

Dualistic Model of Passion and Mental Health in a Sample of Canadian Student-Athletes

by

Jelena Dukic
B.A., University of California, Berkeley, 2007

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

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in the School of Exercise Science, Physical and Health Education

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Supervisory Committee

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Abstract

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The incidence of mental health problems in student-athletes has garnered an increased interest and concern among researchers and university administrators; however, limited literature is available on Canadian student-athletes. The purpose of this study was to explore whether role conflict and passion were predictive of mental health constructs, (i.e., depression, anxiety, stress, and satisfaction with life) in a sample of Canadian student-athletes. The final sample consisted of 148 participants (105 females and 43 males) from five universities belonging to the Canada West Universities Athletic Association. Participants completed an online survey comprised of DASS (Depression, Anxiety and Stress Scale), SWLS (Satisfaction with Life), DMP (Dualistic Model of Passion Scale) and sets of questions about personal characteristics and self-perceived conflict between their academic and athletic roles. Conflict was reported by 70% of males and 55% of females. In addition, 99.32% of surveyed student-athletes were passionate about sport, while 73.65% were passionate about school. Passion for sport and conflict were found to be correlated with mental health variables and statistically significant predictors of depression, anxiety and stress explaining 16%, 14.8% and 21.8% of variance in scores, while passion for school and conflict were significant predictors of satisfaction with life explaining 16.5% of score variance ($p < 0.05$). Finally, males reported higher rate of “severe” depression (17% vs. 10%), anxiety (24% vs. 13%), and stress (17% vs. 15%) than females. These findings reveal relationships between investigated mental health constructs and passion and role conflict in student-athletes while adding to the limited research in a Canadian setting.

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Dedication

This thesis is dedicated to my fiancé Dan.

Chapter 1: Manuscript

Introduction

Statement of the Problem

Literature examining university athletics acknowledges the impact of highly demanding academic and athletic roles on aspects of student-athlete mental health (Armstrong & Oomen-Early, 2009; Eisenberg, Gollust, Golberstein, & Hefner, 2007; Etzel, Watson, Visek, & Maniar, 2006; Storch, Storch, Killiany, & Roberti, 2005; Yang, Peek, Corlette, Cheng, Foster, & Albright, 2007). The World Health Organization (WHO) (2011) defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community” (*Mental Health: a state of wellbeing*).

The incidence of mental health problems in young adults has garnered an increasing amount of attention in recent years and rightfully so. As documented by the WHO report (2011), mental health accounts for about 12% of worldwide health diseases; however, “the global median percentage of government health budget expenditures dedicated to mental health is 2.8% and 5.1% in high-income countries such as, Canada” (p.26). The causes of mental illness are complex and may be related to genetics, biology, psychological trauma, and environmental stress. They tend to manifest as mood disorders, anxiety disorders, schizophrenia, personality disorders, and eating disorders (Allgöwer, Wardle, & Steptoe, 2007; Jaffee & Price, 2007). Health Canada (2006, 2009) research findings demonstrate that Canadians aged 18 to 19 are the most likely to report high stress levels and being depressed. As many as one in seven young Canadians aged 18-25 have experienced a first incidence of depression, with the majority receiving no treatment. Young women aged 15-19 represent the most vulnerable sex group and age group. Mental health disorders seriously impact education, work, physical health, and interpersonal relationships of young adults.

Factors behind the high prevalence of mental health problems in young adults have also sparked interest among researchers. Arnett (2000) argues that young adults aged 18 to 25 are in the period of emerging adulthood during which they regard themselves as being neither adolescents nor adults. Major life transitions attributed to this period, including, post-secondary education, decisions on where and with whom to live, career choice and planning

a family, have all been found to relate to mental health (Hintz, 2011). Further mental health concerns are triggered by high distress levels, sleeping difficulties, experimenting with drugs, and other similar destructive behaviours (Patel, Flisher, Hetrick, & McGorry, 2007). In support, additional research demonstrates that during the transition to university, “students face a variety of stressors; making new relationships, modifying existing relationships with parents and family (e.g. living apart), and learning study habits for new academic environment” (Parker, Summerfeldt, Hogan, & Majeski, 2004, p.164). This becomes particularly challenging for members of at-risk groups (i.e. first-generation students, international students, mature students, transfer students, student-athletes) who are exceptionally vulnerable to mental health problems during time (Goode, 2007; Kitzrow, 2003; Mori, 2000; Yang et al., 2007).

The focus of this study was on one of those at risk groups, student-athletes. According to Reardon and Factor (2010), mood disorders and anxiety disorders are highly understudied in the athlete population. Despite undergoing previously mentioned challenges common for the majority of university students, student-athletes are exposed to an additional life stressor induced by participation in athletics. Present research findings show that university athletes find meeting duties and responsibilities of their dual roles (i.e., being a student and being an athlete) especially strenuous (Adler & Adler, 1985, 1987; Lance, 1987, 2004; Meyer, 1990; Miller & Kerr, 2003; Perrin, 1988; Settles, Sellers, & Damas, 2002). Albeit both roles are deeply integrated into their identities, the need to continuously prioritize between school and sport affects not only student-athletes’ academic and athletic performance, but also their mental health state (Yang et al., 2007). For this reason, higher frequency of psychological problems in student-athlete population in comparison to non-athletes is not surprising (Armstrong & Oomen-Early, 2009; Storch et. al., 2005).

Review of Literature

Thus far, research concerning university athletes has received great attention in North America, particularly the United States. Much of it has focused on outcomes of the struggle between school and sport demands including: lower GPA and graduation rates, increased frequency of injuries and eating disorders, substance abuse, performance anxiety, higher levels of depression and stress, and lower satisfaction with life (Coakley, 2007;

Eitzen & Sage, 2008; Grossbard, Geisner, Mastroleo, Kilmer, Turrisi, & Watson, 2006; Lewis, 2008; Martens, Dams-O'Connor & Beck, 2006; Miller, Melnick, Barnes, Farrell, & Sabo, 2005; Pascarella, Bohr, Nora, & Terenzini, 1995; Pascarella, Truckenmiller, Nora, Terenzini, Edison, & Hagedorn, 1999; Shulman & Bowen, 2001). Even though a majority of the evidence comes from the United States, the problematic nature of student-athlete relationship is not unique to the United States university athletics and many of the same trends are observed in Canada (McTeer, 1987; Miller & Kerr, 2002;).

While many student-athletes view the relationship between their academic and athletic roles “as part of larger meta-role” (Settles, Sellers, & Damas, 2002, p.575), there comes a time when they have to prioritize effort invested in one role to meet requirements of their other role (Goode, 1960). Since both are central parts of their identities, many are unable to keep the two roles separate, resulting in role interference (Settles et al., 2002; Yopuk & Prentice, 2005). The role conflict implies that “the demands of a particular role make it difficult for the individual to perform or meet the demands of another role” (Settles et al., 2002, p. 574). Level of role interference may be explained by motivation theories.

The motivation literature differentiates between two distinct types of motivation: intrinsic and extrinsic (Kasser, 2002). Intrinsic goals imply satisfaction of all three basic psychological needs (i.e. autonomy, relatedness, competence) and are inherently satisfying to pursue. Extrinsic goals imply the importance of rewards, social praise, and achievement (Deci & Ryan, 1985, 2000). Whether one has predominantly intrinsic or extrinsic goals associated with school and sport may explain: a) which passion type is developed, b) conflict between the two as well as c) mental health outcomes. The Dualistic Model of Passion (DMP) is discussed in more detail in the following literature review sections. To the best of my knowledge, small number of studies have investigated relationships between passion and mental health concepts (Carboneau, Vallerand, Fernet, & Guay, 2008; Curran, Appleton, Hill, & Hall, 2011; Forest, Mageau, Sarrazin, & Morin, 2011; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Vallerand, Paquet, Philippe, & Charest, 2010), while no study has investigated mental health as related to the Dualistic Model of Passion (Vallerand et al., 2003) in Canadian university athletes.

Passion for School and Passion for Sport

In 2010, Vallerand unified the existing literature on the concept of passion in an

attempt to put forward the most recent advancements on this research topic and more specifically, development of passion. As inferred from this body of literature, passion development follows a three-step process: 1) selection, 2) valuation, and 3) internalization of an activity into one's identity. For example, people choose to engage in activities they find appealing and compatible with their future goals and aspirations. Activity valuation represents the second step in development of passion for an activity or interest, and as Vallerand (2010) claims, "can be seen as the intensity (or quantity) dimension (the fuel) underlying activity internalization and the development of passion" (p.110). The stronger one's valuation for a particular activity is, the more likely one is to become passionate about it. Internalization of an activity into one's identity is the final and the most important stage in the process of passion development. Based on the literature addressing identity formation in sport, athletes tend to identify with their sport (Grove, Lavallee, & Gordon, 1997). Therefore, they may view themselves as "rowers" rather than "individuals who row" or in the context of university athletes, "student-athletes" (Ryska, 2002; Yopuk, 2007). So far, research has been primarily focused on passion for one activity, often addressing struggles between a passionate activity and other life domains (Vallerand et al., 2003, 2008). To the best of my knowledge, no study has specifically explored the possibility of passion for more than one activity such as, passion for school and passion for sport in the student-athlete population.

In light of the proposed theoretical background, the question of whether one is pursuing goals that are internally or externally motivated, may impact the passion type one develops for an activity, as well as the overall psychological and behavioural outcomes associated with it. Passion for an activity is defined as "a strong inclination and desire toward an activity that one likes, and finds important, and in which one invests time and energy" (Vallerand et al., 2003). Vallerand and colleagues (2003) explored the manifestation of two types of passion, harmonious (HP) and obsessive (OP), "as a result of an internalization process" (p. 757). In line with the Self-Determination Theory (SDT), passionate activity can be pursued for internal (harmonious passion) or external goals (obsessive passion).

For the purpose of this study, the Dualistic Model of Passion was used as a framework for explaining student-athlete engagement in both roles and is important for three reasons: 1)

it can explain how and why passion is developed, 2) different types of passion evoke different behaviours and outcomes (Donahue, Rip, & Vallerand, 2009; Lafreniere, Jowett, Vallerand, Donahues, & Lorimer, 2008), and 3) knowing the type of passion one holds can aid in predicting and overcoming negative psychological outcomes (Rip, Fortin, and Vallerand, 2007; Vallerand, Rousseau, Grouzet, Dumais, Grenier, & Blanchard, 2006).

Conflict

Due to academic role and athletic role being strongly unified in student-athlete identity, researchers and university administrators have acknowledged a growing relationship between the two roles (Adler & Adler, 1985, 1987). For example, while some student-athletes identify themselves in more traditional way, as students first and athletes second, others tend to view themselves as athletes first and students second (Adler & Adler, 1985). In support, research by Adler and Adler (1987) found that 47% of incoming athletes had high academic expectations and pursued professional majors such as engineering, business, and letters and sciences, while 45% identified less with academics and more with athletics, and thus, chose to enrol in more manageable academic programs.

Although the majority of student-athletes relate to both roles (Settles et al., 2002; Woodruff & Schallert, 2008), their academic and athletic duties and responsibilities may conflict with one another. Pinkerton, Hinz, and Barrow (1989) claimed that, "...demands for athletic, academic, or social competence can become paramount. For those who master this period successfully, the rewards can be substantial. For those less fortunate, it becomes a potentially crippling personal experience" (pg.218). The two roles are inseparable from each other, and generate a hybrid meta-role. For this reason, it is not surprising that findings on student-athlete university experiences and outcomes often deviate from one another. The literature to date has addressed interference between work as a passionate activity and other life activities (Caudroit et al., 2011; Vallerand, Paquet & Phillippe, 2010), but no research has examined the outcomes resulting from the conflict between two passionate activities.

Passion and Mental Health

The existing literature has demonstrated existence of passion in the academic domain (Vallerand et al., 2007 Studies 1 and 2; Stoeber, Childs, Hayward, & Feast, 2011) and the athletic domain (Lafreniere et al., 2008; Mageau, Vallerand, Charest, Salvy, Lacaille, Bouffard, & Koestner, 2009; Rip & Vallerand, 2009). Although number of studies have focused in on aspects of mental health (Curran et al., 2011; Carboneau et al., 2008; Forest, Mageau, Sarrazin, & Morin, 2011; Ratelle et al., 2004; Vallerand et al., 2010), few studies have explored the direct relationship between passion and depression, anxiety, and stress (Forest et al., 2011); this study explored correlations between two passion types and variables pertaining mental health in the context of passion for work. Findings revealed that harmonious passion was positively related to mental health, while OP was directly and negatively predictive of mental health. An abundant number of studies explored the relationship between passion and well-being (Bonneville-Roussy, Lavigne & Vallerand, 2010; Phillippe, Vallerand, & Lavigne, 2009; Rousseau & Vallerand, 2008; Stenseng, Rise, & Kraft, 2011; Vallerand et al., 2008; Vallerand, Salvy, Mageau, Elliot, Pascale, Grouzet, & Blanchard, 2007). Difference in well-being between passionate and non-passionate individuals was explored in the sample of college students, undergraduate students, community-dwelling adults, and senior adults (Phillippe et al., 2009). The participants were divided into three groups: non-passionate, harmoniously passionate, and obsessively passionate, based on their Passion Scale scores. MANOVA was conducted with gender, age, passion type, and the two measures of well-being as the dependent variables. The results demonstrated that harmoniously passionate individuals scored significantly higher on both measures of well-being, Eudaimonic well-being and Hedonic well-being, than non-passionate and obsessive passion individuals. Further studies support these findings in athletes (Vallerand et al., 2006, Studies 2 and 3; Vallerand et al., 2007, Study 1) by showing a positive relationship between harmonious passion and well-being and negative relationship between obsessive passion and well-being (Vallerand et al., 2006, Studies 2 and 3). Findings concerning passion for studying and well-being reinforce the positive relationship between harmonious passion and well-being and the negative relationship between obsessive passion and well-being (Vallerand et al., 2007, Studies 1 and 2). Future research is called for, to replicate these findings (Vallerand et al., 2006, Studies 2 and 3).

Despite the relationship between passion and affective experiences (Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Vallerand et al., 2006) as well as positive and negative emotions (Phillipe et al., 2009, Studies 1, 3, and 4), research has not extensively addressed the link between passion and mental health perceived as psychological outcomes including depression, anxiety, and stress. To validate the influence of two passion types on positive and negative affect in athletes, Vallerand et al. (2006) conducted a correlational study with 210 competitive basketball players. The authors hypothesized that harmonious passion for basketball would be correlated with positive affect, while obsessive passion would be correlated with negative affect. The results confirmed the hypotheses: harmonious passion was significantly related to positive affect and not significantly related to negative affect and obsessive passion was significantly related to negative affect and not significantly related to positive affect. To exhibit the relationship between harmonious passion and obsessive passion and positive and negative emotions, Phillipe et al. (2009) assessed emotions in a group of basketball players. The sample consisted of 160 basketball players (60 females, 100 males). The study findings confirmed the hypotheses: harmonious passion was positively associated with positive emotions and negatively associated with negative emotions and obsessive passion was positively associated with negative emotions and unrelated to positive emotions. Findings from these two studies bring to light the connection between the two passion types and affective behaviours and emotions and establish groundwork for exploring the two types of passion in relation to moderators such as depression, anxiety, stress, and well-being.

Passion in the context of academics has been investigated in only three studies (Stoeber et al., 2011; Vallerand et al., 2007, Studies 1 and 2). In two samples of participants, undergraduate psychology students and dramatic arts students, Vallerand et al. (2007) found that harmonious and obsessive passion positively predicted mastery goals, while, harmonious passion positively and obsessive passion negatively related to academic performance. Stroeber et al. (2011) examined relationships between harmonious and obsessive passion and three aspects of academic engagement and three aspects of academic burnout. As hypothesized, results revealed positive correlations between two passion types and three aspects of academic engagement, while harmonious passion was negatively correlated with the three aspects of academic burnout (exhaustion, cynicism, and inefficacy)

and cynicism and inefficacy. Finally, higher levels of harmonious passion were associated with lower levels of academic burnout, while higher levels of obsessive passion predicted only inefficacy. Previous research findings have provided compelling evidence on the outcomes associated with harmonious and obsessive passion in school and sport domains, but have not examined their outcomes congruently.

Present Research

The first aim of this research study was to explore whether student-athletes are passionate about both school and sport, and if they are, to determine which passion type is dominant. The second goal of this study was to investigate the relationship between passion for school and passion for sport and conflict with mental health variables (depression, anxiety, stress, and well-being).

Research Questions

1. Are student-athletes passionate about both school and sport? Which passion type is dominant?

Hypothesis: Student-athletes are passionate about both school and sport. Harmonious passion will be the dominant passion type.

2. What are the relationships between:
 - a) passion types (harmonious and obsessive passion) and personal characteristics (gender, age, GPA, year in university, year of eligibility)

Hypothesis: Passion types will be unrelated to personal characteristics

- b) mental health outcome variables and personal characteristics, conflict, and passion types

Hypothesis: Personal characteristics will be unrelated to mental health outcome variables; conflict and obsessive passion will be positively related to depression, anxiety, and stress, and negatively related to satisfaction with life; harmonious passion will be negatively related to depression, anxiety, and stress, and positively related to satisfaction with life.

3. What is the prevalence of depression, anxiety, and stress in student-athletes? Are there gender differences?

Hypothesis: We expect that approximately one third of student-athletes will report above normal depression, anxiety, and stress. Female student-athletes will be more likely to report higher incidence of depression, anxiety, and stress.

4. Are conflict and passion types predictive of depression, anxiety, stress, and wellbeing?

Hypothesis: Yes. Conflict and passion types will be predictive of depression, anxiety, stress, and wellbeing.

Methods

Recruitment Procedures

Ethics approval for this research study was obtained from the University of Victoria Human Research Ethics Committee in January of 2011. A total of ten universities belonging to Canada West University Sport Association were identified as appropriate for the purpose of this study. All ten universities were characterized by medium-sized athletic departments and comparable tuition costs and scholarship and bursary opportunities. Two other universities had smaller athletic departments and higher tuition costs, and thus were not comparable in size and tuition costs to the rest of universities belonging to Canada West University Sport Association. For these reasons, they were not invited to part take in the study. Following the Dillman (1978) approach, athletic administrators were contacted via email twice. The first email included an invitation for university's athletic department to participate in the research, as well as detailed description of the study background and procedures. Administrators who replied to the first email and expressed interest in participating were sent the *Participant Recruitment Email* and asked to forward it to student-athletes. The student-athlete recruitment email contained consent form, survey link and detailed explanation of study procedures. Administrators who did not respond to the initial email were contacted two weeks later by telephone and again invited to participate in the study. Those administrators who consented to participate were sent an email with a consent form and a survey link to forward onto student-athletes. The final sample consisted of five universities (response rate 50%).

Student-athletes from the participating universities who received the *Participant Recruitment Email* were able to access an online survey by clicking on the www.askitonline.com link, provided they read the information and consent letter and checked the "agree" box. No personal information was collected, to assure full anonymity of the study participants. They were given information about the purpose of the survey, with an emphasis on confidentiality and anonymity. Although the survey was intended only for student-athletes we were not able to prevent coaches or athletic administrators from accessing the survey link. In order to access the survey, student-athletes were asked to provide their email address, which was used to identify potential duplicates and for a prize

draw. Student-athletes were not required to answer every question on the questionnaire and changes to answers were only allowed before participant clicked “submit” button. Survey links were kept open for four weeks from the day when the first recruitment email was sent out. Following the Dillman (1978) approach, two weeks after the first recruitment email reached student-athletes, an email was sent to remind them to access and complete the survey.

The questionnaire data was kept in a password protected database accessible through www.askitonline.com. At the end of data collection phase, student-athletes from all five universities were sent a *thank you email* on behalf of the researcher. Due to the unknown number of student-athletes who received recruitment emails, the actual number of eligible participants was unknown and in turn an accurate response rate of student-athletes was thus unattainable.

Participants

Eligible participants were full-time student-athletes, enrolled in minimum of 4.5 class credits, training and competing in at least one of the Canadian Interuniversity Sports (CIS). A total of 181 university athletes consented to take part in the study. Of these, 12 consented to part take in the study but failed to provide any answers, while 21 only partially completed the survey missing large amount of data. To obtain the most accurate data listwise deletion was employed Thus, total of 33 participants were excluded from the final data analyses.

Measurement Instruments

The following instruments and question items were included in the Student-Athlete Questionnaire posted and accessible through the www.askitonline.com. A sample can be found in the Appendices(C through H).

Participant Profile

Self-reported, basic demographics were obtained from participants including gender, age, year in university, year of sport eligibility, sport, and GPA. Additionally, student-athletes reported on a question “I most often view myself as a student first, and an athlete

second”(1=not agree at all, 7=very strongly agree). To sum up, demographic information and self-reported identity ratings aided in comprehension of participants’ characteristics and interactions between variables of interest.

Dualistic Model of Passion (DMP) Questionnaire

The DMP concept of motivation behaviour was developed, and later assessed, by Vallerand and colleagues (2003, 2006, 2008). Vallerand et al. (2003) developed a 16-item scale measuring passion for an activity. The scale was proven to have satisfactory internal reliability (Cronbach’s alphas of 0.77 and 0.82) (Amiot et al., 2006; Vallerand et al., 2003, 2006). In line with the aim of this study, the questionnaire was phrased in accordance with passion for academics (school) and passion for athletics (sport). Sample items for a) obsessive passion include “I have difficulties controlling my urge to work on my academics” and “If I could, I would only train/participate in my sport”, and for b) harmonious passion include “The new things I discover through school allow me to appreciate it even more” and “My sport is in harmony with other things that are part of me”. The Dualistic Model of Passion questionnaire provided information and deeper understanding of individuals’ passion type. The questionnaire has been piloted with two former student-athletes to ensure its adequacy in assessing passion for academics and passion for athletics in this particular population. It was asserted that the questionnaire had satisfactory reliability and appropriate for the aim of this study. Cronbach’s alphas for academics were .81 for the harmonious passion subscale and .73 for the obsessive passion subscale. Further, Cronbach’s alphas for sport were .83 for the harmonious passion subscale and .84 for the obsessive passion subscale.

The individual item scores on the passion subscales were totalled and then averaged for each participant. For example, within the 16-item Passion Scale, four items are related to assessing participant’s passion for particular activity. Each participant’s score on each item was added and then averaged to come up with the total score for each participant. This procedure was repeated for both school and sport passion.

Conflict

The conflict scale was created by adding and then averaging each participant’s score on each item within the scale. For example, within the 4-item Conflict Scale, two items were

related to school with sport conflict (“My academics conflict with my sport responsibilities”), while two were related to conflict between sport and school (“My sport participation conflicts with my academic responsibilities”), while two were removed from the final conflict construct scale (“I most often see myself as student first, and athlete second”). Each participant’s score on each item was added and then averaged to come up with the total score for measurable conflict between school and sport. Cronbach’s alpha for conflict construct in this study sample was .88, thus demonstrating internal consistency.

Depression, Anxiety, and Stress Scale (DASS)

The principal second aim of this study was to investigate the relationship between types of passion and three psychological outcomes (depression, anxiety, and stress). To accommodate the busy schedule of student-athletes, the shorter version of the DASS (a 21-item) scale was used, rather than the standard 42-item scale. Participants were asked to report about their cognitive state, employing the 4-point scale (0 = “did not apply to me at all”, 3 = “applied to me very much, or most of the time over the past week”). Sample items included “I was worried about the situations in which I might panic and make a fool out of myself”, “I felt life was meaningless”, and “I felt that I was rather touchy”. Niewenhuijsen et al. (2003) found the internal consistency of the 21-item DASS scale to be high, with Cronbach's alphas of 0.94, 0.88, and 0.93 for depression, anxiety, and stress respectively. Cronbach’s alpha for the DASS in this study sample was .91 (depression, $\alpha=.87$; anxiety, $\alpha=.71$; stress, $\alpha=.86$), thus demonstrating internal consistency.

Satisfaction with Life Scale (SWLS)

SWLS was used as an indicator of student-athletes’ cognitive state and measure of participants’ well-being. SWLS is a 5-item, 7-point scale (1=strongly disagree, 7=strongly agree) developed by Diener, Emmons, Larsen and Griffin (1985). The scale was confirmed valid and reliable in various psychology contexts (Lucan, Diener, & Suh, 1996). Lucas et al. (1996) found the correlation of 0.77 over four weeks in a test-retest of the satisfaction with life scale. The alpha coefficient for SWLS in this study was 0.82.

Statistical analyses

Data was analyzed using SPSS (version 19.0, 2010, SPSS Inc., Chicago IL)

software. Demographic and scale data measuring variables of interest was assessed for missing data, outliers, normality, linearity, and homoscedasticity. Preliminary data screening revealed 33 incomplete questionnaires, which were removed from the final study sample. Following the removal of the incomplete questionnaires, data was screened for outliers; however, no outliers were identified. Skewness and kurtosis of variables of interest were assessed and found to be satisfactory (Tabachnik & Fidell, 2007). Overall, preliminary analyses confirmed satisfactory normality, linearity, and homoscedasticity of the data set (Appendix I). For the purpose of examining relationships between variables of interest, performed statistical analyses included descriptive statistics, and correlation and regression analyses.

To test hypotheses related to passion for sport and passion for school, descriptive statistics were employed. To learn about personal characteristics of student-athletes passionate about school and sport as well as the dominant passion type means, standard deviations and frequencies were conducted. To investigate relationships between passion type subscales (harmonious and obsessive) and passion subscale and its four items (school and sport), partial correlations were performed. To test the next set of hypotheses related to mental health measures, correlation analyses were performed to examine the relationships between: 1) predictor variables of mental health (passion types for school and sport as well as conflict construct) and participant's personal characteristics and 2) predictor variables and outcome measures of mental health. To test the final hypothesis, correlation analyses findings were considered in selection of potential predictor variables and development of regression equation predictive of student-athlete mental health outcome measures. Four regression analyses were completed utilizing four passion type subscales and conflict construct as independent variables. Significant findings were assessed using the p level of 0.05, powering to detect small to medium effect sizes (Tabachnik & Fidell, 2007).

Results

Descriptive Findings

The final study sample consisted of 148 student-athletes, 70.9% females (n=105) and 29.1% males (n=43), with mean ages of 20.23 (SD=1.77) for females and 20.67 (SD=1.80) for males. Of 148 student-athletes, 25.7% were in their first year of university, 22.3% in second year, 20.9% in fourth, 18.2% in third, 10.1% in fifth and 2.7% in sixth year of university respectively. The majority of participants were in their first year of athletic eligibility (33.1%), 27.7% in second year, 19.6% in third, 14.9% in fourth, and 4.7% in fifth year of athletic eligibility. Over half of participants (56.1%) self-identified as being B students, while 29.7%, 12.8 % and 1.4% self-identified as A, C and D students. This sample of student-athletes, participated in a wide range of individual and team sports including, basketball, rowing, soccer, field hockey, ice hockey, rugby, cross-country, track and field, volleyball, swimming, football, and wrestling. Over half of participants (55.03%) reported training with their team 11 or more hours per week, while 9.6% spent an additional 11 hours or more training on their own. 71.5% of student-athletes spent 11 or more hours in class, while 37.3% spent an additional 11 hours or more studying on their own.

Passion in Student-Athletes

To determine the number and distribution of participants passionate about school and sport, data cases were selected if a participant's score on the passion subscale for school and passion subscale for sport were equal to or greater than 4 (Mageau et al., 2009). When the two scores were the same, participants were classified into the mixed passion group. Almost the entire sample of participants (N=147, 99.32%) scored as passionate for sport, while nearly three quarters (N=120, 73.65%) of the sample scored as passionate for school. Of student-athletes passionate about school, 112 (93.33%) were harmoniously passionate, 7 (5.83%) were mixed and only one was obsessively passionate. On the other hand, of those passionate about sport, 116 (78.91%) were harmoniously passionate, 11 (7.48%) were obsessively passionate and 20 were mixed (13.61%).

Means, standard deviations, and correlations of passion constructs are presented in Table 1. Mean scores for each of the subscales indicate that sampled student-athletes were

harmoniously passionate about both, school ($M=4.40$) and sport ($M=5.46$) and obsessively passionate about sport ($M=4.20$). On the other hand, the average score for obsessive passion for school ($M=2.27$) was less than 4 (on the scale of 1 through 7, with 1 being strongly disagree and 7 strongly agree). Overall, student-athletes scored higher on types of passion for sport than types of passion for school. The noteworthy findings include statistically significant negative correlations between harmonious passion for school and obsessive passion for sport as well as harmonious passion for sport and obsessive passion for school.

Table 1. Passion Means, Standard Deviations, Reliability and Partial Correlations

	Mean	S.D.	Alpha	Male		Female		1	2	3	4
				Mean	S.D.	Mean	S.D.				
Passion for School											
1. HP	4.40	1.02	.81	4.36	1.16	4.42	1.00	-	.22**	.24**	-.21*
2. OP	2.27	.95	.73	2.54	1.43	2.16	.87		-	.23**	.20*
Passion for Sport											
3. HP	5.46	.93	.83	5.45	.96	5.43	.94			-	.37**
4. OP	4.20	1.30	.84	4.53	1.31	4.00	1.31				-

Note: n=148

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)

Elements related to the definition of passion for school and passion for sport

To replicate findings of previous studies that aimed to establish existence of passion in sport and academic contexts, partial correlations between passion type subscales and passion subscale and its four items were conducted. This analysis was a replication of the analysis used in Vallerand et al. (2003) and thus, aims to demonstrate that harmonious and obsessive passion type subscales were related to the elements of passion subscale. Table 3 presents correlations between passion types and elements related to the definition of passion and partial correlations for passion types and passion constructs for school and sport. Partial correlations were performed because the two subscales were significantly correlated for school and sport. Correlations of passion for school with the items assessing elements related to the extent to which “the activity was a passion” ($HP r=.65$; $OP r=.44$), “the activity was valued” ($HP r=.56$; $OP r=.29$), and participants “invested time and energy in the activity” ($HP r=.45$; $OP r=.38$). Correlations of passion for sport with the items assessing elements related to the extent to which “the activity was a passion” ($HP r=.44$; $OP r=.36$), “the activity was valued” ($HP r=.44$; $OP r=.37$), and participants “invested time and energy in the activity” ($HP r=.26$; $OP r=.38$). The passion subscales, “passion for school”

and “passion for sport”, were constructed from the previously discussed items and statistically significant correlations were observed between these two constructs and harmonious and obsessive passion. Evidently, student-athletes value, invest time and energy in, and view school and sport as passionate activities.

Table 2. Correlations and Partial Correlations: School and Sport Passion Type, Items in the Definition of Passion and Passion Subscale

	School		Sport	
	HP	OP	HP	OP
<i>Definition of Passion</i>				
1. I spend a lot of time on...	.45**	.38**	.26**	.38**
2. I like my...	.60**	.36**	.48**	.30**
3. My...is important to me	.56**	.29**	.43**	.37**
4. My...is a passion for me	.65**	.44**	.44**	.36**
<i>Passion subscale</i>	.69**	.44**	.37**	.31**

Note: n=148

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)

Correlations between passion type subscales for school and sport and personal characteristics (gender, GPA, age, year in university, year of athletic eligibility) have shown that GPA and gender were the only two personal characteristics significantly correlated with passion type subscales. GPA was correlated with harmonious passion for school ($r=-.33$, $p<.01$) and obsessive passion for sport ($r=.24$, $p<.01$), while gender was related to obsessive passion for school ($r=.18$, $p<.05$) and obsessive passion for sport ($r=.18$, $p<.05$).

Student-Athlete Mental Health

41.5% of surveyed student-athletes “somewhat agreed” to “strongly agreed” that their athletic duties and responsibilities conflict with their academics, while 30.5% claimed that their academic duties and responsibilities negatively impact their athletics. Overall conflict reported by student-athletes was in “somewhat agree” range ($M=3.80$, $SD=1.46$) with males ($M=4.11$, $SD=1.41$) averaging higher on conflict construct than females ($M=3.67$, $SD=1.50$). Finally, 47% of surveyed student-athletes stated that they “somewhat agreed” to “strongly agreed” with being students first and athletes second, while 20% neither agreed nor disagreed.

Correlations and partial correlations between mental health outcome variables and personal characteristics, conflict and passion subscales, are presented in Table 3. Significant correlations were observed between all measures of mental health and conflict and some passion type subscales, while only one personal characteristic was found to significantly correlate with anxiety.

Table 3. Correlations and Partial Correlations: Mental Health Outcome Measures and Personal Characteristics, Conflict and Passion Types

	Depression	Anxiety	Stress	Satisfaction with Life
Gender	.06	.12	-.04	-.14
Age	-.03	-.04	.02	.05
GPA	.03	.18*	.04	-.15
Year in university	.02	-.04	.14	.10
Year of eligibility	-.003	.004	.13	.12
Conflict	.29**	.22**	.35**	-.24**
School				
HP	-.21**	-.26**	-.32**	.36**
OP	.18*	.14	.31**	-.01
Sport				
HP	-.37**	-.31**	-.24**	.25**
OP	.19*	.26**	.34**	-.13

Note: n=148

** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed)

We also explored how harmonious and obsessive passion relate to conflict and found statistically significant relationships for conflict and harmonious ($r=-.23, p<.01$) and obsessive ($r=.36, p<.01$) passion for school and harmonious ($r=-.39, p<.01$) and obsessive ($r=.36, p<.01$) passion for sport.

The mean, mode, and standard deviations of depression, anxiety, stress, and well-being scores for the entire sample of student-athletes, as well as male and female student-athletes are presented in Table 4. The entire sample of surveyed student-athletes scored within the “mild” range for depression, anxiety and stress (Lovibond & Lovibond, 1995). However, when these scores were assessed by gender, males scored within “mild” to “moderate” severity range on the DASS depression and anxiety subscales, while females scored within “mild” to “moderate” range on the same subscale. In terms of well-being, as measured by the SWLS, females scored between “average” and “high-score” range, while males scored within “average” range.

Table 4. Means, Modes, Standard Deviations, and Severity Levels for Depression, Anxiety, Stress, and Well-being

Sample	Sample Size	Subscale	Mean	Median	SD	Severity
All	148	Depression	9.77	7.00	9.47	mild
		Anxiety	7.78	6.00	7.10	mild
		Stress	15.17	14.00	10.51	mild
		Well-being	25.19	26.00	5.87	high-score
Male	43	Depression	10.60	8.00	9.63	mild
		Anxiety	9.24	8.00	7.48	mild
		Stress	14.29	14.00	10.52	normal
		Well-being	23.93	25.50	6.42	average
Female	105	Depression	9.33	6.00	9.00	normal
		Anxiety	7.35	6.00	6.91	normal
		Stress	15.26	12.00	10.71	mild
		Well-being	25.70	26.00	5.58	high-score

Note: n=148

Table 5 represents severity distribution of student-athlete scores on the DASS subscales. Approximately 30%, 37% and 32% of student-athletes scored in the “moderate” to “extremely severe” range on depression, anxiety and stress subscales. Depression and anxiety scores were noticeable different between male and female student-athletes.

Table 5. Severity Distribution (%) of DASS scores in Canadian Student-Athletes

Variable	Gender	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	All	56.34	14.08	17.61	5.63	6.34
	Male	53.00	15.00	15.00	10.00	7.00
	Female	57.84	13.73	18.63	3.92	5.88
Anxiety	All	53.74	8.84	21.09	8.84	7.48
	Male	45.24	9.52	21.43	11.91	11.91
	Female	57.14	8.57	20.95	7.62	5.71
Stress	All	56.12	11.51	16.55	13.67	2.16
	Male	53.66	9.76	19.51	14.63	2.44
	Female	57.14	12.24	15.31	13.27	2.04

Note: n=148

In order to examine which variables contributed the most to depression, anxiety, stress, and well-being scores, four regression analyses were performed and the results are presented in Table 6.

DASS Depression, Anxiety, and Stress Subscale Results

1. HP for sport and conflict were statistically significant predictors of depression ($\beta = -.30$ and $\beta = .18$) explaining 16% of score variance.
2. HP for sport and OP for sport were statistically significant predictors of anxiety ($\beta = -.27$, $p < 0.05$; $\beta = .20$, $p < 0.05$) explaining 14.8% of score variance.
3. OP for sport and conflict statistically significant predictors of stress ($\beta = .20$, $p < 0.05$; $\beta = .21$, $p < 0.05$) explaining 21.8% of score variance.
4. HP for school and conflict were statistically significant predictors of well-being ($\beta = .31$, $p < 0.05$; $\beta = -.18$, $p < 0.05$) explaining 16.5% of score variance.

Table 6. Regression Analysis: Predictors of Depression, Anxiety, Stress, and Well-being in Canadian Student-Athletes

	Predictor Variables	B	SE (B)	β	<i>t</i>	<i>Sig. (p)</i>
Depression	HP academics	-.52	.83	-.06	-.63	.53
	OP academics	-.11	.96	-.01	-.12	.91
	HP athletics	-2.86	1.02	-.30	-2.81	.01
	OP athletics	.83	.71	.12	1.17	.25
	Conflict	1.07	.54	.18	1.98	.05
Anxiety	HP academics	-.91	.64	-.14	-1.42	.16
	OP academics	-.19	.70	-.03	-.27	.79
	HP athletics	-2.00	.79	-.27	-2.53	.01
	OP athletics	1.08	.55	.20	1.96	.05
	Conflict	.44	.42	.09	1.06	.29
Stress	HP academics	-1.68	.90	1.17	-1.86	.07
	OP academics	.79	.98	.07	.81	.42
	HP athletics	-1.89	1.10	-.17	-1.72	.09
	OP athletics	1.50	.77	.20	1.94	.05
	Conflict	1.47	.58	.21	2.55	.01
Satisfaction with Life	HP academics	1.73	.53	.31	3.28	.001
	OP academics	.01	.58	.002	.02	.99
	HP athletics	.48	.65	.08	.73	.47
	OP athletics	.22	.45	.05	.49	.63
	Conflict	-.70	.34	-.18	-2.05	.04

n=148

Regression analyses for stress, one of the four performed regression analyses, revealed that harmonious passion for academics had high β scored indicating a potential multicollinearity problem with this predictor making it difficult to determine its importance in this regression equation.

As indicated in the Table 6, harmonious and obsessive passion for sport and conflict were predictive of the DASS subscale scores, while harmonious passion for school and conflict were predictive of well-being scores.

Discussion

The two main objectives of this study were to establish if student-athletes are passionate about school and sport, and to investigate their mental health state as measured by depression, anxiety, stress, and wellbeing. The study findings revealed that vast majority of student-athletes were harmoniously passionate about school and sport, however they experienced a conflict between two passionate activities and high incidence of mental health problems. Passion type and conflict were found to be statistically significant predictors of measured mental health outcomes.

As reported by Health Canada (2009), mental health problems are common in the young adult population. One manifestation of this finding is a high distress level amongst university students, as observed in the existing body of literature employing the DASS instrument (Adewuya, Ola, Olutayo, Mapayi, & Oginni, 2006; Adlaf, Gliksman, Demers, Newton-Taylor, 2001; Poch, Villar, Caparros, Juan, Cornella, & Perez, 2004; Stewart-Brown, Evans, Patterson, Petersen, Doll, Balding, & Regis, 2000; Tomoda, Mori, Kimura, Takahashi, & Kitamura, 2000; Wong, Cheung, Chan, Ma, & Tang, 2006). In support of findings surrounding undergraduate students, similar trends were noted among graduate and professional students (Aktekin, Karaman, Senol, Erdem, Erengin, & Akaydin, 2001; Dahlin, Joneborg, Runeson, 2005; Dyrbye, Thomas, Shanafelt, 2005; Hafen, Reisbig, White, & Rush, 2006). Yet stigma surrounding mental health issues and help-seeking remains prominent in student populations (Eisenberg et al., 2007).

Findings in the context of undergraduate and graduate students are beneficial because they provide insights on the challenges of being a university student, and more so, a student and an athlete (Duff, Morse, & White, 2005). Student-athletes are one of the campus groups at particularly high risk of mental problems (Yang et al., 2007; Pinkerton et al., 1989). These are further hindered by negative perceptions of their academic abilities the “dumb jock” stereotype, denial of mental illness, and underutilization of health services (Baucom & Lantz, 2001; Etzel et al., 2006; Nelson, 1983; Sailes, 1993; Simons, Fujita, Jensen, &

Bosworth, 2007). Thus, the purpose of this study was to explore how passion and conflict relate to domains of student-athlete mental health.

Preliminary findings support the hypothesis that sampled Canadian student-athletes identify with, and are passionate about, school and sport. In addition, this study validated the conflicting nature of student-athletes' academic and athletic roles. Finally, results demonstrated that combinations of five predictor variables including, harmonious and obsessive passion for school, harmonious and obsessive passion for sport, and conflict, were predictive of mental health state among the surveyed student-athletes.

Passion for School and Sport

Although, so far, passion was explored only in the context of one activity, due to the dualistic multiple identities nature of student-athlete roles, it was hypothesized that student-athletes would be passionate about both, school and sport. Furthermore, it was assumed that the dominant passion type would be harmoniously passionate. To explore passion for school and sport, this study employed descriptive statistics and correlation analyses. Results revealed significant correlations between: 1) passion subscales for school and passion type subscales (harmonious and obsessive) and 2) passion for sport and passion type subscales. Furthermore, strong correlations between four passion subscale items, including time investment, valuation, importance and love for the passionate activity, and harmonious and obsessive passion were also revealed. These results are consistent with the findings from previous studies that demonstrated links between the passion subscale and passion type subscales in sport and work domains (Mageau et al., 2009; Vallerand et al., 2003). Still, it is worth noting that distribution of passion types for school and sport was not normal. As hypothesized, the vast majority of student-athletes were harmoniously passionate about both, school (N=112, 93.33%) and sport (N=116, 78.91%). One explanation for the high prevalence of harmonious passion in student-athletes may be the need to retain flexibility and adaptation with respect to each role. An alternative explanation may be that student-athletes see value in both roles. In line with this, in their qualitative study, Woodruff & Shallert (2007) categorized student-athletes based on their motivation and identification with school on one hand, and sport on the other hand. Half of surveyed student-athletes fit within the "best of both worlds" category, because they saw advantages in being both students and athletes, regardless of the challenges associated with meeting the duties and responsibilities

of both roles. Although findings indicate that student-athletes are predominantly harmoniously passionate, which based on the theory would imply positive experiences and outcomes associated with the two activities, holding two passions may play a part in role-conflict between the passionate activities.

Conflict

Driven by student-athletes' strong association with, and passion for school and sport, it was hypothesized that being passionate about both would lead to conflict between two passionate activities. In line with the previous Dualistic Model of Passion findings, it was also hypothesized that student-athletes who were harmoniously passionate for both school and sport would be less impacted by the conflict than obsessively passionate student-athletes. On average, this sample of student-athletes reported within "somewhat agree" when asked about the conflict between their two roles, despite the fact that a majority of participants were harmoniously passionate about school and sport. Student-athlete reports lend support to a study by Settles and colleagues (2002), which revealed that, because the two roles were strongly integrated into student-athlete identities, for many they have become mutually inclusive. Findings by Settles et al. (2002) are challenged by other studies, which found that student-athletes more strongly identified with their athletic roles earlier in their sport career, while later in university careers their focus shifted from athletics to academics (Lally & Kerr, 2005). However, in the present study nearly half of participants viewed themselves as students first, while one third viewed themselves as athletes first. Despite the findings from existing literature and participant reports, there was no statistically significant correlation between sampled student-athletes' year in university and conflict. One reason may be that student-athletes compartmentalize the two roles and thus, tend to identify with the task at hand. To exemplify, during exam times they may view themselves as students first and athletes second, while during sport season they may view themselves as athletes first and students second (Prentice & Yopuk, 2005). Even though student-athletes seem to manage their dual roles, the conflict that arises between academic and athletic demands may have implication for mental health concerns. Future studies should consider assessing role identity as well as noting the time of year (in season vs. off campus) when measuring the conflict between academics and athletics in university athlete populations.

Mental Health

Though it is in line with the hypothesis that student-athletes are more prone to mental health issues than non-athletes, the distribution of severity scores on the DASS depression, anxiety, and stress subscales were higher than anticipated (nearly half of surveyed student-athletes scored above the normal range on depression, anxiety and stress subscales). Present study findings also revealed a high incidence of “moderately” to “extremely severe” scores (Table 8). In comparison to the findings from existing research studies employing the DASS instrument, depression and stress levels of sampled student-athletes were higher than those of the students not involved in university athletics. On the other hand, their anxiety scores were lower than the existing data on students not involved in university athletics (Bayram & Bilgel, 2007; Lovibond & Lovibond, 1995; Wong et al., 2006). While the incidence of depression and stress in student-athletes (when compared to non-athletes) did not deviate from the hypothesis, low anxiety scores were not expected. One possible explanation for low anxiety scores may be the benefit of social support networks and a sense of belonging that student-athletes gain from being part of a team. Previous studies have found compelling evidence that non-athletes faced greater obstacles than student-athletes when establishing new social networks at their respective institutions (Melendez, 2006).

The present study was also interested in investigating gender differences across mental health variables. Findings revealed that male student-athletes on average scored higher on the depression and the anxiety scales, and lower on the stress scale than female student-athletes. These findings challenge the work of earlier researchers, who found that female undergraduate students experienced greater anxiety than male students (Eisenberg et al., 2007). Another study found complimentary findings that demonstrated higher depression, anxiety and stress in males (Norton, 2007). It is, however, important to note that, despite the observed differences between male and female incidence of depression, anxiety, and stress, there was no significant correlation between gender and the DASS subscale scores. Although the DASS is not a diagnostic instrument, high depression and stress scores in the student-athlete population are worrying. Inconsistent findings with respect to gender and the DASS scores (Crawford & Henry, 2003) as well as small sample size and uneven distribution of males and females, suggest the need for future research.

For the purpose of this study, satisfaction with life was used as a measure of student-athlete well-being. On average, surveyed student-athletes scored within “normal” range on satisfaction with life. However, it is noteworthy that females were more likely to report higher satisfaction with life than males. Relevant research has demonstrated contradictory findings, with SWLS being sensitive to age but not to gender (Hultell & Gustavsson, 2008). One possible explanation may be that female student-athletes, despite experiencing more stress than their male peers, possess better time-management skills, and thus do not undergo the same challenges in balancing academic and athletic commitments (Hudd, Dumlao, Erdmann-Sager, Murray, Phan, Soukas, & Yokozuka, 2000). To exemplify, a study by Deniz (2006) that aimed to investigate the relationship between satisfaction with life and coping with stress, among several other concepts, revealed that females who had higher satisfaction with life implemented better stress coping strategies than their male peers. This evidence provides a rationale for higher satisfaction with life among female student-athletes than their male peers.

Hypothesized relationships between mental health variables (depression, anxiety, and stress) and passion variables (harmonious and obsessive passion for school; harmonious and obsessive passion for sport) were confirmed: 1) significant negative correlations between harmonious passion for sport and mental health constructs, as well as 2) significant positive correlations between obsessive passion for sport and mental health constructs. To the best of my knowledge, no study has employed the DASS and the Dualistic Model of Passion to investigate relationships between types of passion and these particular measures of mental health.

As indicated by the correlation and regression analyses results, passion for sport and conflict between the two roles were observed as main contributors to student-athletes’ depression, anxiety and stress. An abundance of research studies supports the finding that conflict between academic role and athletic role leads to higher incidence of stress and depression in the university athlete population (Adler & Adler, 1985, 1987; Settles et al., 2002; Yopuk & Prentice, 2005). Similarly, studies exploring passion in athletes reveal that OP for sport is related to negative psychological outcomes (Vallerand et al., 2003, Study 1; Mageau et al., 2005; Philippe et al., 2009, Study 1; Ratelle et al., 2004, 2009; Vallerand et al., 2006, Studies 2 and 3). To the best of my knowledge, there have been no studies in the

student-athlete context that have simultaneously explored the relationship between passion type and conflict and the impact they have on depression, anxiety, stress, and wellbeing. Hence, this is the first study to address role conflict and passion as determinants of mental health constructs.

As expected, satisfaction with life, a state variable rather than permanent trait of participants (Hultell & Gustavsson, 2008) was related to student-athletes' passion for school and sport. Regression analysis revealed that HP for school and conflict were the main determinants of well-being as measured by SWLS. This finding is supported by the previous studies on passion and wellbeing, which found that HP positively predicted life satisfaction while OP negatively predicted life satisfaction (Rousseau & Vallerand, 2003, 2008; Vallerand et al., 2007, 2008; Bonneville-Roussy et al., 2011).

Study Limitations

Due to the novelty of this research study and its contribution in linking the concept of passion to individuals with multiple roles and their mental health, it is important to acknowledge the study limitations. First, this study employed correlational and cross-sectional design. Correlation analyses suggest the relationship between passion and mental health variables, while regression analyses imply that passion and conflict may be predictive of the DASS and the SWLS scores. However, due to the nature of this study, no causality can be inferred from the existing data. Second, this sample of participants included student-athletes from the Western Canadian universities; however, no inferences can be made to student-athletes from the rest of Canada.

Third, this sample consisted of predominantly female student-athletes (70.9%, N=105) who identified as being B students (N=83, 56.08%). Future studies should aim at a more balanced and diverse study sample that will expand generalizability of the present findings by offering the opportunity to cross-validate the findings. Fourth, even though an online survey was identified as fast, economical, convenient and simple method of data collection (Ritter & Sue, 2007), the proportion of student-athletes from participating universities was unclear. One athletic administrator indicated the absence of a student-athlete master email list. In that case, the *Student-Athlete Recruitment Email* was sent to each coach individually, asking them to forward the email to their athletes. The number of coaches who did

remained unknown. Future studies should aim to reach out to and recruit student-athletes directly, in order to increase participation rates and ensure that coaches and/or athletic administrators can not access the survey. Fifth, the self-reporting nature of the measures may have been vulnerable to biases in reporting distress. In addition, the survey took approximately 30 min to complete; participants may have become fatigued and failed to complete the entire survey (N=22, 13.09%). Nevertheless, the results of this study are among the first to provide data suggesting that Canadian student-athletes are passionate about school and sport and that on average they experience above normal levels of depression, anxiety, and stress. A final limitation of this research refers to the lack of research studies in the context of individuals with multiple roles and Vallerand's DMP.

Implications

The present findings lead to a number of implications for theory and future research on passion, conflict and related to mental health. First, these findings have implications for theory and future research investigating passion in individuals with multiple roles. Previous studies have demonstrated that passion, and more specifically obsessive passion for activity, leads to conflict with life activities including work and family life, leisure and family life (Vallerand et al., 2010; Caudroit et al., 2011). The present study replicated these research findings by not only demonstrating conflict between school and sport, and also expanded beyond these findings to show that surveyed student-athletes were passionate about school and sport. Future studies should use this as a platform to further investigate the plausibility of passion for more than one activity in individuals who self-identify with more than one role.

Second, investigation of passion in individuals who identify with multiple roles should be performed congruently with instruments that would assess the dominant passion by employing valid and reliable instruments measuring role identification and role separation. An excellent starting point would be to build on the existing research study, since it has established that student-athletes are passionate about both activities. Higher frequency of harmonious passion for school and sport is an indicator that if passionate about more than one activity, one would most likely be harmoniously passionate. According to existing research findings, harmonious passion allows for greater flexibility, adaptation and coping

strategies making it possible for one to value, dedicate time to, and part-take in another activity.

Third, the present findings, viewed jointly with previous research on the relationship between mental health, and harmonious and obsessive passion, suggest that impact of harmonious and obsessive passion on mental problems is comparable across different domains (Forest et al., 2010). The present study examined the impact of passion on student-athlete mental health, and found that passion for sport was the dominant predictor of mental health outcomes in student-athletes (harmonious passion negative and obsessive passion positive predictor; for details please refer to the *Results* section). This may be due to the fact that, in their earlier years, student-athletes' athletic role is more dominant than their academic role, and thus, leads to stronger passion for sport than school. Dominance of the athletic role earlier in the university career is demonstrated in Lally and Kerr's (2005) qualitative study, which found that only in latter years student-athletes began to investigate time and energy into their career objectives (academic role).

Another factor that has not been considered in the present study is student-athletes' relationships with their coaches, and how a coach's passion type impacts their coaching style. Other studies have investigated the concept of passion with respect to the coaching and coach-athlete relationship domain. One study by Lafreniere et al. (2008) explored how passion type impacts coaching style and coach-athlete relationship (obsessive passion with controlling and harmonious passion with autonomy supportive behaviour). In line with this finding, future studies could consider coach-athlete relationships when investigating student-athletes' passion for sport as well as role conflict that arises between academic and athletic roles.

To conclude, although this study focused on predictors (role conflict, passion for school, and passion for sport) of mental health issues in student-athletes, it is critical to address the severity of depression, anxiety, and stress amongst the participating student-athletes. This finding provides a baseline for university administrators and researchers to proceed with additional studies exploring factors responsible for mental problems in this population. Moreover, these findings provide evidence for necessity of services and resources specifically tailored to assist student-athletes cope with distress originating from the demanding duties and responsibilities of their dual roles. Universities across the United

States have introduced these types of services and resources in the form of workshops, classes, brief counseling sessions, and various other similar initiatives (Curry & Maniar, 2003; Watson & Kissinger, 2007).

Conclusion

The present study has established that student-athletes are passionate about their student role and their athlete role, but also that competing duties and responsibilities of academics and athletics lead to role-conflict. Performed statistical analyses revealed that four dependent variables associated with passion type for school and sport and conflict were predictive of adverse mental health outcomes experienced by the sampled student-athletes. Present findings lend support and extend theoretical suppositions concerning the Dualistic Model of Passion (Vallerand et al., 2003, 2008) and outcomes associated with harmonious and obsessive passion. The high percentage of “severely” and “extremely severely” depressed and stressed student-athletes is alarming. Another major concern is the existing evidence about underutilization of health and counselling services, by both the student-athlete population (Etzel et al., 2006) and the university student population at large (Eisenberg et al., 2009). The findings presented urge for: 1) future research exploring the relationships between passion and mental health, 2) future studies concerning the mental health of Canadian student-athletes, and 3) the design of short-term therapy and brief interventions across Canadian university athletic departments (Pinkerton et al., 1989), as well as effective promotion, implementation and usage of these programs and initiatives (Denson, 1994; Etzel et al., 2006; Jordan & Denson, 1990; O’Bryante, 1993).

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Chapter 2: Literature Review

Framework

The following review has been split into four main sections. The first provides details about the current state of scholarly-literature pertaining to university athletics. The second section discusses and summarizes current research examining relationships between multiple roles, and more specifically, the relationship between academic and athletic roles. The third section discusses the Dualistic Model of Passion (Vallerand et al., 2003, 2008). The final and primary focus of this literature review is on the relationship between role conflict, passion, and mental health measures (depression, anxiety, stress, and satisfaction with life).

Student-Athletes in the Literature

Over the last several decades, research in sociology, psychology, and sport has generated a great number of studies concerning university athletes (student-athletes). So far, this body of literature has focused on examining student-athletes with respect to the following domains: a) academic experience, GPA and graduation rates (Eitzen & Sage, 2008; Shulman & Bowen, 2001; Miller, Melnick, Barnes, Farrell, & Sabo, 2005; Pascarella et al., 1995; Pascarella et al., 1999), b) athletic experience and performance (Coakley, 2007; Watson, 2006), c) substance abuse (Grossbard, Geisner, Mastroleo, Kilmer, Turrisi, & Larimer, 2009; Miller, Melnick, Barnes, Sabo, & Farrell, 2007; Lewis, 2008), and d) eating disorders (Greenleaf, Petrie, Reel, & Carter, 2009). Although most current research reflects its United States setting, there are not a great many differences between Canadian and U. S. university athletics. The structure of university athletics in the United States and Canada is essentially the same, having one organization imposing and regulating rules and policies across the entire country: the National Collegiate Athletic Association (NCAA) in the United States and Canadian Interuniversity Sport (CIS) in Canada. However, there are perceived discrepancies between what is it like being a student-athlete in the United States and Canada, especially taking into consideration the commercialization of American university athletics (McTeer, 1987; Miller & Kerr, 2002). Nevertheless, there are more than 10,000 student-athletes representing 52 Canadian post-secondary institutions, and the CIS awards \$10 million each year in athletic scholarships (in Canada one in two athletes receives

an athletic scholarship). The scope of research potential concerning Canadian university athletics, as well as replication of existing U.S. studies, is therefore immense (www.cis-sic.ca).

Simultaneous Involvement in Sport and School

Recent evidence from the literature suggests that children and young adults who partake in extracurricular activities (those outside school hours) tend to be more well-rounded and to academically outperform peers who do not engage in similar extracurricular activities (Feldman & Matjasko, 2005; Fredericks & Eccles, 2006; Whitley, 1999). Today's parents are more inclined than earlier generations to put their children in competitive sports, music lessons, language schools, and various other extracurricular activities (Mahoney, Larson, & Eccles, 2005). As a result, many children are involved in competitive sports from a young age, and thus participate in sports throughout their formal education path. For this reason, it is not surprising that the past several decades have been characterized by a great increase in the popularity and competitiveness of high-school and university athletics. In response to this trend, many North American universities aim to attract not only the best students, but also the best athletes. Due to the integration of athletic and academic roles into the student-athletes' identity, researchers and university administrators have noticed a growing relationship between these two roles (Adler & Adler, 1985, 1987). For example, while some student-athletes identify themselves in more traditional way, as students first and athletes second, the vast majority of the others tend to view themselves as athletes first and students second (Adler & Adler, 1985). In either case, the two roles are inseparable from one another, and generate a hybrid meta-role leading to divergent university experiences and outcomes (Woodruff & Schallert, 2008; Yopuk & Prentice, 2005).

The overall purpose of this portion of the literature review is to introduce the context of multiple roles, and more specifically, outcomes of competing roles (academic and athletic). The literature concerning identity theories reveals that role conflict results from competing demands placed on individuals leading to negative outcomes. On the other hand, additional studies demonstrate that some individuals, when faced with the competing demands of their multiple roles, perform better because success in one role motivates them to perform well in the other. Depending on whether these roles are internally or externally integrated into one's identity, they can lead to positive and/or negative experiences. Based

on the previous research findings, the existing findings have been categorized into two recognizable groups: a) positive outcomes (role accumulation, role balance) and b) negative outcomes (role conflict).

Positive Outcomes Associated with Multiple Roles

Research has shown that multiple roles, if internally integrated, can lead to positive performance and psychological outcomes. The notion of role accumulation (role expansion theory) has to do with the individual's desire to participate in numerous activities. Involvement in several different activities simultaneously often leads to one's identification with more than a single role (e.g. mother, wife, and employee; daughter, student, and athlete). As proposed by Sieber (1974), association with multiple roles in the context of "role accumulation" implies positive outcomes. Furthermore Sieber (1974) classified positive outcomes related to role accumulation into four types: (1) role privileges, (2) overall status security, (3) resources for status enhancement and role performance, and (4) enrichment of the personality and ego gratification. Similarly, others believe that multiple roles generate opportunities (i.e. social support, income), and improve one's self-image, psychological well-being, and health (Barnett & Hyde, 2001; Thoits, 1984).

To date, role accumulation has been discussed to a great extent in research and literature investigating how workforce participation affects women's health and life roles such as, wife and mother (Martikainen, 1995; McBride, 1990; Thoits, 1987; Waldron & Jacobs, 1989; Weatherhall, Joshi, & Macran, 1994). The findings from these studies suggest that women who occupied multiple roles experienced positive health outcomes (e.g. better overall health, longevity), in comparison to those who occupied a single role. In line with these positive findings in regard to role accumulation in women, several studies found positive relationships between academics and athletics in student-athletes (Chen, Snyder, & Magner, 2010; Ryska, 2002). Ryska (2002) found that young adults gained a sense of overall competence from participating in sport, which translated to other areas of their lives (i.e. school, social life). This study examined 258 male and female high-school student-athletes, and more specifically, the manner in which their motivational orientation moderated the effect of athletic identity on global competence perceptions (Ryska, 2002). In addition, participation in sport facilitated students' personal growth and competence in

academics (Ryska, 2002). Additional studies examined the positive relationship between athletic and academic involvement (Umbach, Palmer, Kuh, & Hannah, 2006; Wolniak, Pierson, & Pascarella, 2001) and found supporting evidence.

Role balance implies an individual's ability to fulfill duties, responsibilities, and expectations associated with two or more roles. Despite one's strong identification and desire to succeed in the occupied roles, this can often be difficult as one needs to continuously prioritize between the competing duties and responsibilities of the occupied roles. Individual capabilities as to successful prioritization vary, resulting in divergent outcomes. This is particularly apparent in student-athletes, who appear to be equally absorbed by their student role and their athlete role. Despite the popular belief that student-athletes value athletics more than academics, Goldberg and Chandler (1989) argued that adolescent value structure is more complex than has been indicated by earlier research. In support of this finding, Settles, Sellers, & Damas (2002) argue that many student-athletes cherish their two roles "as part of larger meta-role" (p.575). Hence, the major purpose of the proposed research was to illustrate that, as Settles et al. (2002) claim, being a student, and being an athlete, is equally important to many student-athletes, and different outcomes and experiences are result not only from how well they are able to prioritize between their academic and athletic duties and responsibilities, but also from their passion for both school and sport.

There is empirical evidence that some role combinations enhance on one's sense of well-being (Barnett, Marshall, & Pleck, 1992; Menaghan, 1989). In light of the individual's ability to carry out multiple roles, it is easy to see that there are two types of potential outcomes associated with role balance; positive role balance and negative role balance. On one hand, Barnett et al. (1992) argue that positive role balance is the tendency to become fully engaged in the performance of every role in one's total role system, to approach every typical role and role partner with an attitude of attentiveness and care. On the other hand, Barnett et al. (1992) claim that negative role balance is the tendency to become fully disengaged in the performance of every role. Evidently, role balance is both a behavioural pattern of acting across roles in a certain way and a corresponding cognitive-affective pattern of organizing one's inner life of multiple selves. One way in which the phenomenon of dual roles in student-athletes can be explored is by investigating motivation to engage in

both activities while relying on the DMP as theoretical framework.

Vis-a-vis these positive findings, evidence from another group of research studies, showed a negative relationship between athletics and academics (Settles et al., 2002; Pinkerton, Hinz, & Barrow, 1989). Consequently, to appropriately assess the available evidence, all the existing literature and research concerning student-athletes' roles was thoroughly explored.

Negative Outcomes Associated with Multiple Roles

Involvement in two or more roles concurrently can also lead to negative performance and psychological outcomes. Goode (1960) discusses role conflict or role strain in the context of negative outcomes, and explains that roles that occupy one's identity compete with each other, requiring one to prioritize between their duties and responsibilities. Multiplicity of roles imposes the double burden of overload and conflict inasmuch as, the more roles one accumulates, the greater the probability of running out of time and confronting role partners whose expectations are contradictory (Sieber, 1974).

Role-conflict has received considerable attention in the fields of psychology and business, which have addressed the conflict between family and work demands and expectations (Cooke & Rousseau, 1984; Duxbury & Higgins, 2003; Gutek, Searle, & Klepa, 1991; MacEwen & Barling, 1994). In addition to the work domain, role conflict is also evident in student-athletes. According to Adler & Adler (1987), student-athletes' identity involves three major roles: a) athletic, b) academic, and c) social. Studies have demonstrated that, due to the overly consuming nature of competing academic and athletic, the social role is almost non-existent in this population (Adler & Adler, 1987; Settles et al., 2002; Miller & Kerr, 2002).

Dualistic Model of Passion

Contribution of Self-Determination Theory

Self-Determination Theory (SDT), developed by Deci and Ryan (1985, 2000), explains one's motivation for an activity, as well as its internalization into one's identity. The SDT, and thus the process of activity internalization is important for two reasons: 1) it represents the point when valued activity becomes passion, and 2) depending on how

passion for an activity is internalized, intrinsically or extrinsically, this will lead to the development of either harmonious passion (HP) or obsessive passion (OP). Consequently, Vallerand and colleagues (2003) explored the existence of two types of passion, HP and OP, “as a result of an internalization process” (p. 757). The Dualistic Model of Passion posits that autonomously internalized activity will lead to development of harmonious passion, while controlled internalization will lead to development of obsessive passion.

To expound the concept of passion and its origins, it is necessary to address the contribution of the self-determination theory (SDT). In line with the SDT, Vallerand (2003, 2008) argues that passion for an activity is characterized by: 1) the goal pursuit to satisfy three basic psychological needs, and 2) internal and external motivation. Firstly, the effects of goal pursuit concern the degree to which people are able to satisfy their basic psychological needs, and achieve psychological health and well-being. Based on the SDT, the three basic psychological needs are: 1) autonomy, 2) competence, and 3) relatedness (Deci & Ryan, 1985, 2000). Autonomy implies one’s sense of choice and control to engage in an activity of interest or importance. To exemplify, one may greatly enjoy the game of tennis, and thus, willingly choose to play tennis. Competence entails one’s sense of efficiency and expertise, relative to a particular activity or interest. For example, one can develop a good rowing technique, and thus, have sense of a competency in rowing. Finally, relatedness addresses one’s sense of social attachment or belonging as a result of engagement in an activity. For instance, one may find participation in soccer provides the sense of belonging to a team, and thus, satisfies one’s need for relatedness. To sum up, based on the SDT, satisfaction of all three psychological needs is required for one to achieve psychological health and well-being, as well as develop passion for an activity.

Secondly, to explain the individual’s motivation for goal attainment, Deci and Ryan (1985, 2000) distinguished between intrinsic and extrinsic motivation. To that end, they characterized intrinsic or autonomous motivation with “rewards inherent in the activity...and the spontaneous, internal experiences that accompany the behaviour as the primary motivators” (Deci & Ryan, 1985, p.11). As reported by Ryan, Rigby, and Przybylski (2006), when three basic psychological needs are fulfilled, people are in the position and motivated to engage in a number of activities they find interesting and fulfilling. To illustrate, an athlete will find sport enjoyable and fun because it allows him/her

to independently and freely make decisions, feel competent about his/her expertise, and finally, belong to a team. Contrary to internal motivation, external or controlled motivation is influenced by external forces, and thus associated with “external pressure, competitive emphasis, and evaluative feedback” (Deci & Ryan, 1985, p.330). As stated in Ryan, Williams, Patrick, and Deci (2009), extrinsic motivation is “an engagement in an activity to attain an outcome separate from an activity or interest” (p.111). For instance, an athlete may be driven to play sport because he/she wants to make it a professional career (e.g. financial reasons). As previously stated, internal and external motivation provide a structural framework for describing and comprehending one’s motivation for engagement in an activity, which further aids in understanding and addressing outcomes and behaviours associated with activity participation.

In light of the proposed theoretical background, the question of whether one is internally or externally motivated, influences which type of passion one develops for an activity as well as the overall psychological and behavioural outcomes associated with it. Passion for an activity is generally defined as “a strong inclination and desire toward an activity that one likes, and finds important, and in which one invests time and energy” (Vallerand et al., 2003). Vallerand and colleagues (2003) explored the manifestation of two types of passion, HP and OP, “as a result of an internalization process” (p. 757). In line with the Self-Determination Theory (SDT), passionate activity can be pursued for internal (harmonious passion) or external goals (obsessive passion).

Until recently, there was little research explaining the development of passion for activities and interests, as defined by Vallerand et al. (2003). In 2010, Vallerand unified all the existing research on the concept of passion in an attempt to put forward the most recent advancements in this area. As a result, he inferred that the development of passion follows the three-step process: 1) activity selection, 2) activity valuation, and 3) internalization of an activity into one’s identity. In line with this, people elect to engage in activities they find appealing and compatible with their future goals and aspirations. Activity valuation represents the second step in development of passion for an activity, and as Vallerand (2010) claims, “can be seen as the intensity (or quantity) dimension (the fuel) underlying activity internalization and the development of passion” (p.110). The stronger one’s valuation for a particular activity is, the more likely one is to become passionate about it. Internalization of

an activity into one's identity is the final and the most important stage in the process of development of passion for an activity. Based on the literature addressing identity formation in sport, athletes tend to strongly identify with their sport and view themselves as, for example, "rowers" rather than "individuals who row". In order to perceptibly compare and contrast processes and outcomes associated with harmonious and obsessive passion for an activity, the chart in Figure 1 outlines their major characteristics.

Figure 1. Characteristics of Harmonious and Obsessive Passion

Type of Passion	Harmonious Passion	Obsessive Passion
How is it internalized?	Autonomously... individuals have freely accepted the activity as important for them without any contingencies attached to it.	Controlled... contingencies attached to the activity such as feelings of social acceptance or self-esteem.
Identity Construction	Does not overpower person's identity; it is in harmony with other activities.	Overpowers person's identity; causes conflict with other activities in person's life.
Activity Engagement	Individuals can choose when to engage and not engage in the passionate activity; flexible.	Individuals feel compelled to engage in the passionate activity; when they are not engaging in it they are thinking about it; rigid persistence.
Control	Individuals in control of the passionate activity	Passionate activity in control of individuals
Outcomes	Positive outcomes to the individual performance	Negative outcomes to the individual performance

Figure adapted from Vallerand et al., (2003, 2006, 2008)

This literature review aims to bring together the work examining the Dualistic Model of Passion in school (Stoeber, Childs, Hayward, & Feast, 2011; Vallerand et al., 2007 studies 1 and 2) and sport domain (Lafreniere, Jowett, Vallerand, Donahue, & Lorimer, 2008; Mageau, Vallerand, Charest, Salvy, Lacaille, Bouffard, & Koestner, 2009; Rip & Vallerand, 2009). The Dualistic Model of Passion has been applied and closely examined in a variety of other contexts including: a) gambling (Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002), b) work (Vallerand & Houffort, 2003; Vallerand, Paquet, Phillippe, & Charest, 2010), c) internet (Seguin-Levesque, Laliberte,

Pelletier, Blanchard, & Vallerand, 2003; Tosun, & Lajunen, 2009; Wang & Chu, 2007), d) interpersonal relationships (Philippe, Vallerand, & Houliort, 2007; Ratelle, Carbonneau, Mageau, & Vallerand, 2007), e) sport (Vallerand, Blanchard, Mageau, Koestner, Ratelle, Leonard, et al., 2003; Vallerand, Mageau, Elliot, Dumais, Demers, & Rousseau, 2008; Vallerand, Rousseau, Grouzet, Dumais, Grenier, & Blanchard, 2006), and various other domains. Finally, to the best of my knowledge, no study has specifically explored the possibility of passion for more than one activity, such as passion for school and passion for sport in the student-athlete population, or whether obsessive passion is all that bad and harmonious passion all that good” (Vallerand, 2010).

Mental Health in Student-Athletes

Conflict

Due to the academic role and athletic role being strongly unified in student-athlete identity, researchers and university administrators have acknowledged a growing relationship between the two roles (Adler & Adler, 1985). For example, while some student-athletes identify themselves in more traditional way, as students first and athletes second, the vast majority of others tend to view themselves as athletes first and students second (Adler & Adler, 1985). In support, research by Adler and Adler (1987) found that 47% of incoming athletes had high academic expectations and pursued professional majors such as engineering, business, and letters and sciences, while 45% identified less with academics and more with athletics, and thus, chose to enrol in more manageable academic programs. Other studies have shown that in their earlier years at universities, student-athletes tend to associate more strongly with their athletic roles. It is not until their later years in university that their focus shifts from athletic roles to career objectives (academic roles) (Lally & Kerr, 2005).

Although the majority of student-athletes identify with both roles (Woodruff & Schallert, 2008; Settles et al., 2002), their academic and athletic duties and responsibilities conflict with each other at times. Pinkerton, Hinz, and Barrow (1989) claim that, “...demands for athletic, academic, or social competence can become paramount. For those who master this period successfully, the rewards can be substantial. For those less fortunate, it becomes a potentially crippling personal experience” (pg.218). The two roles are

inseparable from each other, and generate a hybrid meta-role. For this reason, it is not surprising that research findings on student-athlete university experiences and outcomes often deviate from one another. So far, the literature has addressed interference between work as a passionate activity and other life activities (Caudroit, Boiche, Yannick, Le Scanff, & Trouilloud, 2011; Vallerand, Paquet & Phillippe, 2010). However, no research has examined the conflict between two passionate activities.

Passion and Mental-Health

The literature to date has demonstrated the existence of passion in the academic domain (Stoeber, Childs, Hayward, & Feast, 2011; Vallerand et al., 2007, studies 1 and 2) and the athletic domain (Lafreniere, Jowett, Vallerand, Donahue, & Lorimer, 2008; Mageau, Vallerand, Charest, Salvy, Lacaille, Bouffard, & Koestner, 2009; Rip & Vallerand, 2009). Limited number of studies have explored the relationship between passion and mental health concepts (Curran, Appleton, Hill, & Hall, 2011; Carboneau, Vallerand, Fernet, & Guay, 2008; Forest, Mageau, Sarrazin, & Morin, 2011; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Vallerand, Paquet, Philippe, & Charest, 2010). Few studies have explored the direct relationship between passion and mental health as measured by both its negative (e.g. stress, anxiety) and positive (e.g. well-being) constructs (Forest, et al., 2011). This study explored correlations between two passion types and variables pertaining mental health in the context of passion for work. Findings revealed that harmonious passion was positively related to mental health, while obsessive passion was directly and negatively predictive of mental health.

Abundance of studies explored the relationship between passion and well-being (Rousseau & Vallerand, 2008; Phillippe, Vallerand, & Lavigne, 2009; Bonneville-Roussy, Lavigne & Vallerand, 2010; Vallerand, Salvy, Mageau, Elliot, Pascale, Grouzet, & Blanchard, 2007; Stenseng, Rise, & Kraft, 2011; Vallerand, Mageau, Elliot, Dumais, Demers, & Rousseau, 2008). Differences in well-being between passionate and non-passionate individuals were explored in the sample of college students, undergraduate students, community-dwelling adults, and senior adults (Phillippe et al., 2009). The participants were divided into three groups: non-passionate, harmoniously passionate, and obsessively passionate, based on their Passion Scale scores. MANOVA was conducted with

gender, age, passion type and the two measures of self well-being as the dependent variables. The results demonstrated that harmoniously passionate individuals scored significantly higher on both, Eudaimonic well-being and Hedonic well-being than did non-passionate and obsessively passionate individuals. Further studies support these findings in athletes (Vallerand et al., 2006, Studies 2 and 3; Vallerand et al., 2007, Study 1) by showing the positive relationship between HP and well-being and negative relationship between obsessive passion and well-being (Vallerand et al., 2006, Studies 2 and 3). Findings concerning passion for studying and well-being reinforce the positive relationship between harmonious passion and well-being and the negative relationship between obsessive passion and well-being (Vallerand et al., 2007, Studies 1 and 2). Future research is warranted, as current evidence remains inconclusive about the relationship between obsessive passion and well-being (Vallerand et al., 2006, Studies 2 and 3).

Despite the relationship between passion and affective experiences (Mageau, 2005; Vallerand et al., 2006) as well as positive and negative emotions (Phillipe et al., 2009, Studies 1, 3, and 4), research to date has not extensively addressed the link between passion and psychological outcomes, such as depression, anxiety, and stress. To analyze the influence of the two passion types on positive and negative affect in athletes, Vallerand et al. (2006) conducted a correlational study with 210 competitive basketball players. The authors hypothesized that harmonious passion for basketball would be correlated with positive affect, while obsessive passion would be correlated with negative affect. The results confirmed the hypothesis: a) harmonious passion was significantly related to positive affect ($r=0.41$, $p<.001$) and not significantly related to negative affect and b) obsessive passion was significantly related to negative affect ($r=.27$, $p<.001$) and not significantly related to positive affect. To demonstrate the relationship between harmonious and obsessive passion and positive and negative emotions, Phillipe et al. (2009) assessed emotions in a group of basketball players. The sample consisted of 160 basketball players (60 females, 100 males). The study findings confirmed the hypothesis: 1) harmonious passion was positively associated with positive emotions and negatively associated with negative emotions and 2) obsessive passion was positively associated with negative emotions and unrelated to positive emotions. Findings from these two studies: a) demonstrate the connection between the two passion types and affective behaviours and emotions and b) establish groundwork for

exploring the two types of passion in relation to moderators such as depression, anxiety, stress, and well-being.

Passion in the context of academics has been investigated in only three studies (Stoeber et al., 2011; Vallerand et al., 2007, Studies 1 and 2). In two samples of participants, undergraduate psychology students and dramatic arts students, Vallerand et al. (2007) found that harmonious and obsessive passion positively predicted mastery goals while, harmonious passion positively and obsessive passion negatively related to academic performance. Stroeber et al. (2011) examined relationships between harmonious and obsessive passion and 1) three aspects of academic engagement (vigour, dedication, and absorption) and 2) three aspects of academic burnout (exhaustion, cynicism, and inefficacy). As hypothesized, results demonstrated positive correlations between harmonious and obsessive passion, and all three aspects of academic engagement. In terms of academic burnout, study findings revealed that harmonious passion was negatively correlated with exhaustion, cynicism, and inefficacy. Contrary to the study's hypothesis, obsessive passion was negatively correlated with cynicism and inefficacy, implying that in this sample obsessive passion was related to lower rates of burnout. Previous research findings have provided compelling evidence on the performance outcomes and concepts related to mental health (e.g. burnout) associated with harmonious and obsessive passion in school and sport domains, but these outcomes have not been examined congruently.

Summary of the Literature

Following the comprehensive literature review, the gap in literature concerning the Dualistic Model of Passion in individuals with multiple roles (student-athletes) is evident. Examining the Dualistic Model of Passion in student-athletes may be valuable for three reasons: 1) to demonstrate whether individuals can be passionate about more than one activity, 2) to explore psychological outcomes associated with each passion type and activity, and 3) to aid in predicting and overcoming negative psychological outcomes and understanding whether “harmonious passion is all that good and obsessive passion all that bad” (Vallerand, 2010, p.181). Since harmonious and obsessive passion may be moderators of divergent mental health outcomes, it is imperative to conduct further research concerning psychological outcomes associated with harmonious and obsessive passion (e.g. depression,

anxiety, stress, and well-being). Most importantly, these findings could aid in the advancement of the Dualistic Model of Passion and development of intervention programs, classes and/or workshops to assist Canadian university athletes.

A majority of the existing passion studies were correlational in nature and lacked consistency in use of well-validated and reliable measures of relationships between passion and depression, anxiety, stress, as well as academic and athletic performance. Although, the Dualistic Model of Passion in the university athlete population sample remains seriously under-investigated, prospects for future research in this domain are promising. To the best of my knowledge, no prior research has explored harmonious and obsessive passion for school and sport in a representative sample of Canadian university athletes.

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Appendices

Appendix A: Operational Definitions

Student-Athlete

The term *student-athlete* refers to “a participant in an organized competitive sport sponsored by the educational institution in which he or she is enrolled” and is used to describe the balance of being a full time student and a full time athlete (www.universitysport.ca). In the U.S. and Canada, this definition has the same meaning, but is restrained by slightly different requirements due to structures of intercollegiate athletics in the United States and Canada. According to the NCAA, student-athlete is an individual enrolled full-time in university while participating in university athletics for maximum of 20 hours per week during 4 years of athletic eligibility. Student-athletes in the United States are required to be enrolled in a minimum of 13 course credits during each semester, and pass 26 credits each year to be eligible to compete in their sport, while maintaining a minimum overall grade point average (www.ncaa.org). Likewise, in Canada, student-athletes are full-time students participating in university athletics. According to the CIS, they are “individuals between the ages of 17 and 28, attending a post secondary institution full-time and are eligible to compete for 5 years. They need to complete a minimum of 3 courses or 9 credit hours each term, or 3 full course or 6 half courses with a minimum of 18 credit hours during the academic year, while maintaining a minimum grade point average of 60%”(www.cis-sic.ca). For the purpose of this study, research performed in the U.S. will be used interchangeable with the research done in Canada. Therefore, it is crucial to recognize not only the similarities between the student-athlete eligibility requirements in the United States and Canada, but also consistencies in their university experiences.

Dual Roles

A substantial body of research has addressed the existence of multiple roles within individual’s identity. In line with this, the role theory literature points out that competing demands placed on individual result in role conflict, and thus, lead to lower performance and role satisfaction. On the other hand, additional studies demonstrate that some individuals, when faced with competing demands of their roles, perform better because success in one role motivates them to perform well in their other role.

A great number of studies have investigated dual-roles in student-athletes (Settles et al., 2002; Adler & Adler, 1985, 1987, 1991; Perrin, 1988; Lance, 1987, 2004). While in university, student-athletes are absorbed by their student role and their athlete role. For that reason, both roles are incorporated into their self-identity. In support, Goldberg and Chandler (1989) argued that adolescent value structure is more complex than has been indicated by earlier research, which justifies why many student-athletes strongly identify with both of their roles. Evidently, many student-athletes cherish both, their athlete and student, roles “as part of larger meta-role” (Settles et al., 2002, p.575). Hence, the major purpose of proposed research is to illustrate that, being a student, and being an athlete, is important to many student-athletes. Responsibilities associated with both roles tend to create conflict and role interference due to the low separation between their student and athlete identities (Settles et al., 2002). However, “separating two roles would allow the student-athlete to better focus on the demands and tasks of each role, allowing him or her to perform better in each role” (Settles et al., 2002, p.580), many student-athletes are unable to efficiently part two roles. Student-athletes’ inability to separate their athletic identity from their academic identity may be due to high interrelatedness of these two roles. Based upon these findings, it is necessary to address student-athletes’ commitment to both, athletics and academics, as one rather than two separate roles.

The Dualistic Model of Passion (DMP)

Passion is defined as “a strong inclination and desire toward an activity that one likes, and finds important, and in which one invests time and energy” (Vallerand et al, 2003), as measured by the Passion Scale. There are two types of passion, harmonious and obsessive passion. According to the theory, harmonious passion is positively associated with the overall experience and the quality of performance within the context of the passionate activity, while an obsessive passion is unrelated to it, or negatively related to it. Thus, student-athletes who are obsessively passionate would be expected to undergo greater difficulties when prioritizing between the tasks associated with athletics and/or academics, whereas harmoniously passionate student-athletes would be expected to be more successful at this task. Therefore, this study will use two terms, obsessive and harmonious passion, when discussing one’s passion toward athletics and academics. Furthermore, the study will attempt to explain how passion type impacts student-athlete’s performance and

psychological outcomes, and whether being passionate about more than one activity has an impact on these outcomes.

Appendix B

Study Assumptions

1. The sample characteristics were representative of Canada West Universities Athletic Associations student-athletes
2. Relationships between concepts in this study were sufficient and clear
3. Participants answered truthfully to survey items
4. Evidence generated through the survey was sufficient to evaluate and expand DMP to individuals with dual roles such as, student-athletes
5. All measurement instruments (DMP, DASS & SWLS) were valid, reliable and congruent with the study's conceptual framework

Study Delimitations

Eligible participants' met the following criteria:

1. Participants were Canada West Universities Athletic Associations varsity athletes
2. Participants were full-time students
3. DMP was the only instrument used to assess participants' passion for school (academics) and sport
4. DASS was the only instrument used to assess participants' depression, anxiety and stress

Study Limitations

This research had the following limitations:

1. At the time of survey, some study participants were in season, while others were off-season, which may have had an impact on their survey reports.
2. Student-athletes self-reported on questionnaire items, which may have resulted in reporting bias or social desirability bias.
3. The study findings can only be generalized to the sample of recruited student-athletes and thus, may not be fully representative of the Canada West University Athletics Association student-athlete population.
4. Limitations to the Dualistic Model of Passion and how student-athletes interpreted passion for academics (school) and passion for sport
5. Relationships between variables were determined, but no causality can be made

Appendix C

Passion for Academics Scale

While thinking of your academics and using the scale below, please indicate your level of agreement with each item.

The rating scale is as follows:

- 1 Not Agree at All
- 2 Very Slightly Agree
- 3 Slightly Agree
- 4 Moderately Agree
- 5 Mostly Agree
- 6 Strongly Agree
- 7 Very Strongly Agree

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 1. My academics are in harmony with the other activities in my life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I have difficulties controlling my urge to work on my academics. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. The new things that I discover through academics allow me to appreciate it even more. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I have almost an obsessive feeling for my academics. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Academics reflect the qualities I like about myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Academics allow me to live a variety of experiences. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. Academics are the only thing that really turns me on. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. My academics are well integrated in my life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. If I could, I would only work on my academics. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. My academics are in harmony with other things that are part of me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. Academics are so exciting that I sometimes lose control over it. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I have the impression that my academics control me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. I spend a lot of time on my academics. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. I like academics. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Academics are important for me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Academics are a passion for me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Appendix D

Passion for Sport Scale

While thinking of your academics and using the scale below, please indicate your level of agreement with each item.

The rating scale is as follows:

1. Not Agree at All
2. Very Slightly Agree
3. Slightly Agree
4. Moderately Agree
5. Mostly Agree
6. Strongly Agree
7. Very Strongly Agree

1. My sport is in harmony with the other activities in my life.	1	2	3	4	5	6	7
2. I have difficulties controlling my urge to practice my sport.	1	2	3	4	5	6	7
3. The new things that I discover through sport allow me to appreciate it even more.	1	2	3	4	5	6	7
4. I have almost an obsessive feeling for my sport.	1	2	3	4	5	6	7
5. My sport reflects the qualities I like about myself.	1	2	3	4	5	6	7
6. My sport allows me to live a variety of experiences.	1	2	3	4	5	6	7
7. My sport is the only thing that really turns me on.	1	2	3	4	5	6	7
8. My sport is well integrated in my life.	1	2	3	4	5	6	7
9. If I could, I would only participate in my sport.	1	2	3	4	5	6	7
10. My sport is in harmony with other things that are part of me.	1	2	3	4	5	6	7
11. My sport is so exciting that I sometimes lose control over it.	1	2	3	4	5	6	7
12. I have the impression that my sport controls me.	1	2	3	4	5	6	7
13. I spend a lot of time on my sport.	1	2	3	4	5	6	7
14. I like my sport.	1	2	3	4	5	6	7
15. My sport is important for me.	1	2	3	4	5	6	7
16. My sport is a passion for me.	1	2	3	4	5	6	7

Appendix E

Conflict

While thinking of your academics and sport and using the scale below, please indicate your level of agreement with each item.

	Not Agree at All 1	Very Slightly Agree 2	Slightly Agree 3	Moderately Agree 4	Mostly Agree 5	Strongly Agree 6	Very Strongly Agree 7				
1. My participation in sport negatively impacts my academic performance.	1	2	3	4	5	6	7				
2. My academic responsibilities negatively impact my sport performance.	1	2	3	4	5	6	7				
3. My participation in sport conflicts with my academic responsibilities.					1	2	3	4	5	6	7
4. My academic responsibilities conflicts with my athletic responsibilities.					1	2	3	4	5	6	7
5. I most often see myself as student first, and athlete second.					1	2	3	4	5	6	7

Appendix F

Depression, Anxiety and Stress Scale

DASS21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time

3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3

18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix G

Satisfaction With Life Scale

SWLS 5

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

The rating scale is as follows:

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

- | | | |
|---|---|---------------|
| 1 | In most ways my life is close to my ideal. | 1 2 3 4 5 6 7 |
| 2 | The conditions of my life are excellent. | 1 2 3 4 5 6 7 |
| 3 | So far I have gotten the important things I want in life. | 1 2 3 4 5 6 7 |
| 4 | If I could live my life over, I would change almost nothing. | 1 2 3 4 5 6 7 |
| 5 | If I could live my life over, I would change almost everything. | 1 2 3 4 5 6 7 |

Appendix H

Basic Personal Characteristics

1. Gender: Male Female

2. Age: _____

3. Year of study: 1st 2nd 3rd 4th 5th 6th or more

4. In what year of eligibility are you in: 1st 2nd 3rd 4th 5th

5. Sport: _____

6. What is your overall GPA : _____

7. How many hours per week do you spend training with your team?

0-5 6-10 11-15 16-20 25 +

8. How many hours per week do you spent training on your OWN?

0-5 6-10 11-15 16-20 25 +

9. How much time do you spent at school (in classes)?

0-5 6-10 11-15 16-20 25 +

10. How much time do you spend studying outside of classroom time?

0-5 6-10 11-15 16-20 25 +

Appendix I

Table 7. Means, Standard Deviations, Skewness, Kurtosis, and Reliability

	Mean	S.D.	Skewness	Kurtosis	Alpha
Conflict	3.80	1.48	.26	-.47	.88
Passion for School					
HP	4.40	1.05	-.31	-.36	.81
OP	2.27	.97	1.11	1.24	.73
Passion for Sport					
HP	5.44	.95	-.79	.61	.83
OP	4.16	1.33	-.17	-.91	.84
Depression	9.69	9.17	1.20	.90	.87
Anxiety	7.89	7.11	1.00	.97	.71
Stress	14.98	10.25	.40	-.81	.86
Satisfaction with Life	25.19	5.87	-.55	-.03	.82

Note: n=148

Appendix J

Information Letter

Prioritizing Between Athletics and Academics: Exploring the Dualistic Model of Passion in Student-Athletes

You are being invited to participate in a study titled **Prioritizing Between Athletics and Academics: Exploring the Dualistic Model of Passion in Student-Athletes**. The primary investigator is Jelena Dukic, a graduate student in the School of Exercise Science, Physical and Health Education at the University of Victoria. This study is being conducted as part of the requirements for a Master's of Arts (Kinesiology) degree and will be conducted under the supervision of Dr. Ryan Rhodes and Dr. John Meldrum, professor and assistant professor in the Faculty of Education at the University of Victoria. If you have any questions regarding the nature of this research please contact Jelena Dukic at xxxx or xxxx.

STUDY PURPOSE: The existing research has established that, throughout university, student-athletes occupy dual roles and continuously prioritize between duties and responsibilities of the two. Research has shown that multiple roles are associated with the divergent psychological outcomes (e.g. stress, depression, anxiety, and self wellbeing). Despite these findings, however, little is known about the influence of passion (and passion type in particular) on student-athlete's ability to perform in both fields. Therefore, the purpose of this proposed study is to 1) investigate passion for athletics and/or academics in student-athletes (e.g. development process of passion type), and 2) the relationship between passion type and a) psychological outcomes (e.g. wellbeing, depression, anxiety and stress) as well as b) performance (e.g. academic and athletic). The findings from this study will be written for publication in peer-reviewed journals, and presented at regional, national, and international conferences to help inform future research strategies aimed at understanding the university experience of Canadian student-athletes.

IMPORTANCE OF THIS RESEARCH: The issue of student-athlete university experience (e.g. psychological outcomes and academic and athletic performance) is becoming a focus across Canadian post-secondary institutions. For this reason, research examining the process of prioritizing between athletic and academic duties and responsibilities (examined in terms of passion) is critical for the prevention of negative psychological outcomes and performance in this population.

SELECTION OF PARTICIPANTS: You are being asked to participate in this study because you meet our inclusion criteria of being a full-time university student-athlete.

WHAT DO PARTICIPANTS HAVE TO DO? If you volunteer to participate, you will be asked to complete an online survey that will take approximately 30 minutes of your time. You will be asked to provide basic demographics (e.g., age, sport, year in academic program, year in sport eligibility, GPA). In addition, you will be asked to various questions about your passion for sport and/or school (Dualistic Model of Passion Questionnaire) and motivation for sport and school (Sport Motivation Scale and Academic Motivation Scale).

Finally, you will be asked to identify your present levels of depression, stress and anxiety, as well as wellbeing (DASS and Satisfaction with Life Scale).

BENEFITS OF PARTICIPATING: Little research investigating Canadian student-athlete university experience exists. Furthermore, to the best of my knowledge, no research has applied an established framework for measuring passion in individuals with multiple roles (e.g. student-athletes). Conducting research grounded in theory is a necessary first step in developing appropriate interventions that target student-athletes. Finally, insight you provide will not only benefit future research aiming to explain the Dualistic Model of Passion among individuals with multiple roles, but also inform future student-athletes and targeted interventions.

COMPENSATION: IF YOU WOULD LIKE TO PARTICIPATE IN A DRAW FOR PRIZES (2 Subway and 2 Starbucks gift cards), you will be provided with the opportunity to enter your email address on the first page of the survey link. To be entered in a draw, you have to complete the survey. If you choose to provide your email address for the purposes of the draw for gift cards, your email address will be separated from the survey and your answers will not be connected to your email address in any way.

PERSONAL CONFIDENTIALITY AND ANONYMITY: Your confidentiality and the confidentiality of the data will be protected by using online encrypted software that requires a case-sensitive password only known by the primary investigator and her academic supervisors. **No personal identification including the name, contact information, and personal details of the participants will be obtained, except if you choose to provide your email address for the purposes of the draw for gift cards, your email address will be separated from the survey and your answers will not be connected to your email address in any way.**

Your online survey will be assigned a specific code and your responses will be referred to and identified by your code throughout the remainder of the study. All results will be identified as **group data only**. The findings of this study may be shared at scholarly conferences and in peer-reviewed academic journals. All of the information that you and the other participants contribute will be kept anonymous and confidential in either locked file cabinets or on a computer requiring a password only known by the primary investigator and her academic supervisors.

Your participation in this research is completely voluntary. If you decide to participate by filling-out the online questionnaire, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data will be used in a summarized form with NO identifying information.

Since you are asked to respond to questionnaires that include satisfaction with life, as well as depression, anxiety and stress, there is a remote possibility that these types of questions could pose psychological discomfort if you are experiencing these kinds of difficulties. If this is the case, please contact Uvic Counselling Services at the University Centre, on the second floor (room B270). If you wish to make an appointment with a counsellor, please

phone 250-721-8341. Hours of operation are 8:30-4:30 p.m. Monday through Friday. The University Centre is on Ring Road, across the street from the Campus Services Building. Check this [campus map](#).

In addition to being able to contact the research team at the above phone number and emails, you may verify the ethical approval of this study, or address any questions you might have, by contacting the Human Research Ethics Board at the University of Victoria 250-472-4545. Thank you for considering this research.

Appendix K

Mediator Letter

Dear _____,

My name is *Jelena Dukic* and I am a graduate student working under the supervision of Dr. Ryan Rhodes and Dr. John Meldrum in the School of Exercise Science, Physical and Health Education at the University of Victoria. As part of the requirements for my Master's of Arts (Kinesiology) degree, I will be conducting some very exciting research. I am exploring the Dualistic Model of Passion among university student-athletes, who are full-times students and full-time university student-athletes.

The existing research has shown that the need to prioritize between the athletic and academic duties and responsibilities is related depression, anxiety, stress, and overall wellbeing among student-athletes. This is concerning considering the increasing popularity of university sports and number of student-athletes enrolled in post-secondary institutions across Canada. Therefore, the aim of this study is to 1) investigate passion for athletics and/or academics in student-athletes (e.g. development process and change in passion type), and 2) the relationship between passion type and a) psychological outcomes (e.g. depression, anxiety and stress) as well as b) performance (e.g. academic and athletic). To achieve this I have created an online student-athlete survey that will take about 30 minutes to complete. Participants will be informed of the study through a recruitment email, be provided a survey link, and have access to complete the study using online software.

The findings from this study will be written for publication in peer-reviewed journals, and presented at regional, national, and international conferences to help inform future research strategies aimed at understanding and promoting challenges and lives of university student-athletes. This research will be applied for the Human Research Ethics Board approval at the University of Victoria to be a study conducted at the Canada West athletics departments.

As part of the ethical considerations for this study, I must have an **appointed proxy member** distribute the recruitment materials via email to student-athletes. For that purpose, I have prepared 3 short emails to be sent over a 4-week period to obtain the highest response rate from student-athletes. Emails may be sent using a listserv or the personal email. If you choose to distribute the emails via a listserv, ineligible participants will be screened out on the first section of the online survey.

Would you be willing to act as my appointed proxy to send out the study invitation, online survey link, and reminder emails? Once participants receive the study invitation (includes my contact information) you can simply forward any inquiries to me directly or the participants can decide to contact me directly with any further questions regarding the research.

If you have any questions regarding this research, please do not hesitate to contact me at xxxx or xxxx or my supervisors, Dr. Ryan Rhodes at xxxx or xxxx or Dr. John Meldrum at [xxxx](#) or xxxx. You can verify the ethical approval of this study by contacting the Human

Research Ethics Board at ethics@uvic.ca or 250-472-4545.

Thank you very much for your consideration and time! I look forward to hearing from you regarding your decision to act as my appointed proxy member for the distribution of the study materials.

Sincerely,

Jelena Dukic

Masters of Arts in Kinesiology (in progress)

School of Exercise Science, Physical and Health Education

University of Victoria, Victoria, British Columbia

Work: xxxx

Email: xxxx

Appendix L

Recruitment Email

Dear Student-Athlete,

My name is *Jelena Dukic* and I am a graduate student working under the supervision of Dr. John Meldrum and Dr. Ryan Rhodes in the School of Exercise Science, Physical and Health Education at the University of Victoria. As part of the requirements for my Master's of Arts (Kinesiology) degree, I will be conducting some exciting university research!

I am investigating the psychological outcomes and performance associated with passion for sport and/or school in full-time university student-athletes. Research has shown that the need to prioritize between the athletic and academic duties and responsibilities (in student-athletes like yourself) is related to depression, anxiety, stress, and wellbeing. This is concerning considering the increasing popularity of university sports and number of student-athletes enrolled in post-secondary institutions across Canada. To the best of my knowledge, research investigating passion has not yet addressed passion in individuals with dual roles. For this reason, this UVic wide study aims to 1) investigate passion for athletics and/or academics in student-athletes (e.g. development process and change in passion type), and 2) the relationship between passion type and a) psychological outcomes (e.g. depression, anxiety and stress) as well as b) performance (e.g. academic and athletic). To measure this, I have developed a theoretically grounded, online student-athlete questionnaire that will take at most 30 minutes to complete. YOUR participation in this research is of great importance to help inform future strategies aimed at improving student-athlete's university experience as well as further the Dualistic Model of Passion. If you choose to participate, please note that your participation is completely voluntary.

IF YOU WOULD LIKE TO PARTICIPATE IN A DRAW FOR PRIZES (2 Subway and 2 Starbucks gift cards), please write your email in the box provided on the first page of the survey link. To be entered in a draw, you have to complete the survey. If you choose to provide your email address for the purposes of the draw for gift cards, your email address will be separated from the survey and your answers will not be connected to your email address in any way.

To complete the survey:

<http://www.askitonline.com/survey/passion-in-student-athletes/>

The online survey asks you specific questions about 1) your passion for sport and school, 2) your motivation for sport and school and 3) your self-perceived psychological state (e.g. stress, well-being). The survey is based on Vallerand's (2000, 2003) Dualistic Model of Passion to help predict the individual reasons for participating in both, athletics and academics during university.

I am aware that you are extremely busy, and I certainly appreciate your consideration and

time for helping me with this research, which should ultimately benefit future student-athletes. If you have any questions about the study, please contact me at xxxx or xxxxx, or my supervisors, Dr. John Meldrum at xxxx or xxxx and Dr. Ryan Rhodes at xxxx or xxxx.

For your convenience, I have attached an information letter outlining the study in more detail.

Thank you for taking the time to consider being a part of this important research.

Sincerely,
Jelena Dukic
Masters of Arts in Sport Psychology (c)
School of Exercise Science, Physical and Health Education
University of Victoria, Victoria, British Columbia
Email: xxxx

Appendix M

Consent Form

Prioritizing Between Athletics and Academics: Exploring the Dualistic Model of Passion in Student-Athletes

Jelena Dukic – University of Victoria, Masters Candidate

Dr. Ryan E. Rhodes – Professor, University of Victoria

Dr. John Meldrum – Assistant Professor, University of Victoria

CONSENT FORM

Thank you for considering participation in the research study titled “**Prioritizing Between Athletics and Academics: Exploring the Dualistic Model of Passion in Student-Athletes**” conducted by Jelena Dukic (jdukic@uvic.ca or 250-882-8918) a graduate student in the School of Exercise Science, Physical and Health Education at the University of Victoria. The purpose of this research program is to evaluate the passion type for academics and/or athletics among student-athletes as well as the relationship between passion type and a) psychological outcomes (e.g. depression, anxiety and stress) and b) performance (e.g. academic and athletic).

We ask that you complete an online survey, which should take no longer than 30 minutes of your time. There are no right or wrong answers and your participation is completely voluntary. Please provide responses that are as honest and accurate as possible. If you choose to participate, please note that your participation is completely voluntary. No information regarding your personal contact information will be asked, except if you choose to provide your email address for the purposes of the draw for gift cards, in which case your email address will be separated from the survey and your answers will not be connected to your email address in any way. Should you decide to withdraw from the study prior to completing the survey, please note that your responses will be kept and used as summary group data. Access to the online survey data is not accessible to anyone other than the primary investigator and her academic supervisors, Dr. Ryan Rhodes and Dr. John Meldrum.

The online survey uses encrypted software that requires a secure password only known by the primary investigator and her academic supervisors. All results will be interpreted and displayed as group data only with no personal identifying information. As well, all data will be stored in a secure location either in locked file cabinets or on encrypted password protected computer files in the office at the University of Victoria for five years after collection. All data will be deleted, shredded, and permanently destroyed after the five year time period.

If you have any concerns regarding the study, please contact Jelena Dukic at xxxx or xxxx or Dr. Rhodes at xxxx or xxxx or Dr. John Meldrum at [xxxx](#) or xxxx. This research project has met the rigorous requirements for ethical approval from the University of Victoria Human Research Ethics Board. You may also verify the ethical approval of this study, or raise any concerns you might have, by contacting the University of Victoria Human

Research Ethics Committee at 250-472-4545 or ethics@uvic.ca.

IF YOU WOULD LIKE TO PARTICIPATE IN A DRAW FOR PRIZES (2 Subway and 2 Starbucks gift cards), please write your email in the box provided on the first page of the survey link. To be entered in a draw, you have to complete the survey.

By clicking “NEXT” you have indicated that you understand the above conditions of the participation in this study, elect to take part in the study, and that you have had the opportunity to have your questions answered by the researchers.

Appendix N

Email Reminder to Student-Athletes

Dear Student-Athletes,

This is just a short reminder if you have not yet accessed the online Student-Athlete survey, you can do so by clicking the following link. If you have already completed this survey, nothing further is required. Thank you! I greatly appreciate you taking the time out of your busy schedule.

IF YOU WOULD LIKE TO PARTICIPATE IN A DRAW FOR PRIZES (2 Subway and 2 Starbucks gift cards), please write your email in the box provided on the first page of the survey link. To be entered in a draw, you have to complete the survey. If you choose to provide your email address for the purposes of the draw for gift cards, your email address will be separated from the survey and your answers will not be connected to your email address in any way.

<http://www.askitonline.com/survey/passion-in-student-athletes/>

The online survey takes approximately 30 minutes of your time and asks you specific questions about 1) your passion for sport and school, 2) your motivation for sport and school, and 3) your self-perceived psychological state (e.g. stress, wellbeing). The survey is based on Vallerand's (2000, 2003) Dualistic Model of Passion to help predict the individual reasons for participating in both, athletics and academics during university.

This is the FIRST known Canadian study investigating the impact of passion type on student-athletes as related to both, athletics and academics. The current state of the motivational literature will be expanded by this research and the understanding and knowledge gained from this study will be shared with the athletics department and university administrators, health researchers and professionals, and policy makers to help inform future educational and health promotion initiatives in Canadian university student-athletes. Thus, YOUR participation in this research is extremely important and completely voluntary.

I am aware that it is an extremely busy time of year for you, and I greatly appreciate you taking the time to consider participating in this research. If you have any questions about the study, please contact me at xxxx or xxxx, or my supervisors, Dr. Ryan Rhodes at xxxx or xxxx or Dr. John Meldrum at [xxxx](#) or xxxx.

Thank you for considering this research.

Sincerely,
Jelena Dukic
Masters of Arts in Kinesiology (in progress)
School of Exercise Science, Physical and Health Education
University of Victoria, Victoria, British Columbia
Work: xxxx
Email: xxxx