

Personality, Alcohol Use, and Pregaming Behaviour Among Undergraduates

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Acknowledgments

I wish to thank (in alphabetical order) Ms. Alexandra Kruse, Ms. Nicole Poirier, and Ms. Sarah Sinclair from the SURG lab for their guidance, support, and feedback throughout the year. I also wish to thank Ms. Suzanne Chomycz for her co-supervision and for providing feedback on early drafts of this thesis and data collection. I wish to thank my colleagues Ms. Kim Ongaro and Ms. Rebecca Scott for their moral support, encouragement, and friendship throughout the year. My parents deserve a special mention for their unconditional support throughout my journey as an undergraduate and especially throughout this final year; thank you so much. Finally, a tremendous thank you to Dr. Chris Mushquash for taking me on as a student, and especially for his mentorship and wisdom throughout this entire process.

Abstract

The current study examines four personality traits, impulsivity, sensation seeking, hopelessness, and anxiety sensitivity, as predictive factors of pregaming as well as the relationship with heavy episodic drinking and alcohol related consequences. It was hypothesized that sensation seeking, impulsivity, hopelessness, and anxiety sensitivity will be related to higher levels of pregaming, and that pregaming would be associated with higher levels of heavy episodic drinking and increased alcohol related consequences. The sample consisted of 196 undergraduate students (84.7% female), with an average age of 22. Impulsivity, sensation seeking, hopelessness, and anxiety sensitivity were not found to be predictors of pregaming behaviour. Pregaming was found to predict higher levels of heavy episodic drinking, as well as increased alcohol related consequences. The results from this study have the potential to inform intervention strategies tailored to drinking behaviour at the pregaming level in order to reduce heavy episodic drinking and alcohol related consequences.

Keywords: pregaming, heavy episodic drinking, personality, consequences

Personality, Alcohol Use, and Pregaming Behaviour Among Undergraduates

University marks a developmental transition from adolescence into young adulthood for most students (Arbeau et al., 2011). For some, alcohol use is an integral part of the post secondary experience. The 2004 Canadian Campus Survey showed that 85% of undergraduate students reported using alcohol in the past year and 77% in the past month; 33% demonstrated harmful and hazardous drinking behaviours (e.g., experiencing feelings of guilt about their drinking, memory loss, and other concerns; Adlaf, Demers, & Gliksman, 2005). Based on U.S. data, the most extensively misused substance on campus is alcohol, with negative consequences including physical injuries, damage to others, and institutional costs (Perkins, 2002). Undergraduate students are particularly vulnerable to the consequences of heavy alcohol use as the substance negatively affects areas of the brain related to functioning that are still developing in young adults into their early twenties (Nova Scotia Department of Health and Wellness, 2012).

Heavy Episodic Drinking

Heavy episodic drinking (HED) is defined as the consumption of five or more drinks for males and four or more for women in a two-hour period (Wechsler, Lee, Kuo & Lee, 2000). This type of drinking behaviour is particularly common in undergraduate populations, with 40 to 45% of students reporting HED within the last two weeks (Canadian Campus Survey, 2004; Grant, 2007). A recent study found that one in three college students met criteria (based on DSM-IV-TR categories; APA, 2000) for alcohol abuse or dependence, and that those enrolled in college are more likely to develop an alcohol related disorder compared to their peers who did not attend college (Borden et al.,

2011). Harmful drinking patterns are related to students' living situations; an increase in drinking is seen for students living on campus (24%) and students living off campus (16.8%) compared to those who are living with family members (12%; Canadian Campus Survey, 2004). Students who participate in HED put themselves at an increased risk for poor academic performance, drinking and driving, risky sexual behaviour, physical injuries, and legal problems (Borden et al., 2011), as well as possible long term memory deficits produced by heavy-frequent drinking (Courtney, 2009). On these occasions where HED has taken place, pregaming has often preceded (Labhart, Graham, Wells, & Kuntsche, 2013).

Pregaming

Pregaming (also known as “pre-partying”, “pre-drinking”, and “front-loading” in the literature) refers to consuming alcohol in a short period of time prior to the departure to some other social occasion where further drinking may or may not be taking place (Borsari, 2007; Bachrach, 2012). A pregaming session lasts an average of one and a half hours (Zamboanga et al., 2013) and can involve individual or group drinking in order to attain a ‘buzz’ prior to leaving for another social event where alcohol may be too expensive or unavailable (Borsari, 2007). It is common for pregaming to involve drinking games, but can take place without (Borsari, 2007). Pregaming is particularly prevalent in student populations, escalating upon entry to post secondary institutions with few ceasing this type of behaviour after high school (Labhart et al., 2013; Haas et al., 2013). Studies have shown that two thirds of college drinkers participate in a pregaming event prior to departing for another social event (Bachrach, 2007), and 65 to 75% of students participated in this type of drinking behaviour within the last two weeks

(Labhart et al., 2013). Men are more likely than women to drink beer and women are more likely to take shots of liquor or consume mixed drinks during the pregame event (Pedersen & Labrie, 2007). An average pregame session involves 3.70 drinks for men and 3.22 drinks for women (Pedersen & LaBrie, 2007) demonstrating that many individuals will consume enough alcohol to meet the definition of HED before reaching their final destination.

Pregaming and Heavy Episodic Drinking

Due to this additional opportunity to consume alcohol, students drink considerably larger amounts of alcohol on an evening that involves pregame (Labhart et al., 2013); an average of 8.15 drinks for men and 5.76 for women on evenings when pregame takes place, compared to 5.83 for men and 4.07 for women on drinking evenings when pregame did not occur (Pedersen & Labrie, 2007). At the primary drinking destination men report consuming an average of four additional drinks after the pregame and women report consuming another two and a half drinks (Pedersen & LaBrie, 2007). As a result of fast consumption during the pregame, men are 1.33 times more likely and women 1.75 times more likely to engage in HED on these evenings (Pedersen & LaBrie, 2007). Pregaming behaviours also show a positive association with alcohol related consequences for undergraduate populations (Ray, Stapleton, Turrisi, & Phillion, 2012). Black outs, passing out, and hangovers are some of the consequences of consuming large amounts of alcohol over a short period of time. Pedersen and colleagues (2009) suggested that pregame results in increased alcohol related consequences because individuals who engage in pregame are likely to drink large amounts of alcohol quickly. Further, pregame results in difficulty following typical intoxication

cues individuals normally can attend to on evenings where pregaming does not precede (Pedersen et al., 2009).

Personality as a Predictor of Alcohol Use

Certain personality traits are associated with HED: impulsivity, sensation seeking, anxiety sensitivity, and hopelessness (Conrod, Castellanos-Ryan, & Strang 2010).

Individual personality traits act as concurrent or predictive factors of alcohol use and problematic drinking (Conrod et al., 2010).

Impulsivity. Impulsivity is a strong predictor of alcohol related problems (Magid, McLean, & Colder, 2007). This may be a result of a tendency to act rashly without any sufficient planning or forethought, as well as lack of consideration of possible negative consequences (Adams et al., 2012; Claes et al., 2000; Courtney, 2012). Higher levels of trait impulsivity are an indicator of future alcohol use and may serve as a predisposing factor towards dependence and other alcohol use disorders. These problematic drinking behaviours are a result of the impulsive individual's inability to inhibit behaviours that could be harmful to them, as well as rash decisions to cope (e.g., participating in HED), providing them immediate relief without considering the consequences that may result afterwards (Magid et al., 2007).

Sensation seeking. Sensation seeking is strongly associated with alcohol use, as those with this personality type often seek varied intense stimulation and alcohol is able to provide such arousal (Magid et al., 2007). Those who are high on sensation seeking traits are willing to take risks for the sake of experiences that are new and exciting and enjoy these events even if they may be dangerous (Magid et al., 2007; Kuntshe et al.,

2006), which explains why this personality relates significantly to alcohol use and problematic drinking (Adams et al., 2012)

Hopelessness. Hopeless individuals are prone to depressive and introverted cognitions and this leads them to be attracted to the analgesic properties of alcohol (Conrod et al., 2000). Using alcohol in order to self-medicate to alleviate negative emotional states allows the substance to provide a negatively reinforcing effect (Conrod et al., 2000; Pihl & Peterson, 1995). Drinking in order to relieve a state of hopelessness is positively associated with riskier patterns of alcohol use and has a direct effect on alcohol related problems (Hustad et al., 2014; Magid, 2007).

Anxiety sensitivity. Anxiety sensitivity is a cognitive style characterized by a fear or expectation that symptoms of anxiety and related physical arousal will result in real consequences such as social embarrassment, physical illness, or loss of mental control (Conrod, Pihl, Stewart, & Dongier, 2000). Individuals high in anxiety sensitivity may use alcohol in order to self-medicate these negative cognitions as the substance has anxiolytic properties (Conrod et al., 2010). This type of drinking has been found to be associated with alcohol use disorders as it allows for an escape from these feared anxiety symptoms (Grant et al., 2009; Conrod et al., 2000).

Motives for Drinking

Motives act as a mediating factor between personality and alcohol use, which explains that different personalities consume alcohol in order to attain different outcomes, or to satisfy different needs (Cox & Klinger, 1988; Cutter & O'Farrell, 1984). Four motives for drinking have been identified: enhancement, coping, social, and conforming motives (Cox & Klinger, 1988). Enhancement is described as drinking in order to

receive external positive reinforcement or to elevate a positive mood (Grant et al., 2007). A coping motive for drinking is described as drinking in order to relieve a negative emotional state and provides the individual with internal negative reinforcement (Grant et al., 2007). Both enhancement and coping motives are labeled as emotional-use motives which are associated with frequency and quantity of alcohol use, heavy drinking, and alcohol related problems (Cooper, 1994). A social motive for drinking is also described as drinking in order to achieve positive reinforcement, but is tied to external environmental cues rather than the internal cues as described by enhancement and coping (Cooper, 1994). The social motive is positively related to drinking frequency and quantity of alcohol consumption but not to alcohol related problems (Cooper, 1994). Lastly, the conformity motive is described as alcohol consumption in order to avoid social rejection, which is associated with external environmental cues and provides negative reinforcement (Cooper, 1994)

Gaps in Research

Sensation seeking, impulsivity, hopelessness, and anxiety sensitivity and respective relationships to problematic drinking patterns are well known, however the personalities and their relationship with pregaming and HED in particular remains to be investigated. Although the literature has clearly identified the relationship between pregaming as a risky drinking behaviour that is positively associated with HED (Zamboanga et al., 2013), it is suggested that further research concerning these personality traits and pregaming is needed, as well as an investigation into mediators of the effect of pregaming on related consequences (e.g., In order to enhance feelings of excitement, to reduce feelings of anxiety; Borsari et al., 2007; Merrill et al., 2013).

Hypotheses

The current study will examine relationships between pregaming, personality traits, motives for alcohol use, and heavy episodic drinking among undergraduate students. It is hypothesized that impulsivity, sensation seeking, hopelessness, and anxiety sensitivity personality traits will lead to an increase in participation of pregaming. Additionally, it is hypothesized that enhancement motives for pregaming will be associated with impulsivity and sensation seeking personalities, and coping motives for pregaming will be related to impulsivity, hopelessness, and anxiety sensitivity. It is also hypothesized that pregaming will predict an increase in HED and higher levels of alcohol related consequences.

Method

Participants

The sample consisted of 196 undergraduate students (84% female) from Lakehead University. Students were recruited with posters placed on bulletin boards throughout campus, as well recruitment through the university's research participant sign up system that lists ongoing psychology studies on campus. The mean age of the sample was 21.54 ($SD = 5.04$), with the majority of participants in their 3rd year of study at Lakehead University (28%). Ninety-four percent of participants reported consuming alcohol in their lifetime, with a mean age of 14.88 ($SD = 2.17$) for first consumption.

Procedure

Students were informed that they may participate in the study to be awarded with one bonus point in an undergraduate psychology course or be entered into a draw for \$100 cash if they were ineligible for a bonus point. Interested students would then log on

to SurveyMonkey, an online survey system, to complete the questionnaire. Students would view a page containing information about the study, which indicated that it is completely voluntary and that they may withdraw at any time prior to submission of the survey. Participants were then prompted to fill out an online consent form, followed by a series of self-report questionnaires. Upon completion, participants were debriefed and provided with additional supports in relation to alcohol use and other mental health concerns if needed. Lastly, students were provided with instructions for clearing their history browser in order to maintain confidentiality and privacy.

Measures

Basic demographic information was collected including sex, age, and ethnicity, as well as year of study, university major, occupation, annual family income, weight, and height.

The National Institute on Alcohol Abuse and Alcoholism. The National Institute on Alcohol Abuse and Alcoholism survey was used to measure frequency of alcohol use as well as age of onset, and frequency of alcohol use and binge drinking (National Institute on Alcohol Abuse and Alcoholism, 2003). Questions refer to maximum number of drinks consumed in the lifetime, average number of drinks on a typical drinking day within the last year, and frequency of binge drinking within the past 12 months. Alcohol consumption during the last 12 months is rated on an 11-point scale from 1 (*every day*) to 11 (*I never drank any alcohol*). Average number of drinks typically consumed during a drinking day during the last 12 months is rated on a 10-point scale from 1 (*twenty five or more drinks*), to 10 (*one drink*). Maximum number of drinks consumed in the lifetime during a 24-hour period is rated on a 10-point scale from 1 (36

drinks or more) to 10 (*one drink*). Frequency of HED participation is measured on a nine-point scale from 1 (*every day*) to 9 (*one or two days in the past year*)

Prepartying Motivations Inventory. Participants' motivations for pregamming were measured using the Prepartying Motivations Inventory questionnaire (PMI; LaBrie et al., 2012). This is a self-report questionnaire with 16 questions ranked on a Likert-type scale ranging from 1 (*almost never/never*) to 5 (*almost always/always*). Chronbach's alpha for this measure range from .73 - .89 (LaBrie et al., 2012).

For the purpose of this study, new subscales were created using the items from the PMI (LaBrie et al., 2013) to create enhancement and coping motive subscales. Although four motives have been identified for alcohol use (enhancement, coping, social, and conformity; Cox & Klinger, 1988), enhancement and coping motives will be used to measure the effects of personality on pregamming. The enhancement motive subscale was created with five items from the PMI, including items such as "to pump myself up to go out", and "because having a few drinks makes the night more interesting". The coping motive subscale contains three items including "to relax or loosen up before I go out", "it makes talking to new people easier", and "it helps me to feel more relaxed when meeting new people when I go out". Internal consistency for the two subscales yielded moderate to strong reliabilities; Chronbach's alpha was .95 for the coping motive and .79 for the enhancement motive.

Prepartying Behaviour Index. Actual pregamming behaviour is measured with the Prepartying Behaviour Index (PBI; LaBrie et al., 2012) where participants respond to two open-ended questions regarding average consumption of drinks on pregamming days and frequency of pregamming events within the past month.

The Substance Use Risk Profiles Scale. The Substance Use Risk Profile Scale (SURPS; Woicik et al., 2009) was used to assess participants in regards to the four personality traits; impulsivity (five items; e.g., “I often don’t think things through before I speak”), sensation seeking (six items; e.g., “I would like to skydive”), hopelessness (six items, reverse coded; e.g., “I am content”), and anxiety sensitivity (five items; e.g., “It’s frightening to feel dizzy or faint”). Participants are asked to respond to 23 items on a Likert-type scale (ranging from 1-strongly agree to 5-strongly disagree) measuring how they have typically felt or behaved over the past several years. The SURPS is a stable assessment of the four personalities with strong concurrent and predictive validities (Krank et al., 2011). The scale also demonstrates a measure of good convergent and discriminant validity, test-retest reliability, and moderate to strong levels of internal consistency (Krank et al., 2011).

Rutgers Alcohol Problem Index. Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989), was used to measure the types of alcohol-related consequences participants experienced in total within the last three years, as well as the past seven days. In relation to its two separate time frames (in the last three years, in the past seven days) the RAPI provides good internal consistency (ranging from .92 to .93), as well as good convergent validity (White & Labouvie, 1989).

Results

Ninety five percent of participants had a drink at least once in their lifetime, 1.5% reported drinking “just a sip”, leaving two percent of participants who had never tried alcohol. The average age of first consumption was reported at 14.88 ($SD = 2.17$). When asked to select how often any type of alcohol was consumed during the last 12 months,

the most frequently endorsed item was “2 to 3 times a month” on an 11-point scale Likert-type scale ($M = 6.19$, $SD = 1.69$). Average number of alcoholic drinks consumed on a typical day of drinking during the last 12 months was reported as “5 to 6 drinks” on a 10-point Likert-type scale ($M = 7.61$, $SD = 1.84$).

During the last 12 months men and women reported participating in HED once a month. The most frequently endorsed alcohol related consequences reported for the last three years (one to two times), included “had a bad time” ($n = 67$ occasions), “caused shame or embarrassment to someone” ($n = 63$ occasions), “had a fight, argument, or bad feelings with a friend” ($n = 60$ occasions), and “noticed a change in your personality” ($n = 56$ occasions).

For men and women average drinks consumed during the pregame were 2.70 drinks ($SD = 2.70$), with a range of 0 to 20 drinks reported. Participants reported an average of 1.94 ($SD = 2.75$) occasions of pregame during the past 30 days, with a range of 0 to 15 pregame occasions. The original PMI scales were analyzed and the highest endorsed pregame behaviour found was interpersonal enhancement ($M = 14.28$, $SD = 7.33$) followed by situational control ($M = 8.15$, $SD = 4.23$). Intimate pursuit and barriers to consumption yielded lower means of 4.01 ($SD = 2.37$) and 4.21 ($SD = 2.13$), respectively. The most frequently endorsed reasons for pregame included “to pump myself up to go out” (12.8% reported this item as *almost always/always*), “because having a few drinks before going out makes the night more interesting” (12.8% reported this item as *almost always/always*), and “so I don’t have to drink a drink at the place where I’m going” (7.7% reported this item as *almost always/always*). The item which was endorsed the

least was the item “to increase the likelihood of hooking up”, which was endorsed by 1.5% of participants (*almost always/always*).

Simple linear regression results are presented in Table 1 for the three hypotheses. Hypothesis 1 was not completely supported. That is, the effect of personality on pregameing behaviour was not significant for sensation seeking, hopelessness, and anxiety sensitivity, but was significant for the impulsivity. Those high on impulsivity were found to be the only personality to significantly participate in more occasions of pregameing than any other personality during the last 30 days. Hypothesis 2 was not supported; enhancement and coping motives did not act as a mediating variable between personality and pregameing. Participation in pregameing led to significantly higher levels of HED and alcohol related consequences for participants supporting hypothesis 3.

Discussion

The present study has found a positive relationship between pregameing behaviour and higher levels of HED, as well as increased experience of alcohol related consequences on drinking occasions preceded with pregameing. Inconsistent with our first hypothesis, sensation seeking, hopelessness, and anxiety sensitivity were not predictive of higher levels of pregameing, however the relationship between impulsivity and participation was significant, partially supporting this hypothesis. Finally, enhancement and coping motives did not act as mediators between personality and pregameing, causing us to reject our second hypothesis.

There are several potential explanations for why the personality traits were not predictive of pregameing behaviour in this study. Firstly, the insignificant results for hypothesis 1 may be the result of an unrepresentative sample of the general population of

undergraduate drinkers. The current study consisted of mainly white females of high socio-economic status, reporting relatively low levels of pregaming and HED in general. This homogenous group of participants did not capture a broad sample of the undergraduate drinkers of varying personality traits and drinking patterns. Past literature has found men to be more likely than women to be both frequent and heavy-drinkers, drinking more than five drinks on typical drinking days and weekly drinking (12.5% of women, compared to 20.6% of men; Adlaf et al., 2005), which would explain the inconsistency as a result of this female majority sample. Although more recent literature has found women's drinking rates as becoming similar to men's (Mushquash et al., 2013), it emphasizes the fact that our sample was mostly female and a more representative sample would have been ideal in order to generalize findings to an undergraduate population.

The results from the current study regarding HED and pregaming behaviours was unexpected given the literature. Out of the two to three times per month participants report drinking, they are participating in pregaming behaviour on only 1.94 ($SD = 2.75$) of the occasions. Most of the literature found that those who participate in pregaming behaviour report doing so an average of three to four times a month (Kenny et al., 2010; Pedersen et al., 2009). During the pregame, the average of 2.70 drinks reported in the current study is inconsistent with findings in the literature, such as the study by DeJong and colleagues (2010), which found 4.9 ($SD = 3.1$) drinks as the average consumption during participants' most recent pregaming session. This is inconsistent with the literature that suggests students are nearing levels of HED before reaching their primary

drinking or social destination, further demonstrating that this sample may be unrepresentative of a true undergraduate drinking population.

Secondly, in addition to the unrepresentative sample, the measures utilized may explain why personality was not predictive for enhancement or coping reasons. The PMI (LaBrie et al., 2012) was originally intended to measure motives that were inconsistent with what would be predictive of the personalities as measured by the SURPS (Woicik et al., 2009). The original PMI included four subscales: interpersonal enhancement, situational control, intimate pursuit, and barriers to consumption, as measures of pregameing motives. As the original subscales did not identify pregameing motives for enhancement or coping, new subscales were created and analyzed using items from the original PMI.

The new enhancement motives subscale was created to analyze the relationship between the impulsivity and sensation seeking personalities with pregameing and the new coping motives subscale was created to analyze its relationship with impulsivity, hopelessness, and anxiety sensitive personalities. Although the new enhancement subscale had good internal consistency, the five items may not have been optimal to demonstrate drinking for purely enhancement motives. The literature signifies that enhancement has a mediating effect between impulsivity and sensation seeking with alcohol use and problems (Adams et al., 2012). With a limited number of items to choose from to create an enhancement subscale many of these items had been taken from the original interpersonal enhancement subscale of the PMI, which measured social enhancement motives and the situational control subscale. While items of this nature appear to demonstrate drinking for some sort of enhancement it may not be descriptive of

why someone high on sensation seeking or impulsivity traits might pregame in order to outline the risks associated of drinking for enhancement reasons.

With only three items from the original PMI appropriate for creating an efficient measure of coping motives, this limited number of items may be explanatory of the insignificant correlations between this subscale with hopelessness and anxiety sensitivity personalities. Overall, the enhancement and coping motives scales may not fully capture what was intended for this study due to the limited number of items included on the scale.

Furthermore, upon analyzing the original PMI scales it was found that the current sample is pregameing primarily for interpersonal enhancement reasons, which has been suggested to be analogous with general social drinking motives (LaBrie et al., 2012). This means the present sample may not be as influenced by strictly enhancement or coping motives as mediators of alcohol by their personalities, but are drinking primarily for a social purpose (e.g., drinking to be more outgoing, talkative, to meet new people, etc.; LaBrie et al., 2012). This finding suggests the current sample is at a relatively low risk as a result of drinking for enhancement or coping reasons (associated with the risks as a result of high levels of impulsivity, sensation seeking, hopelessness, and anxiety sensitivity). However, it is still recommended that health educators explain that pregameing behaviour may not be an effective strategy to enhance one's ability to socialize and communicate with others, to avoid becoming reliant on this type of behaviour in a social setting (LaBrie et al., 2012). Overall, this is a positive finding for this sample as drinking for this purpose does not generally result in problematic drinking behaviours (Cooper, 1994). Although this provides an alternative explanation for the insignificant results of our first and second hypothesis, future research should continue to

examine personality traits as predictors of pregaming behaviour while employing more suitable scales and a heterogeneous sample in order to generalize findings to an undergraduate pregaming population.

Although the current sample may be unrepresentative of the undergraduate pregaming population, the fact that those who demonstrate impulsive personalities were related to higher levels of pregaming should not be negated. This is consistent with the literature that finds this personality to be associated with increased alcohol use (Courtney et al., 2012), and in this case pregaming presents an additional opportunity for alcohol consumption. Although this demonstrates that those who are impulsive are more likely to pregame and experience the consequences associated with this behaviour, those high on impulsive traits in the current sample were not found to drink significantly more during the pregame than average. Inconsistent with the literature, these individuals in our study were not shown to pregame for either enhancement or coping motives. Current literature suggests these individuals may drink for both motives as a result of impulsive decisions to obtain quick rewards without considering possible consequences (enhancement), or negative urgency to relieve distress (coping; Adams et al., 2012; Courtney et al., 2012). The findings from this study could potentially be used to tailor intervention strategies to individuals who display impulsive personalities at the pregaming level.

Although relatively low levels of drinking in general were reported for this sample, students who had reported participation in pregaming were also more likely to engage in HED overall, supporting our second hypothesis. This is consistent with Reid and colleagues' (2010) study that found typical alcohol consumption to be higher for students who pregame compared to those who do not engage in this behaviour. Similar

to the significant relationship established between pregaming and heavy episodic drinking, Labhart and colleagues (2013) found HED to occur 66.1% of the time on evenings preceded with pregaming compared to 35.6% of on-premise drinking only.

Consistent with past findings, pregaming leads to a significant increase in alcohol related consequences. In the current study, students who reported higher levels of pregaming behaviour also experienced significantly higher levels of alcohol related consequences. Our results were in line with Labhart and colleagues' (2013) study, which found participants to experience significantly more negative alcohol related consequences on pregaming evenings, compared to drinking evenings where pregaming did not occur. This study demonstrates that the significant increase in alcohol-related consequences are a direct result of participation in pregaming, which is consistent with Merrill and colleagues' (2013) study that found an increase of alcohol related consequences to be independent of the number of drinks typically consumed during the pregaming session or on a typical drinking evening. The findings from the current study support pregaming as a context-specific risk factor for alcohol related consequences, that is, an event found to be significantly related to higher risks and consequences from alcohol consumption. This provides an explanation for why undergraduates are reaching levels of HED on certain evenings and not others, as well as an opportunity to target drinking at this level to prevent these consequences. Prevention and intervention strategies may be employed to reduce risks of participation in HED and the experience of these alcohol-related consequences by employing prevention or reduction strategies on campus at the pregaming level as it is known to increase these risks (Merrill et al., 2013). Strategies for prevention and intervention on campus may include restriction of intoxication (enforced

upon entry) at campus functions in order to prevent pregaming from occurring prior to these events (Borsari et al., 2007). Educational workshops informing students of the risks and consequences of pregaming as well as how to employ strategies to monitor drinking and reduce HED on pregaming evenings may also be beneficial for those who participate in this behaviour.

Limitations and Future Directions

In addition to the creation of the enhancement and coping scales of the PMI and the relatively homogenous sample, this study's cross sectional design presents another limitation. This type of design allows for restricted insight into participants' broad drinking patterns; however, many questions throughout the survey work to offset this limitation by measuring drinking patterns within the past seven days, during the past 12 months, or within the last three years. Additional research with a larger and more diverse sample using a longitudinal design may allow for further examination of personality traits and pregaming behaviour. As the study outlines alcohol-related consequences associated with pregaming, further examination into the pregaming environment may be beneficial to discover why these risks are increased for those who pregame compared to those who do not. Such an examination could analyze context specific factors of pregaming, which may lead to higher levels of HED and alcohol related consequences (e.g., size of group, drinking games, pregame location, relationship between group members, etc.). Additional research suggested by Merrill and colleagues (2013), is to determine whether it is the drinking that occurs during the pregame, during the main drinking event after the pregame, or across the entire drinking episode that is crucial for the experience of alcohol related consequences.

Conclusion

The present study found impulsivity to lead to higher levels of pregaming, however, did not find similar significant results for sensation seeking, hopelessness, and anxiety sensitivity, which was inconsistent with our first hypothesis. Our second hypotheses was also rejected as personality and pregaming was not predicted by either enhancement or coping motives. This is inconsistent of what was suggested from the literature on personality and heavy episodic drinking which found impulsivity and sensation seeking to predict alcohol use in order to enhance feelings of excitement, and hopelessness and anxiety sensitivity to predict alcohol use in order to cope with depressive moods or to relieve feelings of anxiety. Several explanations for the insignificant results were identified, such as issues with the scales used and an unrepresentative sample. Further research correcting these limitations is suggested in order to further investigate personality and pregaming behaviour.

Pregaming was identified as a context specific risk factor influencing higher levels of HED and an increase in alcohol related consequences for students who pregame compared to those who do not. The clear findings from this study identify the consequences associated with pregaming creating an opportunity to target intervention or prevention strategies at the pregaming level for those who are at risk. The results of this study imply that future research needs to be conducted in order to further investigate the influence that impulsivity, sensation seeking, hopelessness, and anxiety sensitivity may have on pregaming behaviour as well as the risks that may be associated. The study also highlights potential research to be conducted in order to fully understand context-specific factors during a pregaming session that are leading to these higher levels of HED and

alcohol related consequences. As the findings from this study identified pregaming as a risky drinking behaviour that wasn't associated to personality traits, this potential research would be beneficial to investigate context-specific factors to understand what is occurring during a pregaming occasion that increases these risks for those who participate, as well as which factors are associated with higher risks. These findings could potentially be utilized in clinical or educational settings in order to prevent undergraduates who participate in pregaming from the risks associated with this behaviour and HED, as well as the experience of alcohol related consequences.

Table 1

Simple Linear Regression Analyses Predicting Pregaming, HED, and Consequences

<i>Predictors</i>	<i>R²</i>	<i>Adj R²</i>	<i>β</i>	<i>ΔR²</i>	<i>ΔF</i>	<i>df</i>
HED (NIAAA)						
Pregaming (PBQ)	.473	.467	-.665***	.473	.000	2, 180
Frequency of Pregaming (PBQ)						
Impulsivity (SURPS)	.042	.031	-.179**	.042	3.737	2, 171
Sensation Seeking (SURPS)	.019	.007	-.094	.019	1.647	2, 171
Hopelessness (SURPS)	.018	.007	.091	.018	1.608	2, 171
Anxiety Sensitivity (SURPS)	.011	-.001	-.022	.011	.924	2, 171
Pregaming for Coping motives						
Impulsivity (SURPS)	.004	-.007	-.065	.004	.687	2, 171
Hopelessness (SURPS)	.007	-.005	.080	.007	.563	2, 171
Anxiety Sensitivity (SURPS)	.013	.001	-.114	.013	1.124	2, 171
Pregame for Enhancement Motives						
Sensation Seeking (SURPS)	.010	-.001	-.095	.010	.886	2, 171
Impulsivity (SURPS)	.004	-.007	-.065	.004	.376	2, 171
Alcohol Consequences						
Frequency of Pregaming Behaviour in Past Month (PBQ)	.160	.151	.386***	.160	17.575	2, 185

Note. NIAAA = National Institute on Alcohol Abuse and Alcoholism (National Institute on Alcohol Abuse and Alcoholism, 2003); SURPS = Substance Use Risk Profile Scale (Woicik et al., 2009). PBQ = Prepartying Behaviour Questionnaire (LaBrie et al., 2012).

p* < .05. ** *p* < .01. * *p* < .001.

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