

The Role of Athletic Identity and Passion in Predicting Burnout in Adolescent Female Athletes

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This study examined whether adolescent athletes' levels of sport burnout would be predicted by their level and type of both passion and athletic identity. Female high-school-aged athletes ($N = 186$) completed a series of questionnaires to measure study variables. The results of three hierarchical multiple regression analyses revealed that athletes' levels of harmonious passion served as negative predictors for all three dimensions of burnout, while obsessive passion positively predicted scores only on the exhaustion subscale. In addition, the subdimensions of athletic identity contributed a unique amount to the prediction of some aspects of burnout. These results indicate that both passion and athletic identity are important correlates or predictors of burnout levels, with harmonious passion offering the most protective effects.

Keywords: harmonious passion, obsessive passion, motivation, high school athletes

Youth sport has become more professionalized in recent years with more hours devoted to in-season practice and training, increased numbers of games and tournaments, higher demands for participation in off-season training programs, and earlier specialization in one particular sport (Gould & Whitley, 2009). One of the concerns for young athletes who participate within such a professionalized context is the possible development of burnout. In a recent study with a large sample of adolescent elite athletes (ages 16–21 years), Gustafsson et al. (Gustafsson, Kenttä, Hassmén, & Lundqvist, 2007) did find evidence of burnout. Although only a small percent (1–9% of females and 2–6% of males) scored in the upper third on all three of the subscales, the athletes as a group, did exhibit a range of scores, thus suggesting considerable interindividual variability within this population as to where they lie on the burnout continuum.

Over the past two decades, a fairly large number of studies have been conducted to examine burnout in athletes from various age groups, sports types, and competitive levels. Recent reviews of this research (e.g., Eklund & Cresswell, 2007; Goodger & Kenttä, 2012; Gould & Whitley, 2009) have rather consistently supported the notion that athletes do differ from each other as to where they lie on the burnout continuum. Although a relatively small number of them exhibit very high

levels of burnout, the rest do range from very low to moderately high scores. Furthermore, the few longitudinal studies that have been conducted (e.g., Cresswell, 2009; Cresswell & Eklund, 2006) indicate some modest increases in burnout scores across a season. Based on the results cited earlier in this paragraph, reviewers support the need to continue examining issues surrounding burnout in sport contexts.

Burnout in Sport Settings

Although a number of different theoretical and empirical conceptualizations of burnout have been offered in the sport research literature (see reviews by Eklund & Cresswell, 2007; Goodger & Kenttä, 2012; Gould & Whitley, 2009), most current studies employ the definition and measurement system developed by Raedeke (Raedeke, 1997; Raedeke & Smith, 2001) who defined burnout as an experiential syndrome comprised of physical/emotional exhaustion, sport devaluation and a reduced sense of accomplishment. Athletes who score high on the exhaustion dimension may feel physically and emotionally fatigued or drained due to the demands of intense training and competition schedules. The sport devaluation dimension reflects athletes' loss of interest in the sport and negative attitude toward participation (e.g., "don't really care anymore"), while the reduced accomplishment segment describes athletes' sense that they are no longer able to reach the goals or level of performance that are desired.

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Much of the sport psychological research on burnout has focused on causative factors (Eklund & Cresswell, 2007; Goodger & Kenttä, 2012; Gould & Whitley, 2009). In particular, a number of individual difference factors (e.g., high competitive trait anxiety, selected forms of perfectionism, poor coping skills, non-self-determined motivational orientation, feelings of entrapment) have been identified as possible correlates or causes of higher levels of burnout in athletes. Passion and athletic identity are two other individual difference constructs that may be theoretically and empirically related to burnout levels.

Passion in Sport

Vallerand and colleagues (Vallerand, 2012; Vallerand & Houliort, 2003; Vallerand et al., 2003) define passion as “a strong inclination toward an activity that people like (or even love), that they find important, and in which they invest time and energy” (Vallerand et al., 2003, p. 757). Furthermore, the activity that an individual may feel passionate about is not really just an activity in which she or he participates. Rather, that activity actually becomes a central portion of that person’s identity.

The dualistic concept of passion (Vallerand, 2012; Vallerand & Houliort, 2003; Vallerand et al., 2003) posits the existence of two distinct forms of passion (harmonious and obsessive), and the type of passion that individuals exhibit toward an activity is determined by how that activity is internalized into their identity. Harmonious passion results from an autonomous internalization of the activity into individuals’ identity. Thus, they perceive that it is their own choice to identify strongly with that activity, and they feel no outside pressure to participate in it. Furthermore, although these individuals realize that the activity does take a significant portion of their time and energy, it does not overpower other aspects of their identity and, therefore, is not in conflict with other areas of their lives.

Conversely, Vallerand and his colleagues (Vallerand, 2012; Vallerand & Houliort, 2003; Vallerand et al., 2003) hypothesized that obsessive passion results from a controlled internalization of the activity into self-identity (i.e., intrapersonal or interpersonal pressures based on contingencies associated with participation of the activity). Intrapersonal pressures may be seen as an uncontrollable urge to continue participating in an activity because of the perceived thrill experienced through participation or from feelings of guilt or shame that an individual may perceive when not engaged in the activity. In general, individuals who hold an obsessive passion for an activity typically feel compelled to participate, and their engagement in it is, or never was, under their own control. Thus, the activity eventually consumes a disproportionate portion of the individuals’ identity and may lead to conflict with other aspects of their lives.

A potential relationship between passion and burnout was first investigated in occupational settings. In a 2008 study, Carbonneau, Vallerand, Fernet and Guay measured passion and burnout levels in teachers over the course of

a semester. Their results showed that an increase in harmonious passion from initial testing to a time point that was three months later predicted decreases in burnout, while increases in obsessive passion across that same time period were unrelated to burnout. In a second study, Vallerand, Paquet, Philippe, & Charest (2010) investigated the passion-burnout relationship in a group of nurses and found that harmonious passion prevented burnout through a positive association with work satisfaction and a negative association with conflict. In contrast, obsessive passion was unrelated to work satisfaction and indirectly promoted burnout through a positive relationship with work conflict. In both studies, then, harmonious passion prevented the development of burnout, while obsessive passion was either unrelated to or actually contributed to an increase in burnout. In their discussion, Vallerand et al. (2010), compared passion to a double-edged sword:

On the one hand, one type of passion (obsessive) is conducive to burnout, whereas on the other hand, the other type of passion (harmonious) prevents its occurrence. Thus, an important issue, with respect to burnout, is not whether someone is passionate or not toward work but rather whether someone displays a harmonious or an obsessive passion. (p. 309)

The potential link between passion and burnout has also begun to be explored in the sport context. Gustafsson, Hassmén, & Hassmén (2011) measured passion, burnout, and related variables (perceived stress, negative affect) in a sample of athletes from a range of sports. Their results indicated that athletes who exhibited the obsessive form of passion scored higher in burnout, perceived stress, and negative affect than did their peers who exhibited the harmonious form of passion. However, somewhat different results were found by Curran, Appleton, Hill, and Hall (2011) who administered self-report surveys to 149 young male elite soccer players from the United Kingdom to measure their type and level of passion, burnout, and motivational orientation. Using path analytic techniques, Curran et al. (2011) found support for a model that linked harmonious passion to low levels of burnout, as mediated by self-determined motivational orientation. Thus, athletes who indicated higher levels of harmonious passion also exhibited high levels of self-determined motivation, which, in turn, significantly predicted lower levels of burnout. In contrast, obsessive passion was found to be unrelated to either burnout or self-determined motivational orientation. As Curran and his colleagues noted in their discussion of the results, more research is needed to verify the differential results of harmonious and obsessive passion as predictors of burnout in adolescent athletes. Furthermore, as they also pointed out, their study sample included only male adolescent athletes. Thus, such results may not apply to athletes outside of this demographic.

Based on these initial but mixed results regarding the passion-burnout connection, the current study was designed to investigate the predictive link between both forms of passion and burnout in a sample of female

adolescent athletes. In addition, however, a second individual difference variable, athletic identity, that appears to be closely related to passion was also incorporated into this study. As noted in the following section, the research examining the link between athletic identity and burnout has produced conflicting results. Thus, it was deemed important to also incorporate this variable into the current study.

Athletic Identity

Athletic identity was defined by Brewer, Van Raalte, and Linder (1993) as the degree to which an individual identifies with the athlete role. Individuals with high athletic identity place great importance on their success or failure in the athletic realm and may attribute large portions of their self-worth to these accomplishments. Although athletic identity was developed as its own construct, it is likely highly related to the passion construct. Specifically, Vallerand and colleagues (Vallerand, 2012; Vallerand & Houlfort, 2003; Vallerand et al., 2003) suggested in their dualistic model of passion that individuals who have a strong passion (either harmonious or obsessive) for an activity perceive that activity as a central aspect of their identity (i.e., the activity itself becomes so self-defining that it is internalized within those individuals' identity).

Early research studies that examined the link between athletic identity and burnout were primarily based on Coakley's (1992) notion that burnout should be considered less of a negative or problematic characteristic of the individual athlete and more as a social issue. Specifically, he suggested that adolescents who become heavily invested (via social forces) in their role as an athlete may develop a constricted or unidimensional self-identity (e.g., see themselves primarily as athletes) in contrast to their peers who are able, through participation in a range of activities, to develop a more multidimensional or multifaceted self-identity. Furthermore, adolescents with a unidimensional athletic identity may suffer burnout, especially under conditions when they do not achieve what was expected of them. In his interviews with adolescent athletes who had been identified as burned out, Coakley found support for this idea. Furthermore, subsequent qualitatively-based studies (e.g., Gould, Tuffey, Udry, & Loehr, 1997; Gustafsson, Hassmén, Kenttä, & Johansson, 2008; Gustafsson et al., 2007) also found support for the idea that high athletic identity was associated with high burnout levels.

In contrast, other studies with adolescent athletes found no relationship between athletic identity and burnout (e.g., Gould, Tuffey, Udry, & Loehr, 1996; Verkooijen, van Hove, & Dik, 2012). To complicate the issue even more, a couple of studies (Black & Smith, 2007; Raedeke, 1997) found that athletic identity was negatively related to burnout levels in adolescent athletes. That is, athletes with higher levels of athletic identity were actually found to have lower levels of burnout.

One explanation for the conflicting findings may be that athletic identity has most typically been measured

as a unidimensional construct. However, factor analytic studies (e.g., Brewer & Cornelius, 2001; Hale, James, & Stambulova, 1999; Li & Andersen, 2008) of the primary tool that has been used to measure athletic identity, the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993) has resulted in the identification of three dimensions. These include (a) social identity (extent to which individuals view themselves as occupying socially recognized athlete roles); (b) exclusivity (extent to which individuals perceive that their self-worth and identity is determined only by performance in the athlete role); and (c) negative affectivity (extent to which individuals experience negative affect in response to undesirable outcomes in the athletic domain). As noted by Black and Smith (2007), it seems possible that the exclusivity and, possibly, the negative affectivity dimensions may more closely resemble the form of athletic identity described by Coakley (1992) as a unidimensional and constricted self-identity. In contrast, the social identity dimension may be less restrictive and more positive in nature. Furthermore, the three dimensions may also be related in differential ways to the two forms of passion, with social identity more linked to harmonious passion and exclusivity and negative affectivity more closely associated with obsessive forms of passion.

Overview of Current Study

In general, then, the studies reviewed in the previous sections suggest that both level and type of passion, as well as level and type of athletic identity may be individual difference factors that contribute to burnout levels in adolescent athletes. However, the research to date reveals some mixed results for both factors. Furthermore, the combination of passion and athletic identity as potential predictors of burnout has not yet been examined. Therefore, the purpose of the current research study was to test whether passion and athletic identity, in combination, can predict levels of burnout in older adolescent female athletes. The decision to focus on female athletes was made based on the fact that a previous study examining the link between passion and burnout in an adolescent sample (Curran et al., 2011) included only males. Consistent with the research and theory reviewed in the previous sections, it was specifically hypothesized that harmonious passion, combined with social identity as an athlete, would be negatively related to all forms of burnout. In contrast, it was also hypothesized that obsessive passion, combined with the exclusivity and negative affectivity dimensions of athletic identity, would be positively related to all forms of burnout.

Method

Participants

Study participants included 186 female adolescent athletes between the ages of 16 and 18 ($M = 16.64$, $SD = .63$) who were current members of a high school or high school-aged club team. The majority of these athletes were sopho-

mores ($n = 72$) or juniors ($n = 97$) in high school, with a few being first years ($n = 3$) or seniors ($n = 14$). Athletes were from a variety of individual and team sports including volleyball ($n = 98$), field hockey ($n = 22$), lacrosse ($n = 2$), soccer ($n = 18$), skating ($n = 27$), basketball ($n = 6$), cross country/track ($n = 8$), softball ($n = 2$), gymnastics ($n = 1$), cheerleading ($n = 1$), and tennis ($n = 1$).

Participant Recruitment and Data Collection Procedures

Athletes were recruited for this study from those who were in attendance at off-season sport-specific training camps. These camps were specifically targeted for advanced level high school-aged athletes (16–19 years), and no limitations were placed on sport type (i.e., the only participant selection criteria were gender, age, and competitive level). Athletes completed a set of self-report questionnaires that were selected to measure the relevant study variables. Data collection took place in a classroom or training session setting at a scheduled time during the camp. Questionnaires were completed in small group format, and coaches and camp director(s) were not present during any of the sessions. The questionnaires took approximately 20 min to complete. All procedures were submitted to, and approved by, an institutional human subjects review committee, and all required parent/guardian consent and participant assent procedures were followed.

Passion Scale

To assess athletes' level and type of passion for their sport, the Passion Scale (Vallerand et al., 2003) was used. This scale is comprised of two subscales, each containing seven items that assess the two types of passion: harmonious and obsessive. Each item is responded to on a 7-point Likert scale ranging from 1 (*do not agree at all*) to 7 (*completely agree*). A sample item from the obsessive passion subscale is "I have difficulties controlling my urge to engage in my activity," while a sample question for harmonious passion would be "My activity is in harmony with other things that are part of me." The Passion Scale has been demonstrated to possess adequate factorial structure and internal consistency across a range of activities including sport (Rousseau, Vallerand, Ratelle, Mageau, & Provencher, 2002; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Study 1). The Passion Scale was originally validated with college students and adults. However, subsequent studies have provided support for the reliability and validity of the scale for adolescent athletes aged 12–18 (Mageau et al., 2009; Vallerand et al., 2006). For the current study, scores for the two subscales were calculated by averaging the seven items for each of the subscales.

Athletic Identity Measurement Scale

The Athletic Identity Measurement Scale (AIMS) was initially developed and tested for reliability and validity

as a unidimensional scale (Brewer et al., 1993). However, the results of subsequent studies (e.g., Hale et al., 1999) suggested a more multidimensional approach. In 2001, Brewer and Cornelius collected data from a large and diverse sample, and the results of their model testing revealed that a three-subscale version best fit the data. This version of the AIMS was used in the current study and consists of seven items split into three subscales: exclusivity, social identity and negative affectivity. Individuals respond to each item on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item from the social identity subscale, which contains three items, is "I consider myself an athlete". A sample item from the exclusivity subscale, which has two items, is "Sport is the most important part of my life"; and a sample item from the negative affectivity subscale, which contains two items, is "I feel bad about myself when I perform poorly in sport." Although the initial development of the AIMS (Brewer et al., 1993) and the subsequent analyses to confirm the three-factor structure of the scale (Hale et al., 1999) were conducted with samples that consisted of collegiate athletes, evidence for the validity and reliability of the AIMS, its subscales, and the constructs that it measures has also been obtained with samples of adolescent athletes (e.g., Black and Smith, 2007; Grove, Fish, & Eklund, 2004; Ryska, 2002).

Athlete Burnout Questionnaire

The Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) was used to assess athletes' level of burnout. The ABQ is comprised of 15 items that are separated into three subscales, each containing five items. The three subscales are: reduced sense of accomplishment (e.g., *I am not achieving much in my sport*), emotional and physical exhaustion (e.g., *I feel so tired from my training that I have trouble finding energy to do other things*), and sport devaluation (e.g., *The effort I spend in my sport would be better spent doing other things*). The stem for each item asks athletes to indicate how often they feel this way, and a 5-point Likert-type response format is used with scores ranging from (1) *almost never*, (2) *rarely*, (3) *sometimes*, (4) *frequently*, and (5) *almost always*. The ABQ was initially developed and tested for reliability and validity with an adolescent athlete population. However, subsequent studies have provided support for the reliability and validity of the ABQ across a range of sport populations (see review by Eklund & Cresswell, 2007). For the current study, three subscale scores were calculated by averaging the five items assigned to each subscale.

Statistical Analyses

Descriptive statistics for all relevant study variables were computed and screened for linearity and normality. A series of Cronbach's alpha analyses were used to assess the internal consistency of the subscales used in this study, and univariate correlational analyses were

conducted to examine the degree of correlation between all study variables. Finally, to test the main study hypotheses regarding the links between adolescents' athletic identity, passion, and burnout, three hierarchical multiple regression analyses were conducted with the subscales from the burnout questionnaire serving as the dependent variables. For each of these analyses, harmonious passion was entered at the first step as the research to date has indicated consistent support for its role in the prediction of burnout (Carbonneau et al., 2008; Curran et al., 2011; Gustafsson et al., 2011; Vallerand et al., 2010). Obsessive passion, which has received mixed support in the previously cited studies for its link to burnout, was entered at the second step to determine if it would contribute a significant amount to the burnout prediction equation above and beyond that explained by harmonious passion. The three AIMS subscale scores were entered at the third step, and a series of two-way interaction terms were added at the fourth step to determine whether the two passion types would interact with each other and/or with the three subdimensions of athletic identity to affect athletes' levels of burnout. These interaction terms consisted of the following theoretically relevant constructs: Harmonious Passion $\times$ Obsessive Passion, Harmonious Passion $\times$ Social Identity, Harmonious Passion $\times$ Identity Exclusivity, Harmonious Passion $\times$ Negative Affectivity, Obsessive Passion $\times$ Social Identity, Obsessive Passion $\times$ Identity Exclusivity, and Obsessive Passion $\times$ Negative Affectivity. As recommended by Aiken and West (1991), the passion and athletic identity dimensions were centered before calculation of the interaction terms.

Results

Preliminary Analyses

The internal consistency of the subscales used in this study was assessed through use of Cronbach's alpha analyses. These results (Table 1) revealed coefficients above .70 (a criterion recommended by Nunnally and Bernstein, 1994) for all but three of the subscales. For the AIMS social identity subscale, an alpha value of .62 was obtained. But, examination of the interitem correlations revealed that deletion of item 3 increased the alpha value to .70. Thus, this was the subscale score (e.g., with deletion of one item) that was used for the current study. Alpha coefficients for the AIMS negative affectivity (.63) and the ABQ reduced accomplishment (.64) subscales were also below .70, but examination of the interitem correlations revealed no individual items that contributed to these lower alpha levels. Consideration was given to deleting these subscales from the main analyses. However, statisticians (e.g., Raykov, 2008) have recently urged caution in using absolute "cut-off" points to delete scale components because this may result in loss of criterion validity for the scale as a whole. Furthermore, alpha levels can vary as a function of the number of items in a scale (Schmitt, 1996). Thus, some measurement scholars suggest that alpha values at or above a .60 level can be considered acceptable for subscales that are comprised of a lower number of items (e.g., Loewenthal, 2001). Based on these considerations, it was decided to retain the two subscales for use in the current study, but appropriate caution should be noted in the interpretation of the results.

Table 1 Descriptive Data for All Study Variables

	1	2	3	4	5	6	7	8
1. Harmonious Passion	-		.39**	.07	.12	-.39**	-.42**	-.38**
2. Obsessive Passion	.50**	-	.13	.56**	.41**	.05	.21**	-.08
3. AIMS—Social Identity	.49**	.34**	-					
4. AIMS—Exclusivity	.37**	.64**	.36**	-				
5. Negative Affectivity	.34**	.50**	.44**	.51**	-			
6. Burnout—reduced accomplishment	-.41**	-.16*	-.34**	-.23**	-.10	-		
7. Burnout—exhaustion	-.37**	-.01	-.02	-.02	.15*	.37**	-	
8. Burnout—devaluation	-.46**	-.29**	-.32**	-.24**	-.22**	.58**	.48**	-
Mean	5.89	4.45	6.38	4.39	5.17	2.07	2.66	1.90
SD	.84	1.43	.86	1.55	1.38	.62	.84	.81
α	.82	.90	.70	.82	.63	.64	.88	.84

Note. Coefficients above the diagonal represent partial correlations between each of the two forms of passion and the rest of the study variables while controlling for the effects of the other form of passion. Coefficients below the diagonal represent zero-order bivariate correlations between all variables.

* $p < .05$.

** $p < .01$.

Descriptive Statistics

Descriptive statistics (means and standard deviations) for all study variables are provided in Table 1. The results for the three subscales from the burnout questionnaire revealed that the athletes as a group scored below the midpoint (a “3” on a five-point response format) on all three of the subscales. Furthermore, the full score range was used for the exhaustion subscale but not for the other two, as the maximum scores were 3.80 for reduced accomplishment and 4.80 for sport devaluation. However, the standard deviations do indicate considerable interindividual variability, and the data were normally distributed (skewness < 2.00 and kurtosis < 7.00), thus indicating the appropriateness of using linear analyses (e.g., hierarchical regressions procedures) with this data.

Using cut-off criteria for low and high experiences of burnout (Curran et al., 2011; Hodge, Lonsdale, & Ng, 2008; Raedeke, 1997), a frequency distribution revealed that 43 athletes (23% of the sample) scored 2.30 or below for reduced accomplishment, 2.30 or below for emotional exhaustion, and 1.60 or below for devaluation, thus indicating low levels of burnout across all three dimensions. Seven participants (4% of the sample) scored higher than 2.70 for reduced accomplishment, higher than 3.00 for emotional exhaustion and higher than 3.00 for devaluation, thus indicating high levels of burnout across all dimensions. The finding that the majority of participants scored low-to-moderate on burnout subscales is consistent with results found in previous elite junior samples (e.g., Appleton, Hall, & Hill, 2009; Black & Smith, 2007; Curran et al., 2011; Gustafsson et al., 2007; Hodge et al., 2008) showing that there is interindividual variability in burnout levels in athletes of this age and competitive level even if there is a relatively small number of athletes who score at the highest level on these continuums.

The descriptive data for the subscales from the Passion Scale (see Table 1) indicate that this sample of female athletes exhibited high levels of passion for their sport as mean values for both harmonious (5.89) and obsessive passion (4.45) were above the scale midpoint (4 on a 7-point response format). Scores on the harmonious passion subscale ranged from a low of 2.71 to a high of 7.00 while the obsessive passion scores fell across the full range (1.00–7.00), and both sets of scores were found to be normally distributed.

The mean scores from the three AIMS subscales were also all above the midpoint (4 on a 7-point scale; Table 1), and a full range of scores (1–7) was obtained for all subscales. Although the exclusivity and negative affectivity subscale scores were normally distributed, the distribution of the social identity scores did exhibit a somewhat negative skew (-2.19) combined with a relatively high kurtosis score (8.13). Examination of histogram and boxplot graphs revealed that the majority of the girls in the sample (82%) scored at the higher end of this subscale, while the remaining 18% scored at the lower levels. Given the type of female athletes in this sample, the somewhat skewed distribution may not be

surprising. That is, the athletes in this study sample were recruited for participation from among those individuals attending off-season sport-specific training camps that were specifically targeted for the more talented, high achieving athletes within the broader population of high school-aged female athletes.

Data obtained from all study subscales (Passion Scale, AIMS, and ABQ) were screened for univariate (standardized z-scores) and multivariate (Mahalanobis distance) outliers. A total of four cases were identified and were deleted from subsequent analyses.

Correlational Analyses

A series of univariate Pearson correlational analyses were conducted to examine the strength of the relationship between the variables in the study. The results of these analyses (see Table 1) revealed that the three burnout subscales were moderately and positively correlated with each other (r values ranging from .37 to .58). Similarly, the correlation between the two forms of passion (harmonious and obsessive) was found to be positive and moderate ($r = .50, p < .00$). In addition, the three AIMS subscale scores were positively and moderately correlated to each other (r values ranging from .36 to .51).

The degree of correlation that existed between the passion and AIMS subscales was also assessed. In particular, due to the positive and significant correlation between the two types of passion, the relationship between passion and athletic identity was assessed using both univariate zero-order correlational analyses as well as partial correlational procedures. The zero-order correlational results (see coefficients presented below the diagonal in Table 1) indicate that both of the passion subscales were positively and moderately related to all three of the AIMS subscales (r values ranging from .34 to .64). However, the partial correlations presented above the diagonal in Table 1 show that harmonious passion (when controlling for obsessive passion) was only significantly and positively related to one of the AIMS subscale scores (social identity). In addition, obsessive passion (when controlling for harmonious passion) was only significantly and positively related to the other two AIMS subscales (exclusivity and negative affectivity). These results, then, provide initial support for the notion that the two types of passion are linked to different dimensions of athletic identity. Specifically, athletes high in harmonious passion do also perceive themselves as athletes (high social identity as an athlete). In contrast, athletes high in obsessive passion also tend to exhibit the more negative aspects of athletic identity (e.g., more exclusive or restricted identity as an athlete and greater tendency to experience negative affect in response to undesirable sport outcomes).

Main Study Analyses

To test the main study hypothesis that athletes' level and type of both passion and athletic identity would be related

to, or predictive of, their levels of burnout, a set of three hierarchical multiple regression analyses were conducted. The dependent variables for these three analyses were the three subscale scores obtained from the ABQ, and the predictor or independent variables were the two passion scores (harmonious and obsessive), the three subscales from the AIMS (self-identity, exclusivity, and negative affectivity), and a set of 7 two-way interaction terms to represent the interactive effects of the various passion and athletic identity constructs. As noted earlier, for all three analyses harmonious passion was entered at Step 1 with obsessive passion added at Step 2. At Step 3, the three AIMS subscale scores were entered as a group. Finally, at Step 4, the 7 two-way interaction variables were entered. The results of these three analyses are presented in Table 2 and are summarized in the following sections.

Reduced Athletic Accomplishment. For the first regression analysis that included reduced accomplishment as the dependent variable, the addition of harmonious passion as the sole predictor at Step 1 revealed, as expected, a significant predictive effect ($R = .36$; $R^2 = .13$, $p < .00$). Examination of the beta weight ($\beta = -.36$) indicated that harmonious passion was negatively related to reduced accomplishment. At Step 2, the addition of obsessive passion as a predictor indicated a nonsignificant effect (R^2 change = .00, $p = .55$). At Step 3, inclusion of the three AIMS subscale scores revealed a significant increase in variance explained (R^2 change = .05, $p = .02$). Inspection of the beta weights indicates

that the social identity subscale was the only significant predictor of reduced accomplishment ($\beta = -.20$, $p = .02$). Finally, at Step 3, the set of seven interaction terms did not add a significant amount to the prediction of reduced accomplishment (R^2 change = .06, $p = .07$). The overall model explained 24% of the variability in athletes' scores on this dimension of burnout, an effect size classified as medium to large (Cohen, 1988).

Emotional/Physical Exhaustion. For the second component of burnout, the results of the hierarchical regression analysis revealed, again, a significant effect for harmonious passion as entered alone at Step 1 ($R = .33$; $R^2 = .11$, $p < .00$). And, again, the beta weight ($\beta = -.33$) was negative indicating that low levels of harmonious passion were predictive of higher levels of emotional and physical exhaustion. At Step 2, the addition of obsessive passion resulted in a significant increase in variance explained (R^2 change = .04, $p < .01$). The beta weight ($\beta = .22$, $p < .01$) was positive indicating that higher levels of obsessive passion were predictive of higher levels of emotional and physical exhaustion. At Step 3, the three AIMS subscales also added a significant contribution to variance explained (R^2 change = .08, $p < .01$). Beta weights indicated that both social identity ($\beta = .18$, $p < .03$) and negative affectivity ($\beta = .25$, $p < .01$) were positively related to athletes' levels of physical and emotional exhaustion (higher social identity and negative affectivity predictive of higher exhaustion). Finally, the interaction terms added at Level 4 did not contribute

Table 2 Hierarchical Multiple Regression Analyses by Burnout Subscale

Burnout Dimension	Step in Model	Predictor Variable(s) Entered	F-value (df)	R ²	Chg R ²	β	t value
Reduced accomplishment	1	harmonious passion	26.04** (1, 180)	.13	.13**	-.36**	-5.10
	2	obsessive passion	13.15** (2, 179)	.13	.00	.05	0.60
	3	Aims: social identity	7.49** (5, 176)	.18	.05*	-.20*	-2.41
		AIMS: exclusivity				-.15	-1.67
		AIMS: negative affectivity				.14	1.71
Exhaustion	1	harmonious passion	22.02** (1, 180)	.11	.11**	-.33**	-4.69
	2	obsessive passion	15.22** (2, 179)	.15	.04**	.22**	2.76
	3	AIMS: social identity	10.20** (5, 176)	.23	.08**	.18*	2.21
		AIMS: exclusivity				-.07	-.80
		AIMS: negative affectivity				.25**	3.07
Devaluation	1	harmonious passion	33.43** (1, 180)	.16	.16**	-.40**	-5.78
	2	obsessive passion	17.37** (2, 179)	.16	.01	-.09	-1.13
	3	AIMS: social identity	8.05** (5, 176)	.19	.02	-.17*	-2.09
		AIMS: Exclusivity				-.04	-.47
		AIMS: Negative Affectivity				.01	.10

Note. Only newly entered variables at a given step are included in the table. Step 4 yielded nonsignificant change in R^2 for all three burnout subscales and thus these results are not included in the table.

* $p < .05$.

** $p < .01$

anything to the regression equation (R^2 change = .02, p = .80). The overall model explained 24% of the variance in athletes' scores on this burnout subscale, a medium to large effect size (Cohen, 1988).

Sport Devaluation. The results revealed at Step 1 a significant effect for harmonious passion (R = .40, R^2 = .16, p < .00). The beta weight (β = -.40) indicated that harmonious passion was negatively related to athletes' tendencies to perceive devaluation of their sport experience. At Step 2, obsessive passion was not found to be significant (R^2 change = .01, p = .26), and the AIMS subscales added at Step 4 were also not significant (R^2 change = .02, p = .17). Finally, the seven interaction terms were, again, demonstrated to contribute nothing significant to the regression equation (R^2 change = .03, p = .53). The final model was found to explain 21% of the variance in athletes' levels of sport devaluation, a medium to large effect size (Cohen, 1988).

Discussion

The primary purpose of this study was to determine whether adolescent female athletes' levels of sport burnout would be predicted by their level and type of both passion and athletic identity. It was hypothesized that higher levels of harmonious passion and social identity as an athlete would serve as predictors of lower scores on the three burnout subscales, while higher levels of obsessive passion, in combination with high levels of the more negative dimensions of athletic identity (exclusivity and negative affectivity) would be predictive of higher scores on the three subdimensions of burnout.

The results of the regression analyses revealed some support for the study hypotheses. In particular, harmonious passion was identified as a significant and negative predictor of all three subdimensions of burnout. Thus, athletes who exhibited higher levels of harmonious passion for their sport were also more apt to report lower levels of burnout. These results are consistent with other studies on burnout that have been conducted in both occupational (e.g., Carbonneau et al., 2008; Vallerand et al., 2010) and sport settings (e.g., Curran et al., 2011; Gustafsson et al., 2011) and clearly support Vallerand and colleagues' notion that harmonious passion can serve as a protector with regard to the development of sport-related burnout.

Although it had also been hypothesized that obsessive passion would be positively linked with all dimensions of burnout, the results showed that this form of passion was predictive of only one dimension. Specifically, high levels of obsessive passion were predictive of higher scores on the emotional and physical exhaustion subscale. Furthermore, two of the athletic identity subscales (social identity and negative affectivity) were additional positive contributors. These results can, perhaps, best be interpreted in line with other studies that have shown that high levels of obsessive passion in athletes or high levels of self-identity as an athlete are linked to more risky sport behavior (e.g., over training, playing through

injury, rigid persistence to practice schedules even under adverse environmental conditions; e.g., Brewer et al., 1993; Gustafsson et al., 2008; Rip, Fortin, & Vallerand, 2006; Stephan, Deroche, Brewer, Caudroit, & Le Scanff, 2009; Vallerand et al., 2003; Weinberg, Vernau, & Horn, 2013). Based on these research findings, it is possible that athletes in the current study who exhibited high levels of both athletic identity and obsessive passion may tend to train at a higher or longer level and thus may be more susceptible to experiencing high levels of emotional and physical exhaustion (even during off-season training timepoints as exhibited in the current study).

A corresponding issue to consider is that previous researchers and scholars (e.g., Cresswell & Eklund, 2005; Gustafsson et al., 2008; Raedeke, 1997) have suggested that emotional and physical exhaustion may be the most central and/or the first dimension of burnout to develop. In discussing their interview results with athletes who had discontinued their sport participation due to significant burnout, Gustafsson and colleagues posited that burnout may begin with increased levels of emotional and physical exhaustion combined with reduced accomplishment. If these levels are sustained over time, then athletes may subsequently develop perceptions of sport devaluation and thus move to the higher end of the burnout continuum. The athletes in the current study, then, who exhibited higher levels of both obsessive passion and athletic identity (social identity and negative affectivity) may be at the earlier stages of burnout (exhibiting only high levels of physical and emotional exhaustion). If no change is made, these athletes could continue on to experience higher levels of both reduced accomplishment and sport devaluation.

The results of the current study also provided empirical evidence of the relationship between passion and athletic identity. Specifically, the correlational analyses revealed that harmonious passion (while partialing out the effects of obsessive passion) was only significantly linked to the positive dimension of athletic identity (social identity). In contrast, obsessive passion (again, while partialing out the effects of harmonious passion) was linked to the two more negative dimensions of athletic identity (exclusivity and negative affectivity), but not to social identity. In the hierarchical regression analyses as well, social identity combined with harmonious passion to serve as negative predictors of one dimension of burnout (reduced accomplishment). Negative affectivity loaded with obsessive passion to predict higher levels of physical and emotional exhaustion. These results are clearly consistent with Vallerand and colleagues' (Vallerand, 2012; Vallerand & Houliort, 2003; Vallerand et al., 2003) dualistic model of passion and to previous research conducted with athletes (e.g., Vallerand et al., 2003). Within the passion model, both forms of passion incorporate the idea that the activity in question becomes a central feature of the individual's self-identity. However, harmonious passion results from an autonomous internalization of the activity into one's identity whereas obsessive passion results from a controlled internalization

of the activity into one's identity. With regard to athletes, those who have an obsessive passion for their sport may exhibit a greater tendency than will athletes with harmonious obsession to focus exclusively on their sport (to the detriment of other activities in their lives) and to experience negative affective feelings when they are prevented from participating. In contrast, athletes with a harmonious passion for their sport may strongly identify with the athlete role (social identity), but also have other interests in life (nonexclusive attachment to the athlete role). This type of athlete profile is, of course, also consistent with that hypothesized by Coakley (1992, 2009) to be less susceptible to burnout.

Correspondingly, however, it should also be pointed out that the results from the hierarchical regression analyses revealed that the three AIMS subscales did add a significant amount to the prediction of two of the three dimensions of burnout (reduced accomplishment and exhaustion) above and beyond that contributed by harmonious and obsessive passion. Thus, athletic identity was not just subsumed within the passion construct, but rather contributed its own unique amount to explaining variation between athletes in their levels of reduced accomplishment and exhaustion. Furthermore, the passion and athletic identity subscales were not found to interact in their effects on burnout (i.e., the interaction terms entered at Step 4 of the hierarchical regression equations were not significant). Thus, athletic identity and passion appear to exert independent effects on athletes' levels of burnout.

Study Limitations

Although this study provided some interesting results, some limitations are evident. First, the current sample was limited in regard to its demographic characteristics (e.g., all female athletes who were in the older adolescent years). Second, the data were collected at a single time point. Thus, the relationship between the three main constructs (burnout, athletic identity, and passion) could not be examined across time. Third, the sample consisted of athletes from a broad range of sports (individual as well as team). Certainly, sport type could be considered a confounding factor, and future research may be needed to determine if and how individual and team sport athletes might differ in relation to the links between passion, athletic identity, and burnout levels. Nevertheless, the results from this study are very similar to those obtained from adolescent samples that included athletes from only one sport (e.g., Black & Smith, 2007; Curran et al., 2011), thus suggesting that sport type may not be that much of a factor in relation to the psychological characteristics that predict burnout levels in athletes. Fourth, as noted in the methods section, some of the subscales exhibited relatively low internal consistency, and the social identity subscale from the AIMS exhibited a somewhat negative skew. The use of subscales exhibiting low alpha levels certainly may make it more difficult to detect relationships between these constructs and other measures (Schmitt, 1996). Thus, these measurement limitations should be

considered as a cautionary note in the interpretation of the obtained data. Finally, the data were collected from athletes during an off-season training timepoint. Interestingly, however, the descriptive data from the scales used to measure the relevant study variables (passion, athletic identity, and burnout) appeared to be quite similar to that obtained in previous studies using athletes from this same age range (e.g., Appleton et al., 2009; Black & Smith, 2007; Curran et al., 2011; Hill, Hall, Appleton, & Murray, 2010). In particular, although most of the athletes in the current sample reported low to moderate levels of burnout, there were clearly some who scored at the upper end of the scale continuum. These results indicate that athletes who play at a more competitive level may continue to experience many of the same perceptions and feelings during their off-season training times. This is consistent with the notion that for adolescent athletes at the older and more advanced competitive sport levels, there is little true "down" time.

Future Research Directions

As noted by others (e.g., Raedeke, 1997; Vallerand, 2012), there is a need for longitudinal studies that would track not only the stages of progression for the development of different types of passion, athletic identity and burnout, but that would also examine the intricate nature of the relationships between these constructs across a competitive season and across developmental ages and stages. Such research would certainly add to the knowledge base in all three areas and would provide unique perspectives on the overall sport development process.

Given that the topic of passion in relation to sport participation is relatively new to the literature, further research is also needed to examine the factors that may determine the type and level of passion that young athletes develop as they enter and move through the stages of sport participation. Initial research studies (e.g., Mageau et al., 2009) have suggested that high levels of autonomous support from significant adults were important to the development of harmonious passion in young adolescent musicians. Conversely, perceptions of controlling behavior from significant adults were associated with the development of obsessive passion. Similar studies could be conducted to examine the role of parents and coaches in the development of different types of passion in young athletes.

Finally, based on the results of the current study as well as on similar others (e.g., Black & Smith, 2007; Weinberg et al., 2013), it appears that athletic identity is indeed multidimensional and, perhaps more importantly, that the different dimensions of athletic identity may be differentially related to such other variables as passion, burnout, and risky sport behavior. Further research is certainly needed to identify how and why young athletes may incorporate their sport activity into their self-identity in ways that are more positive (social identity in the athlete role) rather than more negative (exclusivity and negative affectivity). Based on Coakley's (1992, 2009) ideas, a particularly good time

to begin examination of these differential paths may be during the early to midadolescent years.

In summary, the results of the current study do indicate that both passion and athletic identity are important correlates or predictors of burnout levels in older adolescent athletes. In particular, harmonious passion appears to provide the most protection against high levels of all three dimensions of burnout. Parents and coaches should encourage athletes' interest in areas outside of sport to avoid unidimensional identity development that may lead to sport activities consuming a disproportionate amount of their time and attention. Parents, coaches, and other interested adults should also work to develop a sport environment that promotes perceptions of autonomy and choice for all athletes, as such a climate may most facilitate the development of harmonious passion and multidimensional identity.

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