How Harmonious and Obsessive Passion for Alcohol and Marijuana Relate to Consumption and Negative Consequences

MAI-LY N. STEERS, PH.D.,^{a,*} CLAYTON NEIGHBORS, PH.D.,^a M. CHRISTINA HOVE, PH.D.,^b NICHOLE OLSON, PH.D.,^c & CHRISTINE M. LEE, PH.D.^d

^aDepartment of Psychology, University of Houston, Houston, Texas

^bDepartment of Veterans Affairs, Clement J. Zablocki Veteran Affairs Medical Center, Milwaukee, Wisconsin

^cDepartment of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California

^dDepartment of Psychiatry and Behavioral Sciences, University of Washington, Seattle, Washington

ABSTRACT. Objective: Although the concepts of harmonious and obsessive passion have been productive in explaining why people eagerly engage in such activities as sports, Internet use, and gambling, previous research has not yet extended these models to explain alcohol and marijuana use among college students. The current research was conducted to clarify the relationships among harmonious and obsessive passion, alcohol and marijuana use, and negative consequences. **Method:** Two studies were conducted using online assessments. In Study 1, 748 heavy drinking college students (58% female) were recruited and completed measures of passion for drinking alcohol, alcohol use, and alcohol-related negative consequences. In Study 2, 352 regular marijuana-using students (54% female) were recruited and completed assessments of marijuana passion, marijuana use, and marijuana-related consequences. **Results:**

Study 1 found that among heavy drinking college students, harmonious passion was a stronger predictor of increased consumption than was obsessive passion, whereas obsessive passion was a stronger predictor of alcohol-related problems than was harmonious passion. Study 2 revealed similar findings with regard to harmonious passion predicting marijuana consumption; however, unlike Study 1, no significant difference between the passions was found in predicting marijuana-related problems. **Conclusions:** This research provides a novel perspective on motivation for alcohol and marijuana use. Findings suggest that understanding the locus of young adults' passion for substance use may be helpful in identifying those who are likely to develop a substance use disorder and therefore may be the most in need of assistance and intervention. (*J. Stud. Alcohol Drugs*, 76, 749–757, 2015)

ALTHOUGH A VAST MAJORITY of young adults report substance use (Johnston et al., 2013; McCarty et al., 2004), only a fraction of those who use alcohol and other drugs experience negative consequences. Motivational perspectives have played a prominent role in explaining why some people are more susceptible to developing problems. One hypothesis is that individuals who experience alcohol- and marijuana-related problems have a different motivation for use, or that their passion for substance use is different from individuals who do not develop problems. Harmonious passion is defined as the integration of an activity into one's identity without external pressure to do so. Conversely, obsessive passion is defined as the integration of an activity into one's identity in order to meet interpersonal, external contingencies (e.g., to appear more successful in front of others) or fulfill intrapersonal desires (e.g., a momentary thrill) (Vallerand et al., 2003). Previous research has investigated the concepts of harmonious and obsessive passion in

relation to online gaming, online shopping, and problematic gambling (Mageau et al., 2005; Ratelle et al., 2004; Skitch & Hodgins, 2005; Vallerand et al., 2003; Wang & Chu, 2007; Wang & Yang, 2008). Findings suggest that activities exemplified by harmonious passion foster positive affect and healthy persistence, whereas obsessive passion has been associated with negative affect, preoccupation, aggressive behavior, compulsive activity engagement, and frustration if engagement in the activity is thwarted (Philippe et al., 2009; Vallerand et al., 2003; Zhang et al., 2014). Given the utility of passion in explaining behavior in a variety of domains, we were interested in determining the extent to which this framework might also be useful in understanding problematic alcohol and marijuana use behaviors.

Passion

Vallerand and colleagues (2003) proposed the Dualistic Model of Passion, which examines two distinct types of passion in psychological domains: harmonious and obsessive. Similar to intrinsic and extrinsic motivations, the types of passion are integrated into a person's identity through autonomous (harmonious) or controlled (obsessive) mechanisms (Marsh et al., 2013; Vallerand et al., 2003). However, unlike extrinsic forms of motivation, passion involves intense liking of an activity. Moreover, although intrinsic motivation does

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*Correspondence may be sent to Mai-Ly N. Steers at the University of Houston, 126 Heyne Building, Houston, TX 77204-5022, or via email at: mailysteers@gmail.com.

not necessitate that the individual incorporate the activity into the self, passion involves the internalization of a given activity into one's identity (Amiot et al., 2006; Vallerand et al., 2003).

An individual is considered harmoniously passionate about a given activity if it plays a central role in the individual's identity; however, he or she is in control of when to pursue or not pursue the activity. For example, a harmoniously passionate person might be a man who self-identifies as a basketball player and dedicates considerable time and effort to the sport. Although he enjoys and feels energized by playing, he also has the ability to balance the role of basketball player. Hence, he is able to forgo playing basketball to meet a work deadline or spend time with others close to him, without experiencing psychological distress. Previous research has found harmonious passion to be associated with beneficial outcomes such as positive affect (Mageau et al., 2005), increased subjective well-being (Houlfort et al., 1999), and greater concentration (Vallerand et al., 2003).

On the other hand, obsessive passion is characterized by unyielding, uncontrollable urges to persist in an activity despite associated negative outcomes (Vallerand et al., 2003). In line with the previous example, an obsessively passionate basketball player might continue to practice despite the fact that it takes an extreme toll on his health and personal relationships. Thus, playing basketball is no longer about winning games but has become an all-consuming part of his life and identity. As a consequence, obsessive passion has been associated with unfavorable consequences such as conflict in other life domains, negative affect during and after activity engagement (e.g., increased rumination, anxiety, negative mood, and guilt; Ratelle et al., 2004; Vallerand et al., 2003), and interpersonal conflicts (Séguin-Levesque et al., 2003).

Thus, passion has been reliable in predicting outcomes in a variety of other realms. However, despite the fact that it is distinct from previous conceptualizations of motivation and related constructs in the substance use literature, to our knowledge, research has yet to explore passion in the substance use domain. For instance, obsessive passion is conceptually related to substance disorder criteria, including difficulty in controlling consumption, but it has no direct overlap with other symptoms of substance use disorders. Furthermore, harmonious passion has no equivalent construct among substance use disorder criteria. Passion is also distinct from motives and expectancies, which refer to specific domains such as social and affective (e.g., Cooper, 1994; Fromme et al., 1993; Kuntsche et al., 2005; Simons et al., 2005), whereas passion refers more to the magnitude of internal or external desire to engage in a particular behavior. Passion is also distinctive from scales that assess temptation and restraint (Collins & Lapp, 1992), which focus more on rumination and strategies for avoid-

ing consumption. In addition, obsessive passion is distinct from urge and craving, which are typically conceptualized to be more time limited, temporary states, whereas passion is conceptualized as being more persistent and stable (Sayette et al., 2000). Hence, the current investigation considers passion's utility in predicting alcohol and marijuana use and related problems among college students.

Alcohol use among college students: Prevalence and problems

Monitoring the Future found that 87% of young adults between ages 19 and 28 years had used alcohol (Johnston et al., 2013). Moreover, approximately 75% of heavy drinkers are between ages 18 and 25 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013). Specifically, with regard to the college population, 37% of students reported heavy drinking in the past year (Johnston et al., 2013). Thus, excessive alcohol consumption or heavy episodic drinking, traditionally defined as four or more drinks for women and five or more drinks for men in a sitting (Johnston et al., 2013), remains a serious health concern, particularly among college students. The deleterious effects of heavy alcohol use include a host of personal and interpersonal problems, including injury, unplanned and risky sexual behavior (Perkins, 1992; Wechsler & Isaac, 1992), poor academic performance (Benton et al., 2004), physical altercations, and car crashes (Hingson et al., 2009).

Marijuana use among college students: Prevalence and problems

Research suggests that illicit drug use is highest among young adults 18–25 years old (44%), with marijuana the most commonly used illicit drug (SAMHSA, 2012). Although recreational marijuana use is illegal in most states and is associated with negative consequences, young adults often see marijuana use as relatively normal and associate it with positive social, affective, and physiological effects (Aarons et al., 2001; Simons et al., 1998). Despite these impressions, regular marijuana use has broad and serious implications. Previous research suggests that particularly chronic marijuana use has been associated with health and cognitive issues, including lung damage (Gil et al., 1995; Jones, 1983; Zimmer & Morgan, 1995), suppressed immune functioning (Jones, 1983), memory and learning problems (Pope & Yurgelun-Todd, 1996), and problem-solving deficits (Harder & Rietbrock, 1997). Given the enduring and negative impact of problematic alcohol and marijuana use, it is vital to examine motivating factors (e.g., passion), to help identify and explain why some young adults are more susceptible than others to developing substance use disorders.

Hypotheses

Previous research has demonstrated that both harmonious passion and obsessive passion are associated with increased activity engagement (Rousseau et al., 2002). Thus, although we expected both to be associated with increased drinking and marijuana use, we made no specific predictions as to whether harmonious or obsessive passion might be uniquely associated with increased consumption. However, because the literature has demonstrated that harmonious passion is generally associated with positive effects (i.e., higher subjective well-being; Houlihan et al., 1999), whereas obsessive passion has been shown to have negative consequences (e.g., Skitch & Hodgins, 2005), we expected that only obsessive passion for alcohol and marijuana would be positively associated with alcohol-related and marijuana negative consequences, respectively.

Study 1 Method

Participants

The current research was designed to evaluate alcohol use and negative consequences as a function of harmonious and obsessive passion. Participants ($N = 748$; 58% female) were heavy drinkers who were participating in a larger, ongoing intervention trial at a large West Coast university (Neighbors et al., 2010). Mean age of participants was 19.12 years ($SD = 0.57$); the sample was 65.8% White, 23.7% Asian/Pacific Islander, 4.2% Hispanic, and 6.3% unidentified/other.

Procedure

Participants completed an initial screening survey to see if they met heavy drinking criteria of having engaged in at least one occasion of heavy drinking (five drinks for men and four for women in one sitting) in the previous month. Participants meeting these criteria were invited to complete a baseline survey as part of a larger social norms alcohol intervention study. Participants were paid \$25 for their participation in this portion of the study. They subsequently completed 6- and 12-month follow-up surveys for which they received similar financial compensation. Data for this study were drawn from the baseline assessment. The university's institutional review board approved all aspects of the present study.

Measures

Passion. The Passion Scale (Vallerand et al., 2003), assessing both harmonious passion (seven items, $\alpha = .87$) and obsessive passion (seven items, $\alpha = .92$), was adapted to focus on alcohol use. Participants indicated degree of agreement with items on a 7-point Likert scale (1 = *strongly*

disagree, 7 = *strongly agree*). Example items include the following: "Using alcohol allows me to live a variety of experiences" (harmonious passion), and "I cannot live without alcohol" (obsessive passion).

Alcohol consumption. The Daily Drinking Questionnaire (Collins et al., 1985) was used to assess the quantity and frequency of alcohol consumption. Participants were asked to "Consider a typical week during the last three months. How much alcohol, on average (measured in number of drinks), do you drink on each day of a typical week?" Response options allowed participants to enter the typical number of standard drinks consumed on each day of a typical week. Participants' responses for each day of the week were summed to generate a typical weekly drinking variable. Previous research has established the Daily Drinking Questionnaire to have good concurrent validity and test-retest reliability (Marlatt et al., 1998; Neighbors et al., 2006).

Alcohol-related consequences. The Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) was used to assess problems and negative consequences associated with alcohol use in the sample. The scale consists of 25 items that ask how many times a particular negative event has occurred while drinking or because of alcohol use. In the present study, the RAPI assessed problems over the past 3 months, which is a timeframe that has been commonly used with this measure (e.g., Martens et al., 2007; White et al., 2006). Example items include the following: "Not able to do your homework or study for a test," "Went to work or school high or drunk," and "Passed out or fainted suddenly." Three items that might be considered to conceptually overlap with obsessive passion ("Kept drinking when you promised yourself not to") were removed, leaving 22 items in total. Response options ranged from *never* to *more than 10 times* on a 5-point Likert scale. Items were summed to create a composite score ($\alpha = .90$).

Study 1 Results

Means, standard deviations, and zero-order correlations for Study 1 are presented in Table 1. Participants reported consuming an average of 10.34 ($SD = 10.21$) drinks per week and scored an average of 6.49 ($SD = 8.55$) for negative alcohol-related consequences on the RAPI. In general, participants reported more harmonious ($M = 3.33$, $SD = 1.15$) than obsessive passion for alcohol ($M = 1.53$, $SD = 0.95$, $t = 43.35$, $p < .001$).

Negative binomial results

Because the data representing the outcome variable of drinks per week and alcohol-related problems were positively skewed, it was more appropriate to use negative binomial regression analysis, as opposed to normal regression techniques that operate on the assumption that the residuals are

TABLE 1. Correlations among main variables for Study 1

Variable	1.	2.	3.	4.	5.	6.
1. Harmonious passion	—					
2. Obsessive passion	.42***	—				
3. Drinks per week	.34***	.25***	—			
4. Alcohol-related consequences	.29***	.45***	.50***	—		
5. Age	.05	.03	.03	.04	—	
6. Gender	.17***	.08*	.25***	.17***	.08***	—
<i>M</i>	3.33	1.53	10.34	5.83	18.13	0.41
<i>SD</i>	1.14	0.95	10.21	7.63	0.44	0.49

Notes: *N* = 748. Gender was dummy coded with females = 0, males = 1.

*p < .05; ***p < .001.

normally distributed (Hilbe, 2011). Two separate negative binomial regression equations were run to examine both alcohol use and related negative consequences as a function of harmonious and obsessive passion. In the model predicting problems, we also included drinks per week as a covariate to control for effects that might be attributable to the strong association between consumption and problems (Table 2). Sex and age were included as covariates. Associations between passion subscales and problems, without controlling for use, were stronger and in the same direction. In the first analysis, both harmonious and obsessive passions were entered into the equation simultaneously in predicting drinks per week. As anticipated, both harmonious passion ($b = 0.24$, $p < .001$) and obsessive passion ($b = 0.10$, $p = .005$) were significantly and positively related to drinks per week. To compare the strength of associations between harmonious and obsessive passions, we transformed partial r 's after controlling the other passion measure (and also controlling for use in the case of negative consequence outcomes) to Fisher's Z 's. We tested the differences between these Z 's and found that the association of harmonious passion with drinks per week was significantly stronger than the association between obsessive passion and use ($Z = 2.66$, $p = .008$).

In the second negative binomial regression, harmonious passion and obsessive passion were entered in the equation simultaneously in predicting alcohol-related problems, controlling for age, sex, and drinks per week. As expected, harmonious passion ($b = 0.12$, $p = .001$) and obsessive passion ($b = 0.32$, $p < .001$) were positively and significantly

associated with alcohol-related problems. However, results of the second Fisher's r -to- Z transformation analysis revealed that obsessive passion was more strongly related than harmonious passion to alcohol-related problems ($Z = -2.28$, $p = .023$). Findings mirror previous problematic use research, which found obsessive passion for gambling to be associated with greater negative consequences than harmonious passion (Ratelle et al., 2004; Skitch & Hodgins, 2005).

Study 2 Method

Participants

The purpose of Study 2 was to evaluate marijuana use and negative consequences as a function of harmonious and obsessive passion. Participants ($n = 352$, 54% female) were part of a larger longitudinal study examining a web-based marijuana intervention during the transition from high school to college. The mean age of participants was 18.00 years ($SD = 0.33$); the sample was 77.0% White, 11.0% Asian, 1.2% African American, .6% Native American, 8.9% multiracial, and 1.3% unidentified/other.

Procedure

Participants who indicated using marijuana within the past 3 months were included in the present study. They completed 3-month, 6-month, 9-month, and 2-year follow-up surveys and were paid \$25 for their participation. Data for this study

TABLE 2. Negative binomial analysis controlling for age and gender in predicting drinks per week and alcohol-related consequences

Outcome	Predictor	Value/df	<i>b</i>	<i>t</i>	<i>p</i>
Drinks per week	Age	1.15	-0.01	-0.16	.877
	Gender		0.38	5.97	<.001
	Harmonious passion		0.24	7.70	<.001
	Obsessive passion		0.10	2.74	.006
Alcohol-related consequences	Age	1.14	0.03	0.33	.740
	Gender		0.07	0.93	.354
	Drinks per week		0.04	9.82	<.001
	Harmonious passion		0.12	3.22	.001
	Obsessive passion		0.32	7.47	<.001

Note: *N* = 748.

TABLE 3. Correlations among main variables for Study 2

Variable	1.	2.	3.	4.	5.	6.
1. Harmonious passion	—					
2. Obsessive passion	.38***	—				
3. Marijuana use	.46***	.42***	—			
4. Marijuana-related consequences	.38***	.55***	.50***	—		
5. Age	.01	-.01	-.06	-.04	—	
6. Gender	.14*	.07	.17**	.10*	.01	—
<i>M</i>	3.20	1.38	10.42	2.94	18.51	0.46
<i>SD</i>	1.46	0.87	18.09	5.29	0.69	0.50

Notes: $n = 352$. Gender was dummy coded with females = 0, males = 1.

* $p < .05$; ** $p < .01$; *** $p < .001$.

were taken from the 6-month assessment, which was the only time point at which passion was assessed. The university's institutional review board approved all aspects of this study.

Measures

Passion. Similar to Study 1, the Passion Scale (Vallerand et al., 2003), assessing both harmonious passion (seven items, $\alpha = .91$) and obsessive passion (seven items, $\alpha = .95$), was adapted to focus on marijuana use. Participants indicated level of agreement with the scale items on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). Example items included the following: "Using marijuana allows me to live a variety of experiences" (harmonious passion), and "I cannot live without marijuana" (obsessive passion).

Frequency of marijuana use. Frequency of use was assessed by asking participants, "On how many days did you use any kind of marijuana or hashish?" in the past 90 days. This item was adapted from the Global Appraisal of Individual Needs-I (Dennis et al., 2002).

Marijuana-related consequences. Negative consequences associated with marijuana use were assessed with the Rutgers Marijuana Problem Index (White et al., 2005). This 18-item measure was modeled after the RAPI (White & Labouvie, 1989), in which respondents are asked to indicate how many times (1 = *never*, 5 = *more than 10 times*) during the previous 3 months they experienced negative consequences while using marijuana or as a result of marijuana use. Example items include, "How many times during the previous 3 months have you gone to work or school high?" As with alcohol-related problems, two items that might be perceived to conceptually overlap with the obsessive passion construct (e.g., "Felt physically or psychologically dependent") were removed, leaving a total of 16 items ($\alpha = .90$). Items were summed to create a composite score for marijuana-related consequences.

Study 2 Results

Means, standard deviations, and zero-order correlations for Study 2 are presented in Table 3. Participants reported

using marijuana an average of 10 of the previous 90 days, with 32.40% reporting using marijuana on 3 or more days per week. Students reported experiencing an average of 3.23 ($SD = 5.86$) marijuana-related consequences an average of 6–10 times in the previous 90 days. On average, students reported more harmonious ($M = 3.20$, $SD = 1.46$) than obsessive passion for marijuana use ($M = 1.38$, $SD = .87$; $t = 24.92$, $p < .001$). Moreover, respondents scored an average of 2.94 ($SD = 5.30$) for negative marijuana-related consequences on the Rutgers Marijuana Problem Index.

Negative binomial results

As with Study 1, the outcomes of marijuana use and marijuana-related problems were positively skewed; therefore, two negative binomial regression equations were run. Results are presented in Table 4. Analyses examined marijuana use and related negative consequences as a function of harmonious and obsessive passion, controlling for age and sex. For the first analysis, both harmonious passion ($b = 0.52$, $p < .001$) and obsessive passion ($b = 0.37$, $p < .001$) were uniquely associated with the frequency of marijuana use. We again used Fisher's partial r -to- Z transformation to calculate a Z -statistic to evaluate the potential difference in magnitude of associations between harmonious and obsessive passion and use. As with Study 1, results indicated that harmonious passion was associated with more frequent marijuana use ($Z = 4.73$, $p < .001$) than was obsessive passion.

In the second negative binomial regression analysis, marijuana use, harmonious passion, and obsessive passion were entered in the equation simultaneously in predicting marijuana-related consequences. Use was again included as a covariate to control for effects that might be due to the association between consumption and problems. Results that did not control for use did not change conclusions. The results of the negative binomial analysis indicate that both obsessive passion ($b = 0.53$, $p < .001$) and harmonious passion ($b = 0.25$, $p < .001$) were associated with greater negative consequences. However, obsessive passion and harmonious passion were not found to be significantly different from one another in predicting marijuana-related consequences

TABLE 4. Negative binomial analysis controlling for age and gender in predicting marijuana use and marijuana-related consequences

Outcome	Predictor	Value/df	<i>b</i>	<i>t</i>	<i>p</i>
Marijuana use	Age	1.10	-0.18	-1.78	.074
	Gender		0.40	3.06	.002
	Harmonious passion		0.52	10.46	<.001
	Obsessive passion		0.37	4.52	<.001
Marijuana-related consequences	Age	1.00	-0.11	-1.02	.308
	Gender		-0.05	-0.32	.751
	Drinks per week		0.03	4.90	<.001
	Harmonious passion		0.25	3.87	<.001
	Obsessive passion		0.53	5.74	<.001

Note: *n* = 352.

($Z = -1.51$, $p = .13$). It is noteworthy that results were in the expected direction; moreover, the beta coefficient was more than twice as large for obsessive passion as it was for harmonious passion.

Discussion

To our knowledge, this is the first investigation to extend the motivational concepts of harmonious and obsessive passion to substance use. Consistent with expectations, we found that both harmonious and obsessive passions were related to greater alcohol and marijuana consumption across two independent samples of college students. After we controlled for drinks per week, obsessive passion and harmonious passion were associated with greater alcohol-related problems; however, the test of the difference between the passions demonstrated that the association with alcohol-related problems was greater for obsessive passion. Consistent with Study 1, Study 2 also evidenced that higher passion scores (harmonious and obsessive) predicted greater marijuana use. In addition, similar to Study 1, after we controlled for marijuana use, the test of the difference between the two passions indicated that harmonious passion was associated with increased alcohol and marijuana use to a greater extent than obsessive passion. However, contrary to expectations, there was not a significant difference between the two types of passion in predicting marijuana-related problems in Study 2.

The finding that harmonious passion was more strongly related to increased alcohol consumption and increased marijuana use than was obsessive passion might seem unexpected because harmonious passion is typically associated with beneficial outcomes, such as higher subjective well-being (Houlihan et al., 1999). One plausible explanation for the stronger association between harmonious passion and alcohol consumption is that it may be representative of alcohol-related experimentation among college students as they navigate through the often-difficult transition into full adulthood. Thus, harmonious passion might also be more consistent with social use. In addition, because individuals who are more harmoniously passionate tend to exert more control over their impulses, they may exhibit more respon-

sible behaviors toward consumption and suffer fewer negative consequences.

Similar to Study 1, the results from Study 2 found that harmonious passion predicted increased marijuana consumption to a greater extent than obsessive passion after we controlled for marijuana use. One possible explanation is that it may be easier to recall specific quantities of consumption of substances that are under one's control (e.g., consumed harmoniously). Conversely, although we did not ask students specifically about their inclinations toward heavy episodic drinking episodes, it is also possible that consumption as a result of unyielding, persistent urges (e.g., obsessive consumption) may result in more frequent heavy drinking sessions, in which it may be more difficult for participants to remember specifically what was consumed.

As anticipated, obsessive passion was significantly associated with alcohol-related problems after we controlled for drinking frequency. Conceptually, obsessive passion for alcohol is characterized by a perpetual, uncontrollable desire to drink (Vallerand et al., 2003). Therefore, it stands to reason that drinking to excess, despite being aware of the consequences, might result in greater alcohol-related problems. That is, students who exhibit obsessive passion may feel dominated by their uncontrollable desire for alcohol in college and consequently may be more susceptible to negative consequences and development of an alcohol use disorder.

One departure between the two samples in terms of the passions was that results differed in predicting problems for alcohol and marijuana use. Thus, although obsessive passion was found to be associated with greater alcohol-related problems, both harmonious and obsessive use appeared to be comparably associated with marijuana-related problems. However, because the findings were in the same direction as the alcohol-related results and the beta coefficient (Table 3) was more than twice as large for obsessive passion as it was for harmonious passion, one possibility for this effect may be due to the lack of power to observe this difference (the sample size was twice as large in Study 1 relative to Study 2).

Another possible explanation for this result may be the differences in social networks among drinkers versus mari-

juana users. Because marijuana is still illegal in many states, marijuana use may only be acceptable among certain groups, whereas drinking may be more widely accepted. Thus, some consequences (e.g., social) may be evident for harmonious marijuana users that would not be evident for harmonious alcohol users. Because of these possible negative consequences, harmoniously passionate marijuana users' perceptions of marijuana-related consequences might be similar to those of obsessively passionate marijuana users.

Moreover, marijuana users may be less likely to attribute problems to marijuana use, regardless of the nature of their passion. For instance, a study found that marijuana users perceived negative consequences of marijuana use as being less severe than nonusers did (Gaher & Simons, 2007). This belief is widely held, despite research that has demonstrated that excessive marijuana use can result in psychological dependence and produce a spectrum of withdrawal symptoms, including urges to use, insomnia, depression, anger, headaches, sweating, chills, and tremors (Budney et al., 2001; Jones, 1983). Because marijuana use is often not as mainstream as drinking, the psychological distance between obsessively passionate marijuana use and harmoniously passionate marijuana use may be less (e.g., pot smokers may view being obsessively and/or harmoniously passionate about marijuana with similar pride, akin to a badge of honor, despite their self-reported marijuana-related consequences) than the psychological distance between obsessive alcohol use and harmonious alcohol use (e.g., heavy drinkers may not be as proud of the negative consequences associated with their obsessively passionate drinking).

Overall implications of this research are that it provides a novel perspective on motivation for substance use and suggests that understanding the locus of young adult substance users' passion may be useful in identifying those at greater risk for encountering alcohol- and marijuana-related negative consequences. It appears that those with obsessive passion may be at most risk for problems; however, those with harmonious passion may also be at risk because their passion for substance use may lead to increased consumption, which in turn may lead to additional problems. These findings may hold important implications in terms of providing a quick, easy, and cost-effective assessment tool to inform alcohol and marijuana interventions and prevention programs for incoming freshmen and may also be potentially useful for individuals seeking clinical assistance with substance use.

Early identification of the individual factors that promote substance use has the potential to be a dynamic therapeutic tool in that it allows treatment providers to address the motivational underpinnings of substance use rather than the symptoms or consequences. In addition, instruction in protective behavioral strategies for reducing harmful substance use may be particularly helpful for individuals with identified obsessively passionate orientations, given that those individuals appear to be at higher risk for negative

consequences. Thus, our findings suggest that understanding college students' passion for alcohol or marijuana use may assist in the identification of those at risk for greater negative consequences and the potential development of a substance use disorder and who therefore might benefit most from preventative intervention programs.

Limitations and future directions

In light of this investigation's strengths, some limitations must be considered. First, a nonclinical, college sample of alcohol and marijuana users participated in the current investigations. Thus, the present results may not be generalizable to non-college student samples or populations with developed substance use disorders, as there are likely important differences between these populations. Future research should investigate the degree to which the passion constructs accurately reflect patterns of pathological behavior in a clinical population, which would provide valuable information regarding the utility of this construct.

Second, participants' alcohol or marijuana consumption, obsessive and harmonious passion, and negative consequences were assessed solely through self-report measures, which may be subject to participant report bias. Future studies should consider additional measures, incorporating collateral reports and behavioral tasks that are less likely to be influenced by such bias.

One major limitation of both studies was that they were correlational. Therefore, causality cannot be inferred. These measures were only assessed at specific time points as part of larger studies, and therefore, longitudinal analysis could not be conducted. Future research should conduct studies over time to investigate if harmonious and obsessive passion for alcohol and marijuana change or remain relatively stable over time. If such fluctuations in passion do exist, researchers should examine how these changes relate to substance use and negative consequences. In addition, whereas Study 1 used baseline data, Study 2 used posttreatment data. We would not necessarily expect associations between passion and marijuana use or problems to change as a function of treatment, but we cannot rule this out.

It is also worth considering that the two studies used different outcomes for use. Study 1 used number of drinks per week (i.e., quantity), whereas Study 2 used number of days marijuana was used in the past 90 days (i.e., frequency). Although these are two different kinds of metrics, we would not necessarily expect this to affect results. Unlike alcohol consumption, which can be described in specific units that participants could readily understand and report on, there is no comparable standardized measure of the strength and volume in a unit of marijuana. Furthermore, there is a strong association between quantity of alcohol consumed and subjective effects, whereas for marijuana, subjective effects are less dependent on dose (Ramesh et al., 2013). We would

therefore expect frequency of use for marijuana to be more similar to amount of alcohol consumed than to frequency of alcohol consumption.

In closing, it is important to note that we view these combined studies as a preliminary investigation, which requires additional research to more fully explore the passion constructs in the realm of substance use. Further work is still needed to better elucidate the nature of these relationships. For instance, other individual differences (e.g., personality traits, affective states, coping motives, and even general needs satisfaction) may serve as potential mediators or moderators in these relationships. Future research could address whether the two types of passion might require differential intervention strategies.

Conclusion

The current studies extend the concepts of harmonious and obsessive passion to alcohol- and marijuana-related behaviors, which many young adults engage in despite the negative consequences. Across two samples, the construct of passion was found to be productive in the clarification of alcohol and marijuana use and negative consequences among college students. Results suggest that the motivational perspective of passion, particularly that of obsessive passion, may be useful in identifying those more prone to develop alcohol-related problems. By contrast, both harmonious and obsessive passions may be comparably predictive of marijuana-related problems.

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