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# Passion for academics and problematic health behaviors

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Passion for Academics and Problematic Health Behaviors

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A Project Presented to  
the Faculty of the Undergraduate  
College of Health and Behavioral Studies  
James Madison University

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in Partial Fulfillment of the Requirements  
for the Degree of Bachelor of Bachelor of Arts

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by Alexander Timothy Bureau

May 2014

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Accepted by the faculty of the Department of Psychology, James Madison University, in partial fulfillment of the requirements for the Degree of Bachelor of Bachelor of Arts.

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### **Abstract**

According to the Dualistic Model of Passion, passion for an activity entails valuing, liking, and spending time on an activity. The Dualistic Model also posits there are two types of passion for activities: harmonious passion, which is typically related to positive psychological outcomes, and obsessive passion, which is typically related to negative psychological outcomes. The purpose of the present study was to examine the possible links between college students' passion for academic activities and unhealthy behaviors including excessive drinking and exercising; not getting enough sleep; and having disordered eating. Based on previous research, we predicted that obsessive passion would be positively associated with problematic health behaviors, and harmonious passion would be negatively associated with the same health behaviors. We found that obsessive passion positively predicted scores on measures of excessive drinking, exercise addiction, and disordered eating but was unrelated to a measure of sleep deprivation. Harmonious passion, in contrast, was negatively associated with excessive drinking behavior and sleep deprivation but was unrelated to exercise addiction and disordered eating. These findings provide support for the Dualistic Model of Passion by showing that students who are obsessively passionate about their activities are more likely to engage in problematic health behaviors, and thus may experience more negative outcomes, than students who are harmoniously passionate about their academics.

## **Introduction**

Most people have an activity about which they are passionate (Vallerand et al., 2003). Some people like to play sports or engage in other physical activities like running or biking. Some people are passionate about music and find happiness expressing themselves through their instrument or through another artistic medium. Still others are passionate about reading or passionate about academics. In short, there are a seemingly infinite number of activities for which someone could have passion. But what exactly is “passion,” and is it really as important for “the good life” as some people say it is? Although many people have passions in their lives, psychological researchers have largely ignored the topic of passion for activities until recently.

### **Passion: A Brief Philosophical History**

Philosophers and laypeople alike have pondered the meaning of passion for years. For example, Spinoza, a Dutch philosopher from the 17<sup>th</sup> century, made a distinction between passions and actions. Spinoza suggested that people choose their own actions, which are caused by aspects of people’s own nature. Passions, on the other hand, occur when the cause of a behavior is external. Spinoza claimed that people should avoid passions. That way, any action or change in someone’s life would be the result of something inside the person, not something that happened to him or her. To Spinoza, then, having passion is undesirable (Nadler, 2012).

More interesting views of passion came from the philosophers David Hume and Immanuel Kant. Hume claimed that passion is the greatest motivating factor for engaging in any action in one’s life; it is so powerful that it even trumps reason. According to Hume, passions are also the determining factor for an individual’s morality. In contrast with Hume, Kant, much like Spinoza, saw passions as more dangerous. To Kant, passions were long-lasting and persistent

urges to engage in certain activities. Thus, to Kant, people should pursue apathy and self-mastery instead of pursuing the urges that their passion presents (Denis, 2012).

### **Passion for Activities**

More recently, psychological researchers have begun to examine passion and more specifically, passion for activities (as opposed to romantic passion). Vallerand and his colleagues (2003) were the first to examine the construct of passion for activities. They defined passion for an activity as, “a strong inclination toward an activity that people like, that they find important, and in which they invest time and energy” (p. 757). Vallerand et al. also suggested that there are two distinct types of passion for activities: harmonious passion and obsessive passion.

Harmonious passion is a good type of passion where a person feels as if he or she has control over an activity and that produces positive psychological outcomes. Obsessive passion, on the other hand, creates the feeling of being controlled by one’s passionate activity and can arouse negative psychological outcomes.

Vallerand et al. also developed the Passion Scale, which measures a person’s passion for an activity as well as the two distinct types of passion. Vallerand et al. first required participants to think of an activity that they considered, “very close to their heart” (p. 758). After picking the activity, the participants answered 34 initial questions about the activity. A factorial analysis reduced the number of scale items from 34 to 14, seven items related to harmonious passion and seven items related to obsessive passion; it also included four items used to assess overall passion for an activity. (The Passion Scale has since been reduced to 16 total items, four for assessing overall passion and six items each for harmonious passion and obsessive passion; Stenseng, Rise, & Kraft, 2011; see appendix A). Since Vallerand et al.’s early studies, a growing

body of evidence has provided support for the validity and reliability of the Passion Scale (see Marsh et al., 2013).

### **The Development of Passion**

Vallerand (2008) proposed that three factors influence whether an activity ultimately becomes a passion: (a) activity selection, (b) activity valuation, and (c) whether a person internalizes the activity as part of his or her identity. Vallerand defined activity selection as the preference for an activity over other options. He also suggested that as long as “the person feels that such selection reflects true choice and interests and is consonant with one’s identity, it should promote the development of passion” (Vallerand, 2008, p. 8). The second factor that determines whether an activity becomes a passion is valuation of the activity, which refers to a person’s opinion of how important an activity is: If an activity is valued, it is more likely to become a passion.

The third factor that determines whether an activity becomes a passion is whether the activity is internalized into a person’s self concept. If the activity is internalized—if a person comes to adopt the rules and values surrounding an activity—a person is more likely to become passionate about the activity. Moreover, when people are passionate about an activity, they do not merely view the activity as interesting but rather as a part of who they are, a part of their self-concept. Thus, instead of saying, “I love playing hockey,” someone who is passionate about hockey would say, “I am a hockey player.”

Vallerand et al. (2003) also proposed that harmoniously passionate and obsessively passionate individuals internalize their passions differently. Harmoniously passionate people experience an autonomous internalization, which means that the person is motivated and chooses freely to engage in the behavior. As a result, the activity takes up appropriate, but not



overwhelming, space in the person's self concept. Moreover, because of the autonomous control involved, harmoniously passionate people can choose when and when not to engage in their activity—it is in harmony with other aspects of their life. In comparison, obsessive passion results from a controlled internalization. It is considered controlled because there are external contingencies in place that drive the person to engage in the activity. For example, external contingencies could include interpersonal pressure from parents or peers or intrapersonal pressure, such as when a person's self-esteem is tied to an activity. Because of this external control, the activity comes to occupy an overwhelming space in a person's self-concept and creates an uncontrollable compulsion to engage in the activity, often at the expense of other activities in a person's life (Przybylski, Weinstein, Ryan, & Rigby, 2009).

### **Passion and Psychological Outcomes**

In addition to the ways in which they are internalized, harmonious passion and obsessive passion are different in many other important ways. For example, Vallerand et al. (2003, Study 1) found that harmonious passion was related to increased flow (the psychological experience of being completely immersed in an activity) while people engaged in their preferred activity and that harmonious passion was also correlated with less disappointment when people were unable to engage in the activity. In contrast, obsessive passion, although related to happiness during activity engagement, predicted less flow during activity engagement and more disappointment when people were restricted from engaging in the activity. Vallerand et al. (2003, Study 2) also found that football players with higher harmonious passion also indicated experiencing higher positive affect over the course of a football season; in contrast, higher obsessive passion scores predicted higher negative affect over the same time period.

In a subsequent study, Philippe, Vallerand, and Lavigne (2009) categorized participants as non-passionate, harmoniously passionate, or obsessively passionate individuals (see Philippe et al.'s study for more detail on categorizing participants as either harmoniously, obsessively, or non-passionate). Philippe et al. found that harmoniously passionate individuals had significantly higher subjective well-being than obsessively and non-passionate individuals, who were no different from one another. In a second study, Philippe et al. found that harmoniously passionate individuals experienced increases in subjective well-being over a 1-year period while obsessively passionate individuals did not.

It also appears that the type of passion that one has for an activity is related to one's self-esteem. Mageau, Carpentier, and Vallerand (2011) examined the relations among passion, self-esteem, and performance. In this study, Mageau et al. investigated whether those with higher obsessive passion scores for playing a card game relied on their performance in the game to establish self-esteem. The researchers found that the higher the obsessive passion scores, the more the players' self-esteem fluctuated along with changes in their performance. Specifically, when performance in the activity was poor, self-esteem decreased. Those who had higher harmonious passion scores, on the other hand, experienced no change in self-esteem as a function of their performance.

In addition, people who are obsessively passionate tend to have lower life satisfaction after they fail at their passionate activity, but higher life satisfaction following a success (Lafreniere, St-Louis, Vallerand, Donahue, 2012). Those who are harmoniously passionate do not experience these swings in life satisfaction following successes or failures. As noted in previous research, people with obsessive passions are more invested in their self-concept (which largely involves their passionate activity); their happiness is more likely to fluctuate with failures

or with successes as opposed to those with a harmonious passion, who will be relatively unaffected by any particular performance, because their self-concept is not as strongly tied to their passion.

Researchers have also found that the relations between passion and various psychological outcomes may be context dependent. Amiot, Vallerand, and Blanchard (2006) conducted a study in which they examined passion in hockey players who were trying out for an elite junior hockey team. Amiot et al. first identified whether players were harmoniously or obsessively passionate for hockey and then measured their levels of happiness at two times: (a) immediately after they found out if they earned a spot in the more competitive league and (b) after they had been playing in the more or less competitive league for 2 months. They found that players who made the more competitive league were happier immediately afterwards than players who did not make the team, regardless of whether they were harmoniously or obsessively passionate. Amiot et al. found, however, that players who were obsessively passionate for hockey did better in the more competitive league and were happier 2 months later. When obsessive players earned a spot in the less competitive league, however, they were less happy 2 months later. In contrast, players who were harmoniously passionate were less happy in more competitive leagues and happier in the less competitive league. Amiot et al. suggested that players who were obsessively passionate—those who tend to take an inflexible approach to engaging in their passionate activity—were better equipped to handle the rigorous amount of work that the advanced leagues required of them.

### **Passion and Behavioral Outcomes**

To date, most research on passion has aimed at how the construct is related to different psychological outcomes (e.g., happiness, subjective well-being, self-esteem). Recent research,

however, suggests that passion for activities may impact not only psychological experiences but also more behavioral outcomes.

In one relevant study, Vallerand et al. (2003, study 3) observed cyclists. They found that in the winter (when cycling is much more dangerous), those who had higher harmonious passion scores for cycling were more likely to abstain from riding when the weather conditions were poor. Cyclists with higher obsessive passion scores, on the other hand, were more likely to cycle in less-than-ideal conditions. Similarly, Rip, Fortin, and Vallerand (2006) examined passion and injury in dancers. The researchers found that higher harmonious passion scores for dance suffered less from acute injuries and, when they were injured, were more conscious of their recovery efforts. Students who were more harmoniously passionate were also more likely to engage in subsequent behaviors that prevented further injuries. The more obsessively passionate students, on the other hand, suffered longer from chronic injuries because they pushed themselves to continue dancing even though they were injured. Stephan, Deroche, Brewer, Caudroit and Le Scanff (2009) reported a similar outcome in long-distance runners; runners who were more obsessively passionate were more likely to report injuries than runners who were harmoniously passionate.

Passion seems to also be related to aggressive behaviors in sports. Donahue, Rip, and Vallerand (2009) investigated whether passion for a certain sport (in this case basketball) was associated with aggressive behavior. In Study 1, the researchers measured players' self-reported levels of aggression and how these scores related to passion for basketball. Players who were categorized as harmoniously passionate were less aggressive than players who were obsessively passionate about basketball. In Study 2, Donahue et al. examined how aggressive the players were when their self-concept of their basketball ability was either supported or challenged. To

test this, the researchers randomly assigned both obsessive and harmoniously passionate athletes to either a self-affirming or a self-threat condition. In the self-affirmation condition, the athletes had to list different ways in which they were good players; the self-threat condition required the athletes to list ways in which they were bad players. The athletes then had to consider different hypothetical actions that varied in their level of aggression and pick which one they would likely do when put into a similar situation. The researchers found that when their self-concept was threatened, the obsessively passionate players were much more likely than harmoniously passionate players to report that they would engage in aggressive behaviors. In contrast, when their self-concept was not threatened (i.e., when they identified ways in which they were good basketball players), obsessive players were no more likely than the harmoniously passionate players to choose an aggressive action.

### **Passion for Academics and Health Behavior**

To date, research has examined the relation between passion for activities and a number of psychological and behavioral outcomes. There is little research, however, on the behaviors of college students and how they are related to passion for activities and, more specifically, to passion for academics. The purpose of the current research was to examine whether passion for academic activities (e.g., going to class, doing homework) may be related to certain problematic health behaviors.

There are reasons to believe that passion for academics might be predictive of certain problematic health behaviors in college students. First, research has shown that passion is related to stress and other types of negative affect. Gustafsson, Hassmen, and Hassmen (2011), for example, found that obsessively passionate athletes scored higher on measures of perceived stress. Also, Vallerand and colleagues (2003, 2006) showed that being obsessive passion scores

for an activity predicted increases in negative affect. There could be a possible link between passion, stress or negative affect, and problematic health behaviors in college students. Perhaps being obsessively passionate about academic activities leads a person to be stressed or generally upset, which in turn leads to engaging in these problematic health behaviors.

Research has also shown that stress and negative affect are predictive of negative health behaviors. For example, Park, Armeli, and Tennen (2004) showed that students drank more alcohol on days they perceived as being more stressful. Perkins (1999) also found that stress related drinking was one of the motivating factors for drinking in undergraduate students. In addition, stress-related drinking becomes even more prevalent after college and also more problematic for people (e.g., Lanier, Nicholson, & Duncan, 2001).

Smoking, sleep disorders, and eating disorders are also related to stress in college students. Nichter, Nichter, Carkoglu, and the Tobacco Etiology Research Network (2007) found that smoking was an indicator of stress. Researchers have also found that a lower sense of subjective well-being and negative affect are good predictors of smoking in college students (Magid, Colder, Stroud, Nichter, Nichter, & TERN Members, 2009; Patterson, Lerman, Kaufmann, Neuner, & Audrain-McGovern, 2004). Similarly, a study by Galambos, Vargas Lascano, Howard, and Maggs (2013) showed that stress was related to sleep issues in college students. Finally, students who use avoidance strategies to deal with stress and those who perceive themselves as being poor at coping with stress are at a higher risk of developing disordered eating with the onset of new stressors (MacNeil, Esposito-Smythers, Mehlenbeck, & Weismoore, 2012).

Given the aforementioned links between passion and stress and stress and unhealthy behaviors in college students, it seems reasonable to assume that passion for academics might be

predictive of unhealthy behaviors. Consider students who are harmoniously passionate about their academic studies. As Vallerand and colleagues (2003, Study 1) have shown, people with higher harmonious passion scores tend to be happier both during and after engaging in the passionate activity. Moreover, because harmonious passion does not take up an overly large part of people's self-concept, harmoniously passionate students may be less concerned about doing their work to perfection (because less-than-perfect academic outcomes should not damage their self-concept). Those students with high obsessive passion scores, on the other hand, are likely to be much more concerned about their grades and with their work being perfect (because their self-concept of "great student" is likely to be damaged by less-than-perfect outcomes). In short, the stress involved in being "perfect" might lead obsessively passionate students to engage in unhealthy behaviors as a way either to maintain perfection (e.g., undesirable sleeping patterns) or to alleviate the stress that might come with trying to maintain perfection (e.g., drinking, smoking). Thus, the purpose of the present study is to examine if harmonious and obsessive passion for academic activities and for one's major predict engagement in problematic health behaviors including excessive smoking, drinking, and exercising; not getting enough sleep; and having disordered eating. Based on previous research (Donahue et al., 2009; Przybylski et al., 2009; Rip et al., 2006; Vallerand et al., 2003), I predict that obsessive passion scores will predict increases in problematic health behaviors. In contrast, harmonious passion scores will be negatively associated with these same measures.

## Method

### Participants

The participants in this study were 502 students in several undergraduate psychology courses at James Madison University. There were 417 women, 82 men, one transgender, and one student who identified as “Other” in the sample (one student did not list his or her gender). Of the respondents, 256 were freshman, 179 were sophomores, 55 were juniors, 10 were seniors, and 2 were listed as “Other.” The median age of the sample was 19 years old. Students completed the survey for partial course credit.

### Materials and Procedure

Our online survey was posted on a participation pool website for undergraduate psychology courses. Students who clicked on our study were directed to an online survey that contained two copies of the Passion Scale (one for academic activities in general and one for major activities), the Fagerstrom Test for Nicotine Dependence, the Michigan Alcohol Screen Test, the Exercise Addiction Inventory, the Epworth Sleep Scale, the Eating Attitudes Test, and demographic information (gender, age, year in school, ethnicity, academic minor, cumulative GPA, major GPA, number of credits being taken in the current semester, employment status, Greek-life affiliation, and other extracurricular activities beyond Greek life).

**Passion.** The Passion Scale is a valid and reliable 16-item self-report questionnaire that measures overall passion for an activity along with obsessive and harmonious passion (Marsh et al., 2013; Vallerand et al., 2003). The first four items on the Passion Scale assess subjects’ overall passion for an activity and include such statements as “I spend a lot of time doing \_\_\_\_\_” and “\_\_\_\_\_ is a passion for me.” The level of passion is determined by finding the average score on the first four items. The two subscales, comprised of the next 12 items (six for harmonious



passion and six for obsessive passion), include questions such as: “I have difficulties controlling my urge to do \_\_\_\_\_,” or “The new things that I discover doing \_\_\_\_\_ allows me to appreciate it even more.” Respondents in the present study answered the Passion Scale twice, once while thinking about their “typical academic activities” and once while thinking about activities done “for your major.” They answered each item about their academic activities and about their major on a seven-point Likert scale ranging from 1 (*Do not agree at all*) to 7 (*Completely agree*). On the Passion Scale for academic activities, the Cronbach’s alpha for the first four items was 0.77, and the Cronbach’s alphas for the harmonious and obsessive subscales were 0.85 and 0.73, respectively. On the Passion Scale for one’s major, the Cronbach’s alpha for the first four items was 0.81, and the Cronbach’s alphas for the harmonious and obsessive subscales were 0.89 and 0.82, respectively.

**Nicotine dependence.** The Fagerstrom Test for Nicotine Dependence (FTND) is a reliable and valid six-item self-report questionnaire that assesses a person’s dependence on nicotine (Heatherton, Kozlowski, Frecker, & Fagerstrom, 1991; Payne, Smith, McCracken, McSherry, & Antony, 1994). Three of the six questions (Questions 2, 5, and 6) are either answered “Yes” or “No.” On these items, an answer of “Yes” is given one point and an answer of “No” is given a 0. Question 1, which asks about smoking upon waking, has multiple answer choices that include: “Within 5 minutes,” which is given a weight of three points; “5-30 minutes,” which is given two points; and “31-60 minutes,” which is worth one point. Question 3 has multiple answer choices that include: “The first in the morning,” which is weighted as one point, and also the answer “Any other,” which has no points attached to it. Finally, Question 4 also has answer choices that are: “10 or less,” which is worth zero points; “11-20,” which is worth one point; “21-30,” which is given two points; and “31 or more,” which is given three

points. Participants who have a score of 1 or 2 are classified as having a low dependence on nicotine, people who score from 3 to 7 on the FTND are classified as being in the low-to-moderate range of nicotine dependence, and a score of 8 or higher is considered high dependence. The FTND is a valid and reliable measure of nicotine dependence (Heatherton et al., 1991; Payne et al., 1994). (We did not measure Cronbach's alpha for this measure because we did not include the FTND in the final analyses; see below.)

**Alcohol dependence.** The Michigan Alcoholism Screen Test (MAST) is a 25-item questionnaire that is used to assess alcohol abuse and dependence (Selzer, 1971). The MAST is widely used and has demonstrated validity and reliability (Gibbs, 1983). For each item, respondents answer either "Yes" or "No." Each of the items is weighted differently. Respondents get 1 point if they answer "Yes" to items 3, 5, 7, 10, and 17, and 2 points if they answer "Yes" to items 1, 2, 11-16, 18-19, or 22-25. Two points are also given if the participant answers "No" to items 4, 6, or 8. Five points are given for answering "Yes" to items 9, 20, or 21. A total score of 5 or more is considered to be indicative of problematic drinking or alcohol dependence. We obtained a Cronbach's alpha of 0.74 for the MAST.

**Exercise addiction.** The Exercise Addiction Inventory (EAI) is a valid and reliable 6-item self-report measure that is used to determine if people are at risk for exercise addiction (Griffiths, Szabo, & Terry, 2005; Terry, Szabo, & Griffiths, 2004). The EAI measures the salience, conflict, mood modification, tolerance, withdrawal, and relapse due to exercise in a person's life. Responses fall on a 5-point Likert scale where 1 is "Strongly Disagree," and 5 is "Strongly Agree." People who score in the range of 0-12 are considered to have few or no symptoms of exercise addiction. Scores ranging from 13-23 suggest some symptoms of exercise

addiction. A score above 24 is considered “at risk for exercise addiction.” We measured a Cronbach’s alpha of 0.76 for the EAI.

**Sleep deprivation.** The Epworth Sleepiness Scale (ESS) is an 8-item self-report scale that measures daytime sleepiness (Johns, 1991). The scale has established reliability and validity (Johns, 1991, 1992). The ESS asks participants to rate their chances of falling asleep during everyday situations. These situations include: watching TV or reading, lying down in the afternoon, sitting and talking, and so on. The participants have to rate their chances of sleeping on a scale from 0-3, where 0 is “would never doze or sleep” and 3 is “high chance of dozing or sleeping.” A score of 10 or more indicates that the person is “sleepy,” and a score of 18 or more indicates “very sleepy.” The Cronbach’s alpha for the Epworth in this study was 0.67.

**Disordered eating.** The Eating Attitudes Test (EAT-26) is a 26-item self-report test that measures anorexia nervosa symptoms (Garner & Garfinkel, 1979). The EAT-26 has been validated in many different samples and with the DSM-IV (Garner & Garfinkel, 1979; Mintz & O’Halloran, 2000). The EAT-26 has three subscales: dieting, bulimia and food preoccupation, and oral control (although in the present study, we did not examine the subscale scores). For each item, a participant has to answer how often he or she engages in a certain eating behavior. The answers fall on a 6-point scale ranging from “Always” to “Never.” For questions 1-25, the answer “Always” gets a score of 3, “Usually” gets 2, “Often” gets 1, and the final three answers get a score of 0. Question 26 is reverse coded. The EAT-26 measure also includes measures of BMI (Body Mass Index) and behavioral questions regarding other eating/dieting behaviors. A score of 20 or more is indicative of problematic eating. We obtained a Cronbach’s alpha of 0.91 for the EAT.

## Results

### Preliminary Analyses

First, because of their small numbers, and because we found year in school to be related to several of our measures (see below), we chose to eliminate students who indicated their year in school as being either “senior” ( $n = 10$ ) or “other” ( $n = 2$ ). In addition, because a relatively low number of students reported being smokers ( $n = 18$ ) we chose not to include the Fagerstrom Test for Nicotine Dependence in our subsequent analyses.

Next, we examined whether any of our demographic measures were related to our criterion variables. We found that scores on the MAST and on the EAT differed as a function of a Greek-life affiliation. Greek members scored lower ( $M = 5.91$ ) than non-Greek members ( $M = 6.74$ ) on the MAST ( $p = .03$ ) but higher ( $M = 11.92$ ) than non-Greek members ( $M = 9.18$ ) on the EAT ( $p = .01$ ).

We also found that year in school was significantly related to scores on the EAT ( $p = .04$ ) and to scores on the Epworth ( $p = .009$ ). On the EAT, freshman ( $M = 10.55$ ) had significantly higher scores ( $p = .01$ ) than juniors ( $M = 6.82$ ), who, in turn, had marginally lower scores ( $p = .06$ ) than sophomores ( $M = 9.70$ ). On the Epworth, we found that freshmen ( $M = 10.55$ ) had significantly higher ( $p = .02$ ) than sophomores ( $M = 9.75$ ) and that freshman had significantly higher scores ( $p = .01$ ) than juniors ( $M = 9.18$ ). We also found that cumulative GPA was significantly and positively correlated with scores on the EAT ( $r = .12, p = .007$ ). Finally, we found gender differences on the EAT and on the Epworth. On the EAT, women ( $M = 10.46$ ) scored significantly higher ( $p < .001$ ) than men ( $M = 6.41$ ); on the Epworth, women ( $M = 10.38$ ) also scored significantly higher ( $p < .001$ ) than men ( $M = 8.75$ ).

Tables 1 and 2 show the means and the standard deviations of the variables in the current study, along with the bivariate and partial correlations (partial correlations are italicized) among them. First, we found that students' passion scores (both for academics and for major) were positively related to both harmonious and obsessive passion (for academics and major), providing support for the notion that both harmonious and obsessive passion entail liking, valuing, and spending time on an activity (i.e., they are both types of passion; see Vallerand et al., 2003). Passion scores were also negatively related to scores on the MAST and on the Epworth. In addition, passion for academics was positively related to scores on the EAI, and passion for one's major was positively related to scores on the EAT.

We also found that obsessive and harmonious passion (for both academics and major) were positively and significantly correlated. As such, the following correlations are partial correlations where we controlled for each type of passion. A few interesting patterns emerged in the data. First, obsessive passion for academics was significantly and positively correlated with scores on the MAST, the EAI, and the EAT. On the other hand, harmonious passion for academics was significantly and negatively correlated with MAST scores. The same pattern emerged when examining students' obsessive and harmonious passion for their majors. Obsessive passion for major was significantly and positively correlated with scores on the MAST, the EAI, and the EAT. Harmonious passion for major, in contrast, was significantly and negatively correlated with the scores on the MAST.

To examine further the relations between the two types of passion and our primary criterion variables, we ran hierarchal regression analyses with Greek affiliation, year in school, gender, and cumulative GPA entered as controls; the two types of passion entered as predictors; and scores on the MAST, EAI, EAT, and Epworth entered as criterion variables.

### **Harmonious and Obsession Passion for Academics**

**MAST.** For scores on the MAST (see Table 3), obsessive and harmonious passion accounted for an additional 3.5% of the variance over and above the control variables ( $p = .002$ ). The Beta weights showed that harmonious passion for academics ( $\beta = -.16, p = .002$ ) was negatively related to scores on the MAST, whereas obsessive passion for academics ( $\beta = .15, p = .008$ ) was positively related to scores on the MAST.

**EAI.** For scores on the EAI, the inclusion of harmonious and obsessive passion for academics accounted for an additional 3.6% of the variance over the control variables ( $p < .001$ ). The Beta weights showed that only obsessive passion for academics ( $\beta = .19, p < .001$ ) predicted scores on the EAI. Harmonious passion, in contrast, did not significantly predict changes in the EAI ( $\beta = .002, p = .97$ ).

**Epworth Sleep Scale.** On the Epworth Sleep Scale, including harmonious and obsessive passion for academics accounted for an additional 1.6% of the variance over the control variables ( $p = .02$ ). The Beta weights ( $\beta = -.13, p = .007$ ) showed that harmonious passion was negatively related to scores on the Epworth. In contrast, obsessive passion was not significantly related to Epworth scores ( $\beta = .07, p = .15$ ).

**EAT.** For the EAT, harmonious and obsessive passion for academics accounted for an additional 2.7% of the variance over the control variables ( $p = .001$ ). The Beta weights showed that obsessive passion for academics ( $\beta = .17, p < .001$ ) significantly predicted increasing scores on the EAT. In contrast, harmonious passion was not significantly related to the EAT ( $\beta = -.04, p = .37$ ).

**Harmonious and Obsessive Passion for Major**

**MAST.** For scores on the MAST (see Table 4), obsessive and harmonious passion accounted for an additional 4.3% of the variance over and above the control variables ( $p = .001$ ). The Beta weights showed that harmonious passion for academics ( $\beta = -.20, p = .001$ ) was negatively related to scores on the MAST, whereas obsessive passion for academics ( $\beta = .12, p = .04$ ) was positively related to scores on the MAST.

**EAI.** For scores on the EAI, the inclusion of harmonious and obsessive passion for major accounted for an additional 1.8% of the variance over the control variables ( $p = .014$ ). The Beta weights showed that only obsessive passion for academics ( $\beta = .14, p = .004$ ) predicted scores on the EAI. Harmonious passion, in contrast, did not significantly predict changes in the EAI ( $\beta = -.04, p = .43$ ).

**Epworth Sleep Scale.** On the Epworth Sleep Scale, inclusion of harmonious and obsessive passion for major accounted for an additional 2.1% of the variance over the control variables ( $p = .008$ ). The Beta weights showed that harmonious passion ( $\beta = -.14, p = .004$ ) was negatively related to scores on the Epworth. In contrast, obsessive passion was not significantly related to Epworth scores ( $\beta = .08, p = .10$ ).

**EAT.** For the EAT, inclusion of harmonious and obsessive passion for academics accounted for an additional 2.9% of the variance over the control variables ( $p = .001$ ). Beta weights show that obsessive passion for academics ( $\beta = .16, p = .001$ ) significantly predicted increasing scores on the EAT. In contrast, harmonious passion was not significantly related to the EAT ( $\beta = .04, p = .45$ ).

## Discussion

The purpose of this study was to assess if student's passion for their academic activities and passion for their major were related to problematic health behaviors, including drinking, excessive exercise, not getting enough sleep, and disordered eating (we also collected data on smoking but excluded this information based on the small number of student who reported being smokers). In line with previous research, we expected that obsessive passion would be positively associated with these measures of problematic health behaviors and that harmonious passion would be negatively associated with scores on these measures (Vallerand et al., 2003; Vallerand, 2008). We found that our hypotheses were partially supported. Obsessive passion for academic activities and for one's major predicted increases in problematic drinking (scores on the MAST), problematic exercising (scores on the EAI), and problematic eating (scores on the EAT); obsessive passion, however, did not predict problematic sleeping (scores on the Epworth). On the other hand, harmonious passion for academic activities and for one's major predicted decreased scores on the MAST and on the Epworth but did not predict scores on the EAI or the EAT.

Our study provides support for previous studies that have examined how passion is related to various psychological outcomes. In their Dualistic Model of Passion, Vallerand et al. (2003) predicted that harmonious passion should typically be related to positive psychological outcomes, whereas obsessive passion should typically be related to more negative outcomes. Numerous studies have supported Vallerand et al.'s model of passion. Obsessive passion for an activity tends to be associated with negative psychological outcomes such as: low satisfaction with life after failing in one's passionate activity (Lafremiere et al., 2012), low needs satisfaction (Przybylski, et al., 2009), negative affect (Vallerand et al., 2003, Study 2), less experience with flow and more disappointment (Vallerand et al., 2003, Study 1), and lower levels of subjective



well-being (Philippe et al., 2009). In contrast, harmonious passion tends to be associated with more positive outcomes: stable life satisfaction while following a failure in one's passionate activity (Lafremiere et al., 2012), higher satisfaction of needs (Przybylski, 2009), positive affect and more flow experiences (Vallerand et al., 2003), and more subjective well-being (Philippe et al., 2009).

The Dualistic Model of Passion also applies to passion and more objective (i.e., behavioral) outcomes. For example, Vallerand et al. (2003, Study 3) showed that obsessively passionate cyclists were more likely to ride their bike in dangerous weather conditions than harmoniously passionate cyclists. In addition, Rip et al. (2006) found that obsessively passionate dancers who were injured were more likely to continue to practice while being injured than harmoniously passionate dancers. Together, these previous studies show that obsessive passion for an activity tends to be related to negative outcomes and harmonious passion for an activity is related to positive outcomes. Similarly, we found that obsessive passion for academic activities and for one's major was positively associated with excessive drinking and exercising and with disordered eating. In contrast, harmonious passion was negatively associated with excessive drinking and sleep deprivation. Therefore, our findings fit into Vallerand et al.'s general framework in which obsessive passion for an activity is related to more negative outcomes and that harmonious passion for an activity is related to more positive outcomes. In short, these results suggest that to understand why some students may be more prone to engage in problematic health behaviors, it is important to examine their harmonious and obsessive passion for academics. Moreover, of the two types of passion, obsessive passion for academics is most likely to be predictive of potentially serious health behaviors.

Our study also expands on previous research in at least two important ways. First, previous studies on passion for activities have focused mostly on psychological outcomes such as changes in cognition or changes in affect (see Vallerand ,2008, for a review). In contrast, fewer studies have examined how passion for an activity is related to more objective, or behavioral, outcomes. In one study, Rip et al. (2006) examined that obsessively passionate dancers were more likely practice dancing despite being injured; whereas harmoniously passionate dancers were less likely to dance while being injured. In addition, Vallerand et al. (2003, Study 3) found that obsessively passionate cyclists were more likely to ride their bikes in dangerous weather conditions and harmoniously passionate cyclists were less likely to ride in the same hazardous conditions. In the present study, we examined how student's harmonious and obsessive passion for academic activities and for their majors was related to more objective outcomes such as excessive drinking, disordered eating, exercise addiction, and sleep problems. As noted, we found that both types of passion, harmonious and obsessive, differentially predicted at least one (and sometimes more) of our measures. Thus, our results support previous research suggesting that passion for an activity not only predicts changes in psychological outcomes, but that it might also lead to changes in behavioral outcomes as well.

Second, few existing studies have examined how passion for one activity affects behavioral outcomes that are not necessarily related to engagement in the passionate activity. More often, studies have examined how passion for an activity is related to various outcomes within the purview of that activity. In Vallerand et al.'s (2003, Study 3) study, for example, passion for cycling was examined along with the problematic behavior of cycling during risky weather conditions. Similarly, Vallerand et al. (2007, Study 2) examined how passion for

studying was related to exam performance and found that harmonious passion was related to higher scores on an exam in a psychology class.

A few studies, however, have examined how passion for one activity affects activities beyond the passionate activity. Seguin-Levesque, Laliberte, Pelletier, Blanchard, and Vallerand (2003), for example, conducted a study that examined whether passion for Internet use was related relationship outcomes. Seguin-Levesque et al. found that obsessive passion for Internet use was related to lower motivation towards one's relationship and also to a lower quality of romantic relationship. In contrast, harmonious passion was related to more motivation for the relationship and a higher quality of relationship. Our results thus support the notion that passion for one activity can produce changes in behavior that likely "spread out" and affect other events in a person's life. Moreover, ours is the first study of which we are aware that examined passion for different academic activities (i.e., academics, in general, and one's major, more specifically) and how it is related to various health behaviors. Specifically, our results suggest that students who are passionate about their academics may be more likely to engage in problematic health behaviors, but only if they approach their academics with an obsessive passion.

So, why is it that obsessive passion would be more likely to predict negative outcomes such as excessive drinking, excessive exercising, and so on? Vallerand and Verner-Filion (2013) suggested two related reasons. First, obsessive passion is more likely to result in negative psychological outcomes such as negative cognitions and negative affect. For example, there is evidence that obsessive passion is positively related to perceived stress (Gustafssen et al., 2011). Second, obsessive passion is more likely to lead to an inflexible pattern of behavior toward the passionate activity (in this case, academic activities). Perhaps the negative psychological outcomes, including high levels of stress, that come with being obsessively passionate about ,

and rigidly persistent toward, one's academic activities puts people at a greater risk for engaging in the problem health behaviors (drinking, excessive exercise, disordered eating) in an effort to cope with the stress. Future research should examine the extent to which negative psychological outcomes such as stress and rigid behavioral patterns toward academic activities mediate the relationship between passion and problematic health behaviors in college students.

### **Limitations**

Although our results provide useful information on the relation between passion for academic activities and problematic health behaviors in college students, there are also several limitations to our study. First, it is important to remember that the nature of our analyses was correlational. Because of this, we were not able to imply causation between any of our variables. Future studies will hopefully be able to use designs (e.g., experiments, prospective designs) that allows for a better understanding of how passion for academic activities and problematic health behaviors might causally be related. In addition, this study used self-report measures rather than behavioral observations. Self-report data may not accurately represent an individual's behavior. Future studies might thus wish to use more objective measures. Another limitation is that the sample for this study was limited. The sample was comprised mostly of women and undergraduates taking introductory psychology courses. As such, the sample may be unrepresentative of other populations. Future studies would benefit from expanding the diversity of the sample. Finally, it should be noted that the university at which the study took place is noted for having a large drinking and partying culture. Again, this may limit the generalizability of our findings.

### **Conclusion**

In conclusion, the present study examined whether passion for academic activities was related to problematic health behaviors. We found that obsessive passion for academic activities predicted problematic drinking, eating and exercise behavior. Harmonious passion, on the other hand, predicted lower levels of problematic drinking and fewer sleeping problems. In short, our results suggest that passion for academic activities may be predictive of problematic health behaviors in college students, but only if the passion is obsessive in nature.

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### Tables

Table 1

#### *Partial and Bivariate Correlations—Passion for Academic Activities*

	<i>M</i>	<i>SD</i>	Passion	HP	OP	MAST	EAI	EP	EAT
Passion	5.40	0.92	-	<i>.71***</i>	<i>.19***</i>	<i>-.11*</i>	<i>.13**</i>	<i>-.09*</i>	<i>.04</i>
HP	4.95	0.94		-	<i>.23***</i>	<i>-.18**</i>	<i>-.01</i>	<i>-.06</i>	<i>.01</i>
OP	2.94	1.04			-	<i>.14**</i>	<i>.17**</i>	<i>.04</i>	<i>.15**</i>
MAST	6.52	3.61				-	<i>.06</i>	<i>.16**</i>	<i>.11*</i>
EAI	17.61	4.33					-	<i>.11</i>	<i>.35***</i>
EP	10.37	3.61						-	<i>.12*</i>
EAT	10.33	10.29							-

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Note.* Passion = Passion for Academics Scale, HP = harmonious passion, OP = obsessive passion, MAST = Michigan Alcoholism Screen Test, EAI = Exercise Addiction Inventory, EP = Epworth Sleep Scale, EAT = Eating Attitudes Test-26. This table has the partial and bivariate correlations along with the means and standard deviations of the variables involved in our study. Partial correlations are in italics. Harmonious and obsessive passion for academic activities were significantly correlated with one another so the other type of passion was controlled for.

Table 2

*Partial and Bivariate Correlations—Passion for Major*

	<i>M</i>	<i>SD</i>	Passion	HP	OP	MAST	EAI	EP	EAT
Passion	5.70	0.94	-	.76***	.15***	-.13*	.05	-.126**	.09*
HP	5.43	0.95		-	.18**	-.21***	-.03	-.08	.08
OP	3.06	1.16			-	.11*	.11*	.05	.15*
MAST	6.48	3.55				-	.06	.18**	.12*
EAI	17.66	4.36					-	.11*	.35***
EP	10.30	3.62						-	.12*
EAT	10.37	10.55							-

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

*Note.* Passion = Passion for Major Scale, HP = harmonious passion, OP = obsessive passion, MAST = Michigan Alcoholism Screen Test, EAI = Exercise Addiction Inventory, EP = Epworth Sleep Scale, EAT = Eating Attitudes Test-26. This table has the partial and bivariate correlations along with the means and standard deviations of the variables involved in our study. Partial correlations are in italics. Harmonious and obsessive passion for major were significantly correlated with one another so the other type of passion was controlled for.



	Step 1	GPA	-.01	-.21	.832	.03		3.48	.008
		Sex	.11	2.33	.020				
		Year	-1.06	-2.17	.031				
		Greek	.00	.08	.934				
	Step 2	Obsess Passion	.07	1.43	.153	.04	.016	3.70	.001
		Harm Passion	-.13	-2.71	.007				
EAT									
	Step 1	GPA	.09	1.82	.070	.05		5.88	.000
		Sex	.11	2.39	.017				
		Year	-.06	-1.20	.229				
		Greek	-.11	-2.55	.011				
	Step 2	Obsess Passion	.172	3.76	.000	.07	.062	6.37	.000
		Harm Passion	-.041	-.89	.374				

*Note.* This table has the regression analyses with the MAST, EAI, and EAT entered as the primary criterion variables. Cumulative GPA, sex, year in school, and Greek-affiliation were entered as controls and harmonious and obsessive passion for academic activities were entered as the predictor variables.



	Step 1	GPA	-.02	-.36	.719	.04		3.96	.004
		Sex	.15	3.04	.002				
		Year	-.08	-1.61	.108				
		Greek	-.02	-.39	.696				
	Step 2	Obsess Passion	.08	1.64	.004	.06	.021	4.31	.000
		Harm Passion	-.14	-2.92	.101				
EAT									
	Step 1	GPA	.10	1.96	.050	.05		6.21	.000
		Sex	.12	2.56	.011				
		Year	-.06	-1.09	.275				
		Greek	-.12	-2.48	.013				
	Step 2	Obsess Passion	.161	3.41	.001	.07	.029	6.53	.000
		Harm Passion	.036	.75	.751				

*Note.* This table has the regression analyses with the MAST, EAI, and EAT entered as the primary criterion variables. Cumulative GPA, sex, year in school, and Greek-affiliation were entered as controls and harmonious and obsessive passion for one's major were entered as the predictor variables.