comprising 273 Australian college and non-college attendees (58.6% women; 41.4% men) aged between 18 and 30 years (M_{age} = 23.71, *SD* = 2.81). *Results:* Multiple regression analyses demonstrated that lack of premeditation predicted alcohol intake and binge drinking behavior, whilst positive and negative urgency predicted alcohol related problems. Moderation analyses revealed that the effects of impulsivity on alcohol patterns were consistent for college and non-college attending emerging adults. *Conclusion:* These findings highlight the importance of impulsive urgency (both positive and negative) in emerging adult problematic alcohol use, and support the generalizability of college samples to broader emerging adult populations. Emerging adults may use alcohol to avoid negative mood states and further enhance positive mood states. Improved emotional regulation may help both college and non-college emerging adults reduce their alcohol use.

Keywords: alcohol, alcohol use, binge drinking, emerging adults, impulsivity, college students

Impulsivity facets and alcohol use

Excessive alcohol use, binge drinking, and associated adverse consequences related to alcohol consumption are highly prevalent in emerging adulthood (Arnett, 2000; Chen, Dufour, & Yi, 2004; Karagulle et al., 2010). A growing body of research, both cross-sectional and longitudinal, has demonstrated that alcohol use (e.g. Gates, Corbin & Fromme, 2016; Schulenberg & Maggs, 2002), along with problematic use and binge drinking behaviour (e.g., Mulye et al., 2009, Windle & Zucker, 2010), reach a development peak during the emerging adult years. As evidence of this, large-scale national surveys have shown that problematic drinking patterns peak during emerging adulthood across dependence, frequency, drinking to intoxication, and binge drinking behaviours (Windle & Zucker, 2010). In addition, the 2015 National Survey on Drug Use and Health demonstrated that the majority of emerging adults (58.3% aged 18-25 and 55.6% aged 26+) currently use alcohol, that nearly 40% reported binge drinking, and that 10.9% had engaged in heavy alcohol use in the past month (SAMHSA, 2016).

Given the high prevalence of problematic alcohol use patterns, exposure to alcohol is considered to be a normal part of identity negotiation during the emerging adult period (Maggs & Schulenberg, 2005). In Australia, emerging adults have been found to have the highest rate of binge drinking (8 standard drinks for males, 6 standard drinks for females on one occasion) of any age group, resulting in an increased susceptibility to alcohol-related injury or harm (Australian Bureau of Statistics, 2015). Whilst research on binge-drinking patterns have yielded interesting findings, there is a need to further consider other alcohol use outcomes such as overall level of alcohol intake, and the experience of negative consequences associated with alcohol use, especially in relation to impulsivity (Cyders, Flory, Rainer & Smith, 2009).

Impulsivity facets and alcohol use

The personality trait of impulsivity has been consistently implicated in problematic alcohol use (Dick et al., 2010; Dunne, Freedlander, Coleman & Katz, 2013; Littlefield & Sher, 2010; Shin, Hong & Jeon, 2012). Impulsivity is commonly defined as a predisposition toward rapid, unplanned reactions to internal or external stimuli, without regard to the negative consequences of these reactions to the individuals, or to others (Moeller, Barratt, Dougherty, Schmitz, & Swann, 2001). Whilst such a definition clarifies the general concept, it fails to capture the multi-dimensional nature of the construct (Cyders et al., 2009; Gullo et al., 2011). A recent meta-analysis of 96 studies strongly supported the differentiality of impulsivity facets in relation to alcohol use (Coskunpinar, Dir & Cyders, 2013).The issue is further complicated by the various conceptualisations of impulsivity, and the lack of consensus regarding how many facets are needed to fully capture the construct (Curcio & George, 2011; MacKillop et al., 2016; Whiteside & Lynam, 2009).

In an attempt to overcome such limitations, Whiteside and Lynam (2001) factor analyzed multiple self-report measures of impulsivity using McCrae and Costa's (1990) Five Factor Model (FFM) as a conceptual framework. Four distinct facets of impulsivity were identified, and when combined, formed the UPPS Impulsive Behavior Scale: Urgency, (lack of) Premeditation, (lack of) Perseverance, and Sensation Seeking. The concepts of sensation seeking (tendency to seek out thrill-seeking behaviours), lack of premeditation (disinhibition and lack of planning), and lack of perseverance (poor concentration and boredom proneness) are reflective of traditional conceptualisations of impulsivity. The addition of urgency by Whiteside and Lynam (2001), later separated into positive and negative urgency by Cyders et al., (2007), was reflective of a need to better capture affective influences on behaviour,

with the two facets accounting for impulsiveness due to intense positive and negative emotional experiences (Smith & Cyders, 2016).

Research suggests that different facets of impulsivity may uniquely predict different aspects of alcohol use (Curcio & George, 2011; Cyders et al., 2007; Henges & Marczinski, 2012; Shin et al., 2012). For example, past research has found sensation seeking to be associated with alcohol use frequency and intake (e.g., Curcio & George, 2011; Cyders et al., 2007; Fischer & Smith, 2008; Whiteside & Lynam, 2009) and binge drinking behaviour (Sargent, Tanski, Stoolmiller & Hanewinkel, 2010; Shin et al., 2012). However, there are mixed findings regarding its relationship to alcohol related problems (Curcio & George, 2011; Cyders et al., 2007; Shin et al., 2012). There are also mixed findings in relation to lack of perserverance, with most research reporting no link (Cyders et al.,2009; Han & Mason, 2011, Magid & Colder, 2007, Xiao et al., 2009), while a meta-analysis revealed a link to alcohol intake but not alcohol related problems (Coskunpinar, Dir & Cyders, 2013). Lack of premeditation reflects the disinhibition aspect of impulsivity, and has been found to be linked to alcohol use in a range of studies (Colder & Stice, 1998; Magid & Colder, 2007; Smith et al. 2007; Shin et al., 2012; Teese & Bradley, 2008).

Whilst an emerging area of research, studies using positive and negative urgency as predictors of general alcohol use have shown that when used as a predictor of alcohol-related problems, both urgency variables predicted increased rates of alcohol related problems in samples of emerging adults (Cyders et al., 2009; Cyders & Smith, 2007). In contrast, Dir, Karyadi and Cyders (2013) found Negative Urgency to be the only significant predictor of problematic alcohol use. The measurement of distinct traits of impulsivity allows for a more detailed explanation of different types of behaviours, a benefit not available to users of broad impulsivity scales.

The majority of research on impulsivity and emerging adult alcohol use has focused on college samples. There is a need to determine if emerging adult impulsive drinking is specific to the dynamics of college settings, or is comparable across other emerging adult populations. Research has suggested that college students drink more alcohol than their non-college peers (Barnes, Welte, Hoffman, & Tidwell, 2010; Quinn & Fromme; Patrick et al., 2016). However, it is still unclear as to what accounts for this greater propensity for college students to drink alcohol. Quinn and Fromme (2010) suggest that college facilitates closer proximity to peers, and as such, age related drinking norms become more salient. Others have suggested that non-college students are more likely to experience significant life events, and "mature out" of drinking faster (Lee, Chassin, Villalta, 2013; Winick, 1962). Winick (1962) suggested that young people who transition into adult social roles, such as marriage, having children, or full time work, mature more quickly and show more rapid declines in problematic behavior than their peers. It may be that going to college delays the maturing process, and increases the likelihood of problematic drinking (Littlefield, Sher & Wood, 2009).

It has also been suggested that college/ non-college differences in alcohol use are underestimated in the literature, as college samples tend to be higher in self-regulation, and lower in impulsivity (Quinn & Fromme, 2011). This suggests that other factors such as peer pressure are higher and more salient in college samples, and hence, overwhelm personality factors such as lower impulsivity. It may be possible then that college attendance moderates the relationship between impulsivity facets and alcohol use patterns.

The Current Study

The current study was conducted to further understand the unique and shared contributions of the UPPS-P facets of impulsivity in the prediction of three different alcohol outcomes; average weekly alcohol intake, binge drinking and alcohol related problems, in Australian emerging adults. Relatively few Australian studies (exceptions include Curcio & George, 2011; Gullo et al., 2011) have simultaneously examined different facets of impulsivity in relation to multiple alcohol use outcomes. Furthermore, the majority of past studies on emerging adulthood have recruited only college student samples (Arnett, 2001; White, Labouvie & Papadaratsakis, 2005), neglecting what Arnett (2001) referred to as the "forgotten half" (non-college students). The current study aimed to see whether impulsivity effects alcohol use differently for college and non-college emerging adults.

It was hypothesised that lack of perseverance would predict average alcohol intake only. It was further hypothesised that sensation seeking and lack of premeditation would predict average alcohol intake and binge drinking behaviour, and that positive and negative urgency would predict alcohol-related problems. It was also hypothesized that attendance at college would moderate the above relationships, where being at college would strengthen the relationships.

Method

Participants

In order to maximize the chances of obtaining a representative sample of emerging adults, a three-stage approach to recruitment was applied. The first stage advertised the study via university notice-boards, email, and social media, with respondents further encouraged to forward the survey link to other potential participants. Stage two involved distribution of hard-copy surveys via snowball sampling, and stage three involved recruitment of undergraduate students in a

research participation pool, the latter receiving course credit for their participation. The three methods of data collection contributed 78%, 16%, and 6% of the sample respectively. Of the initial sample of 309, 20 participants were outside the age range, 14 were not Australian citizens or residents, and two had incomplete questionnaires. The final sample comprised 273 Australian emerging adults aged 18 to 30 years, of which 160 were female (M_{age} = 23.53, SD_{age} = 2.69), and 113 male (M_{age} = 23.96, SD_{age} = 2.98). Approximately half of the sample was currently studying, with 35.9% full-time university students, 7.0% part-time university students, and 2.2% studying at TAFE/Skills colleges. The majority (68.5%) of the sample were employed in some way, with 43.2% employed full-time, 13.9% casually employed, and 11.4% part-time employed. Only 2.9% of the sample had dependent children. College students were recruited from Federation University participant pool and student notice boards. Non-college participants were recruited through a social media advertisement. Missing cases were not replaced.

Table 1 presents a comparison of college and non-college students on key demographics. The mean age of college students was 22.6 (S = 2.5) and for non-college 24.5 (2.8). Chi-Square tests of independence revealed that non-college students and college students were proportionally different on education attainment, and that non-college students were more likely to be employed on a full-time basis, than were college students.

Table 1 about here

Materials and procedure

UPPS-P Impulsive Behavior Scale. Impulsivity was assessed using the UPPS-P Impulsive Behavior Scale (Lynam et al., 2006; Whiteside & Lynam, 2001), a 59 item

self-report measure assessing five domains of impulsivity. The scales are Negative Urgency (12 items), (lack of) Premeditation (11 items), (lack of) Perseverance (10 items), Sensation Seeking (12 items), and Positive Urgency (14 items). Sample items from each scale include, "When I am upset I often act without thinking" (Negative Urgency), "I am a cautious person" (Lack of Premeditation), "Once I get going on something, I hate to stop" (Lack of Perseverance), "I would enjoy sky-diving" (Sensation Seeking) and "I tend to lose control when I am in a great mood" (Positive Urgency). Cronbach's alpha for the five scales in this study ranged from .81 to .93.

Alcohol Use Questionnaire. A revised version of the Alcohol Use Questionnaire (AUQ; Mehrabian & Russell, 1978; Townshend & Duka, 2005) was used to assess alcohol consumption and binge drinking behaviour. The measure consists of 15 items with respondents asked to consider their drinking patterns over the past year based on number of drinks per week, speed of drinking (number of drinks per hour), number of times being drunk in the last year, and percentage of times getting drunk when going out drinking (Townshend & Duka, 2005). Sample items from the AUQ include, "On how many days per week did you drink wine (at least a small glass)?, "On those days you did drink wine, about how many glasses did you drink?" and "How many glasses of wine did you have in a week, in total?". The scale was used to calculate Intake (reflecting average weekly alcohol intake) and Binge scores (reflecting binge drinking behaviour). As noted by Townshend and Duka (2005), due to the formula-based calculation of the scores, Cronbach's alpha is not an appropriate tool for assessing measurement reliability.

Rutgers Alcohol Problem Index. Frequency of alcohol related problems in the past year was assessed using the Rutgers Alcohol Problem Index (RAPI) (White & Labouvie, 1989). The measure comprises 18 items covering a range of problems

associated with alcohol use, varying from social to health consequences associated with alcohol use. Participants were asked how often they had experienced each event during the past year. Sample items include, “Wanted to stop drinking but couldn't“ and “Missed out on other things because you spent too much money on alcohol”. Results were rated on a 4-point Likert scale ranging from 0 (None) to 3 (More than 5 times). Consistent with previous studies (e.g., White et al., 2005), total scores were calculated by summing item responses. In the present study, the Cronbach’s alpha for the RAPI was .87.

Procedure

Ethical approval was obtained prior to commencing data collection. Participants had the option of completing the anonymous and confidential questionnaires online, or in hard copy. The majority of respondents (84%) completed the questionnaire through the secure online survey, with the remaining 16% completing hard copy versions of the questionnaire.

Design

Hierarchical regression analyses were conducted for each of the three alcohol related outcome variables using age, gender, and the five impulsivity facets as predictors. Power analysis revealed a sample requirement of 150 for a small effect size. Age and gender were entered at step 1 then the impulsivity facets were added at step 2. Simple moderation analyses were also conducted using PROCESS for SPSS (Hayes, 2013). The model for moderation analysis was model 1 in PROCESS. These analyses assessed whether the effects of significant predictors on alcohol variables were moderated by whether emerging adults attended college. For the moderated model, At College (coded: 1 = yes, 2 = no) was specified to influence the impulsivity/ alcohol relationships. Only significant and near significant predictors of the alcohol variables

were selected for moderation analysis. The number of bootstrap samples for bias corrected bootstrap confidence intervals was 10,000, and a bootstrapped 95 confidence interval (CI) was used to infer significance. Significance is supported if the confidence interval for the interaction term does not include zero (Hayes, 2013).

Results

College and non-college students were compared across the alcohol and impulsivity variables (Table 2). Independent samples t-tests showed no significant differences between the two groups. Preliminary correlation analyses were conducted to investigate the relationships between the variables of interest and can be seen in Table 3. College and non-college attending emerging adults were compared using t-tests. No significant differences were found on any of the impulsivity or alcohol related variables.

Insert Tables 2 and 3 here

As can be seen, age and gender were not significantly associated with any of the alcohol-related variables. Table 3 also demonstrates that all five facets of impulsivity were significantly correlated with each of the alcohol-related variables (intake, binge score, and alcohol-related problems). The results of the three Hierarchical regressions and the moderations analyses are below.

Alcohol Intake

In relation to alcohol intake, the final regression model demonstrated that age, gender, and the facets of impulsivity significantly predicted alcohol intake, F (7,257) = 8.48, p < .001. Age and gender did not significantly predict at step 1.

Insert Table 4 here

As can be seen in Table 4, age, gender and the five facets of impulsivity facets accounted for 17% of the variance in alcohol intake. When the five impulsivity facets were entered together into the regression equation, only lack of premeditation ($p <$ .05) made a significant unique contribution to the regression model. These findings lend partial support to the predictions relating to average weekly alcohol intake.

Using PROCESS software a moderation analysis revealed no moderation effect of At College on the lack of premeditation/ alcohol intake relationship, as zero was in the bootstrapped 95% CI (-3.7, 22.32). This suggests that the effect of lack of premeditation on alcohol intake was not dependent on whether the emerging adult was attending college.

Binge Drinking

In relation to binge drinking behaviour, the final regression model demonstrated that age, gender and the facets of impulsivity significantly predicted binge drinking behaviour, F (7,249) = 7.42, $p < .001$. Age and gender did not significantly predict at step 1.

Insert Table 5 here

As shown in Table 5, the results of the regression indicated that age, gender and the five impulsivity facets accounted for 17% of the variance in binge drinking behaviour. When entered together into the regression equation, lack of premeditation and negative urgency were the only two variables to make significant unique contributions to the regression model. These results lend partial support to the hypothesis relating to binge drinking behaviour.

Using PROCESS software a moderation analysis revealed no moderation effect of At College on the lack of premeditation/ binge drinking relationship, as zero was in the bootstrapped confidence interval (-14.9, 21.14). This result was repeated for lack of perserverance (-19.58, 11.1), and negative urgency (-5.9, 18.33). This suggests that the effect of the impulsivity variables on binge drinking was not dependent on whether the emerging adult was attending college.

Alcohol-Related Problems

In relation to alcohol-related problems, the regression analysis demonstrated that age, gender, and the facets of impulsivity significantly predicted alcohol-related problems, F (7,259) = 15.25, $p < .001$. Age and gender did not significantly predict at step 1.

Insert Table 6 here

As illustrated in Table 6, the results of the regression indicated that age, gender, and the five impulsivity facets explained 29% of the variance in alcohol related problems. When all five facets were entered together into the regression equation, only negative and positive urgency made significant unique contributions to the regression model ($p < .01$, and $p < .001$ respectively). These findings lend partial support to the hypothesis regarding alcohol related problems.

Using PROCESS software a moderation analysis revealed no moderation effect of At College on the positive urgency/ problem drinking relationship, or the negative urgency problem drinking relationship, as zero was in the bootstrapped confidence intervals respectively (-1.7, 5.83; -1.96, 4.6). This suggests that the effect of the urgency variables on problem drinking was not dependent on whether the emerging adult was attending college.

Discussion

Results of this Australian study supported the notion that the impulsivity facets relate differently to alcohol use, with urgency (positive and negative) predicting problematic use, and premeditation predicting both weekly alcohol intake and binge drinking. Negative urgency was also shown to be predictive of binge drinking. As a whole, the impulsivity facets were better predictors of problematic alcohol use (27%), than drinking quantity (17%) and binge drinking (15%). As problematic use reflects the experience of negative consequences related to drinking, it would appear that impulsivity, and in particular impulsive urgency, is of theoretical and practical importance. As one of the first studies to test for the moderating effects of college attendance, we concluded that the predictive effects of impulsivity are independent of college attendance, supporting the generalizability of university samples to broader emerging adult populations. We did not find differences between college and non-college emerging adults in regards to patterns of alcohol use, and both groups appeared to arrive at alcohol use by the same personality mechanisms (Slutske et al., 2004).

College Attendance

The current study is novel in that comparisons were made regarding the impact of impulsivity on college and non-college emerging adults. Direct comparisons demonstrated that both groups differed on expected demographic criteria (income and employment status), yet were similar with regards to gender, age, and general demographic indicators, indicating both were equally representative samples of emerging adults. As such, there was a greater level of confidence that differences in how impulsivity influenced drinking behaviour across the two samples could be attributed to college/non-college settings. Unexpectedly, attending college did not

strengthen the relationships between impulsivity and emerging adult drinking patterns. These findings indicate that the mechanisms by which impulsivity influences drinking behaviour were similar regardless of college attendance.

The authors caution that further investigation and comparisons of these samples is warranted, as there is still much to learn about the mechanisms through which college attendance/non-attendance interact with alcohol use, both short and long term. For example, the current study found that non-college students were more likely to be working full time, yet no significant differences were found between college and non-college drinking patterns. Such a finding could indicate that full time employment as a life event does not result in changes in impulsive drinking (Lee, Chassin, Villalta, 2013; Winick, 1962). Despite such a finding, there is evidence that the same behaviour (binge drinking) may be more problematic for a full time worker (e.g. missing a day at work), than a college student (e.g. missing a lecture) (Quinn & Fromme, 2011). In addition, while college attendance may coincide with a short-term spike in levels of alcohol consumption, it may also be associated with a greater likelihood of meaningful long-term alcohol use reductions (Patrick et al., 2016). Further, whilst the current study did not find any main effect influence of gender, future research should further explore the influence of sex differences, given evidence that some UPPS-P impulsive traits (e.g., sensation seeking) are higher in males, whilst females tend to demonstrate greater levels of negative urgency (Cyders, 2013; Quinn & Fromme, 2010). The findings of the current study suggest that similar to college students, non-college emerging adults share a potential emotional pathway to alcohol problems through impulsive urgency. To this end, strategies to improve emotional self-regulation may be beneficial for both college and non-college emerging adults.

It was expected that the greater exposure to and influence of peer drinking norms in a college setting would contribute to the activation of impulsive drinking (Quinn & Fromme, 2011). It may be that the social forces that influence drinking in college operate separately from impulsivity. Another explanation may relate to differences in college life between the United States and Australia. Australian college life generally involves less dormitory living, and fraternity or sorority membership than American college, potentially resulting in less exposure to elevated peer social drinking norms (Kavanagh, Ziino, Mesagno, 2016). Differences in legal drinking ages between Australia and the United States may also mean that drinking norms are more generalized across the population, and less confined to college settings. College and non-college students did not differ on any of the alcohol intake variables in the current study (Barnes et al., 2010; Quinn & Fromme; Patrick et al., 2016). This might be partly explained by the similarity in impulsivity between the two groups, and by the method of measuring alcohol intake (AUQ). The similarity in drinking patterns between college and non-college emerging adults would be consistent with Lau-Barraco et al.'s (2016) findings, where social influences were just as salient in influencing alcohol use for non-college emerging adults, than they were for college students.

General Findings: Interpretation of Lack of Perseverance

When alongside the other facets, lack of perseverance failed to contribute significantly to the variance in alcohol intake (contrary to expectations), binge drinking (as expected, it was approaching significance), or alcohol-related problems (as expected). While a meta-analysis found lack of perseverance to be related to drinking quantity (Coskunpinar et al., 2013), it may be that this effect is diminished when observed alongside the other impulsivity facets. These findings were consistent

with Han and Mason (2011) and Magid and Colder (2007), and indicate that excessive alcohol consumption and binge drinking are likely motivated by intoxication and other factors, for emerging adults.

Interpretation of Lack of Premeditation Results

As expected, lack of premeditation predicted alcohol intake and binge drinking behaviour, findings that are consistent with the recent findings of Shin et al. (2012). Individuals scoring high on lack of premeditation reported higher alcohol intake and engaged more frequently in binge drinking behavior. Emerging adults may fail to consider the undesirable effects of heavy drinking which has been shown to typically help regulate consumption (Magid & Colder, 2007). The lack of premeditation reflects mostly cognitive rather than behavioral impulsivity, and suggests that consideration of undesirable effects of heavy drinking serves an important cognitive regulatory function.

Interpretation of Sensation Seeking Results

Contrary to the proposed hypotheses, sensation seeking was unrelated to intake, binge drinking, and alcohol-related problems. The results also showed that sensation seeking was not predictive of alcohol related problems. Although some studies (e.g., Fischer & Smith, 2004; Grau & Ortet, 1999) have found that sensation seeking predicts alcohol problems, those studies did not fully investigate the multi-dimensional aspects of impulsivity (by only assessing sensation seeking). This may have resulted in attributing variance inappropriately to this variable, when other facets of impulsivity may have more accurately explained the variance.

The lack of predictive utility of sensation seeking in accounting for problematic alcohol use suggests that sensation seeking is structurally and predictively distinct from the emotion-based traits, positive and negative urgency. Past research has shown that while sensation seeking increases involvement in risky and thrill-seeking behaviors (indicated by approaching significance for binge drinking), it is less predictive of involvement in problematic behavior. In contrast, urgency traits demonstrate greater predictive utility in accounting for problematic behaviors (Cyders & Smith, 2007; Fischer & Smith, 2004; Gullo, Loxton & Dawe, 2014; Smith et al., 2007). Thus, the two traits may require different interventions (Stephenson, 2003).

Positive and Negative Urgency Results

Consistent with past findings (Cyders & Smith, 2007; Cyders et al., 2009; Shin et al., 2012), positive and negative urgency significantly predicted alcohol related problems. These findings indicate that those who respond to positive and negative emotions in an impulsive manner, are more prone to experience problematic alcohol use. Negative urgency was also predictive of binge drinking. The latter finding may be indicative of impulsive binge drinking as a coping mechanism when experiencing intense negative emotions.

These findings are consistent with the theoretical reasoning that urgency will predict alcohol related problems, but not alcohol use. By definition, individuals elevated on negative urgency are highly reactive to negative affect, with attempts to suppress these negative emotions depleting the individual's self-regulatory capacity (Usta & Häubl, 2011). This reactivity then limits their ability to exhibit self-control. Studies have shown that even *low* levels of alcohol use have a disinhibitory effect on

behavior, which may exacerbate already depleted self-regulation resources (Steele & Josephs, 1990). As a result, individuals elevated on negative urgency may experience high levels of alcohol-related problems even when alcohol consumption is low. Similar to Billieux et al. (2010), it appears that emerging adults with high urgency may use drinking as a means of regulating affective states, where drinking may distract from negative affect, and enhance positive affect.

Limitations of the Current Study

The study was limited in making causal inferences, as it was cross-sectional. Townshend and Duka (2005) found that in answering questions on the AUQ, low drinkers tended to overestimate their self-reported alcohol intake, and high drinkers tended to underestimate their self-reported alcohol intake. Future studies would therefore benefit from objective validation of self-reported alcohol intake, with biological assays for instance, to increase reliability.

Conclusions

The current study examined the UPPS-P impulsivity traits simultaneously, hence, reducing the potential for variance being wrongly attributed to different facets. The present study also focused on emerging adults who are at greatest risk of alcohol related problems, and included the "forgotten half" (non-college students) (Arnett, 2001). It was found that different impulsivity traits were associated with different alcohol use constructs. More specifically, it was found that positive and negative urgency significantly predicted alcohol related problems; lack of premeditation and sensation seeking significantly predicted alcohol intake; and lack of premeditation predicted binge drinking behaviour. College attendance did not moderate these effects.

The findings highlight the unique role that each UPPS-P facet plays in predicting different behavioural outcomes irrespective of college attendance. The findings will provide valuable information and inform intervention programs to target more specific impulsivity traits. For example, distress tolerance skills maybe very helpful for emerging adults high in negative urgency to control problematic behaviours (Cyders & Smith, 2008). These distress tolerance skills teach individuals to respond adaptively to the experience of extreme emotional states. As positive urgency was found to be equally problematic, there is a need to develop interventions to help young people avoid problematic alcohol use when experiencing positive emotional states.

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Table 1. *Participant Demographics by College Attendance and Chi-Square Tests of Independence Significance.*

Sex	College	Non-college	Sig
Female	62.4%	55.8%	.32
Male	37.6%	44.2%	
Dependents			
Has Child/ Children	4.3%	1.9%	.29
No Children	95.7%	98.1%	
Country of Birth			
Australia	85.5%	75%	.12
Other	14.5%	25%	
Fulltime Employed			
Yes	3.4%	73.1%	.001*
No	96.6%	26.9%	
Highest Education Level			
Year 10 or less	1.7%	1.9%	.001*
Year 11	.9%	1.9%	
Year 12	42.7%	7.7%	
Tafe/ Trade	5.1%	11.5%	
Undergraduate	41%	66%	
Postgraduate	7.7%	8.3%	
Other	.9%	2.6%	

Note. * sig at .01 level

Table 2. *Impulsivity and Alcohol, Means, Standard Deviations, and comparisons, by College Attendance*

Variable	College	Non-college	Sig
Positive Urgency	1.8 (.54)	1.88 (.56)	.90
Negative Urgency	2.28 (.56)	2.29 (.52)	.58
Premeditation (lack of)	1.87 (.45)	1.95 (.45)	.94
Perseverance (lack of)	2.06 (.44)	2.04 (.42)	.84
Sensation Seeking	2.65 (.59)	2.6 7(.56)	.55
Alcohol Units per week	6.4 (8.6)	6.58 (9.2)	.99
AUQ Binge Drinking	16.67 (23.1)	16.87 (22.2)	.36
Alcohol Problems	4.76 (6.45)	4.96 (6.25)	.79

Table 3.

Descriptive Statistics, and Correlations between Study Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	-	-	-									
2. Age	23.71	2.81	-.08									
3. Lack of Perseverance	2.05	.43	.09	-.18*								
4. Lack of Premeditation	1.91	.45	.02	-.04	.37**							
5. Negative Urgency	2.23	.54	.23**	-.01	.34**	.40**						
6. Sensation Seeking	2.66	.57	-.28**	.01	.05	.25**	.25**					
7. Positive Urgency	1.85	.56	.00	-.06	.27**	.41**	.67**	.41**				
8. Alcohol Intake	6.50	8.90	-.04	-.06	.21**	.32**	.30**	.25**	.34**			
9. Binge Drinking	16.79	22.52	-.02	-.07	.20**	.32**	.27**	.23**	.25**	.72**		
10. Alcohol-related Problems	4.88	6.34	-.01	-.00	.24**	.28**	.44**	.26**	.47**	.66**	.64**	

Note: * Indicates correlation was significant at P<.01, **Indicates correlation was significant at p<.001

Table 4

Summary of Regression Analysis predicting Alcohol Intake

Variable	Alcohol Intake				
	B	SE B	β	t	p
Step 1					
Constant	12.02	5.08			
Age	-.17	.19	-.05	-.86	.39
Gender	-1.05	1.10	-.06	-.95	.34
Step 2					
Constant	-12.9	6.2			
Age	-.04	.18	-.01	-.22	.82
Gender	-1.20	1.11	-.07	-1.1	.26
Lack of Perseverance	1.97	1.28	.10	1.53	.13
Lack of Premeditation	3.19	1.29	.16	2.72	.01*
Negative Urgency	1.79	1.35	.11	1.32	.19
Sensation Seeking	1.44	.99	.10	1.45	.15
Positive Urgency	2.30	1.30	.15	1.79	.08

Note. Step 1 R^2 = .006, Adjusted R^2=*-.002 (p=.47) Step 2* R^2 = .19; Adjusted R^2 = .17 (p < .001).

* p < .05

Table 5

Summary of Regression Analysis predicting Binge Drinking Behaviour

Variable	Binge Drinking Behaviour				
	B	SE B	β	t	p
Step 1					
Constant	29.64	12.80			
Age	-.42	.49	.05	-.85	.39
Gender	-2.17	2.74	-.05	-.79	.43
Step 2					
Constant	-33.80	15.83			
Age	-.11	.46	-.01	-.24	.81
Gender	-2.9	2.83	-.07	-1.02	.31
Lack of Perseverance	5.8	3.22	.12	1.79	.07
Lack of Premeditation	9.07	3.21	.19	2.82	.01**
Negative Urgency	7.41	3.38	.19	2.2	.03*
Sensation Seeking	4.95	2.53	.13	1.95	.05
Positive Urgency	-.80	3.30	-.02	-.25	.80

Note. Step 1 R^2 = .005; Adjusted R^2 = -.003 (p =.54) *Step 2* R^2 = .17; Adjusted R^2 = .15 (p < .001)

**p < .01, *p < .05.

Table 6

Summary of Regression Analysis predicting Alcohol Related Problems

Variable	Alcohol Related Problems				
	B	SE B	β	t	p
Step 1					
Constant	6.12	3.62			
Age	-.03	.14	-.01	-.20	.83
Gender	-.4	.78	-.03	-.51	.60
Step 2					
Constant	-13.34	4.13			
Age	.07	.12	.03	.59	.56
Gender	-.9	.74	-.07	-1.21	.22
Lack of Perseverance	1.59	.86	.11	1.86	.06
Lack of Premeditation	.48	.85	.03	.56	.57
Negative Urgency	2.63	.89	.23	2.96	.003**
Sensation Seeking	.87	.66	.08	1.3	.19
Positive Urgency	2.95	.85	.26	3.45	.001**

Note. Step 1 R^2 = .001; Adjusted R^2 = -.006 (p =.87) *Step 2* R^2 = .29; Adjusted R^2 = .27 (p < .001)

** $p < .01$