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The relationship between multidimensional perfectionism and passion in junior athletes

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Abstract

Research suggests that self-oriented perfectionism and socially prescribed perfectionism have unique and distinct motivational properties that are evident among junior athletes. Likewise, harmonious and obsessive passions encompass distinctive patterns of motivation. Based on suggestions that different dimensions of perfectionism may be associated with varying types of passion, the aim of the current study was to test the possibility that self-oriented and socially prescribed perfectionism could be distinguished based on their relationship with harmonious and obsessive passion in junior athletes. Two hundred and forty-nine athletes (*M* age = 16.07, *SD* = 2.22) competing in various youth sports completed measures of perfectionism and passion. Multiple regression and canonical correlation analyses indicated that self-oriented perfectionism predicted higher levels of both types of passion. In contrast, socially prescribed perfectionism predicted only obsessive passion. The findings provide an initial indication that the motivational differences between self-oriented and socially prescribed perfectionism extend to the types of passion they engender. The findings also provide additional insight into the patterns of motivation that are likely to arise from the two dimensions of perfectionism in junior athletes.

During their formative years, aspiring junior athletes must accrue the requisite practice and skills necessary to compete at senior elite level. This undertaking is arduous, and requires extraordinary dedication over a period of time that can span childhood to early adulthood (Elferink-Gemser, Jordet, Coelho-E-Silva & Visscher, 2011). The motivational processes that govern whether a junior athlete graduates to elite level or becomes one of the many athletes to dropout (or burnout) of sport are complex. From a personality perspective, some junior athletes may be better suited to this endeavor than others (Hall, 2006). In accord, examination of personality characteristics and the patterns of motivation they engender may provide the basis for better talent identification and the development of future elite athletes.

In reviewing the factors associated with Olympic success, Gould and Maynard (2009) identify perfectionism as a potentially important personality characteristic. Perfectionism is a trait broadly defined as a preoccupation with striving for flawlessness in concert with overly critical self-evaluative concerns (Flett & Hewitt, 2002). Hewitt and Flett (1991) have proposed a model in which perfectionism is understood in terms of the direction in which perfectionistic beliefs are focused. When directed towards the self (self-oriented perfectionism) individuals set exceedingly high personal standards and evaluate themselves critically. When perceived to be directed from others (socially prescribed perfectionism) individuals believe that significant others have excessive expectations, appraise them harshly, and exert pressure on them to be perfect. Studies outside of sport suggest that these two dimensions have divergent consequences. Socially prescribed perfectionism tends to be uniformly problematic – contributing to higher levels of stress, anxiety and depression. Conversely, self-oriented perfectionism appears to be highly motivating and best considered only a vulnerability factor for such outcomes (Flett & Hewitt, 2007).

Researchers have begun to examine the influence of these dimensions in junior athletes. Self-oriented perfectionism has been found to contribute to a mix of positive and

negative outcomes (Gotwals, Stoeber, Dunn, & Stoll, 2012). On one hand, this dimension of perfectionism is positively related to more adept coping and negatively related to burnout, suggesting it is a seemingly desirable characteristic for athletes to possess (Hill, Hall & Appleton, 2010a; Hill, Hall, Appleton & Kozub, 2008). However, on the other hand, self-oriented perfectionism is negatively related to self-acceptance and positively related to a fear of failure (Hill et al., 2008; Hill, Hall & Appleton, 2010b). In addition, there is also evidence that self-oriented perfectionism may contribute to deficits in motivation when performance difficulties arise and thus is notably complex (Hill, Hall, Duda & Appleton, 2011). Socially prescribed perfectionism, by contrast, appears to be much more debilitating for athletes. Research suggests that, unlike self-oriented perfectionism, this dimension is associated with only negative outcomes for junior athletes, such as poorer coping, lower well-being, and higher burnout (e.g., Gaudreau & Verner-Filion, 2012; Hill et al., 2008; Hill et al., 2010a).

The divergent outcomes associated with self-oriented and socially prescribed perfectionism for junior athletes are known to reflect contrasting motivational properties. These include, for example, differing patterns of motivation regulation (a combination of autonomous and controlled regulation vs. only controlled regulation; Appleton & Hill, 2012) and contingencies of self-worth (internal contingencies vs. external contingencies; Hill, Hall, & Appleton, 2011). Their divergent features are also likely to include other motivational properties. Of especial note here, Vallerand and colleagues (Vallerand, 2010; Vallerand, Rousseau, et al., 2006) have purported that dimensions of perfectionism may give rise to different types of passion, another important predictor of sport-related outcomes. The current study thus builds on previous research by examining this suggestion and testing whether self-oriented perfectionism and socially prescribed perfectionism can indeed be differentiated by their association with harmonious and obsessive passion.

Passion for sport

Passion reflects a close affinity for activities (such as sport) that people consider self-defining (Vallerand, Blanchard et al., 2003). It develops in a dualistic manner via internalization (a process whereby activities become more or less part of one's sense of self), and can either be harmonious or obsessive (Vallerand, 2010). Harmonious passion emerges from autonomous internalization whereby an activity integrates fully into the self and resides harmoniously alongside pre-existing values and goals (e.g., "my sport reflects the qualities I like about myself"; Vallerand et al., 2003). When activities are regulated by harmonious passion, people identify with, and personally endorse, the relevance of their participation leading to wilful engagement. Obsessive passion emerges from controlled internalization whereby the same activity only partially integrates into the self, leading to internal conflicts between the activity and pre-existing values and goals (e.g., "I often have difficulties controlling the urge to engage in my sport"; Vallerand et al., 2003). Like harmonious passion, when activities are energized by obsessive passion people identify highly with the activity and express personal endorsement of participation. Yet, unlike harmonious passion, this is only the case insomuch as the activity serves to fulfil some important contingency (e.g., to bolster self-worth or gain approval; Mageau, Carpentier & Vallerand, 2011), resulting in compulsive and inflexible engagement.

The experiences of junior athletes will be markedly different depending on the presence of harmonious or obsessive passion. Moreover, while both passions are highly energizing, it is the presence of harmonious passion that provides the basis for long-term participation in sport (Vallerand, Salvy et al., 2007). This is because, in addition to more flexible and enthusiastic patterns of participation, harmonious passion promotes more positive thoughts and feelings towards sport. By contrast, in addition to more rigid and compulsive patterns of participation, obsessive passion promotes less positive and often negative thoughts and feelings towards sport (Vallerand, 2012). For example, harmonious

passion is associated with lower levels of negative affect and burnout, and higher levels of well-being among athletes (e.g., Curran, Appleton, Hill & Hall., 2011, 2013; Vallerand et al., 2003). It is the opposite for obsessive passion which is associated with higher levels of negative affect and burnout, and lower levels of well-being in sport (e.g., Vallerand et al., 2003; Vallerand, et al., 2006; Schellenberg, Gaudreau & Crocker, 2013). In tandem, elements of both of these outcomes are evident. The presence of both passions energizes enthusiasm and intense behavioral investment but carries the potential for motivational and psychological difficulties, due to the presence of obsessive passion (Stenseng, 2008; Vallerand, Mageau et al., 2008; Vallerand et al., 2003).

The relationship between perfectionism and passion for sport

There are a number of conceptual similarities between the concepts of perfectionism and passion. Both represent central features of an athlete's self-concept or identity. Similarly, both are motivation-related factors that contribute to junior athletes' cognitions, affect and behavior. Yet perfectionism and passion also differ in important ways. In particular, self-oriented and socially prescribed perfectionism reside at the trait level and influence cognition, affect, and behavior broadly (Flett & Hewitt, 2002), whereas passion is situated at a more immediate, contextual level regulating behavior for specific activities (Vallerand et al., 2003). Accordingly, when considering how perfectionism and passion influence each other, perfectionism should determine the types of passion exhibited in sport (as opposed to vice-versa).

Self-oriented perfectionism is likely to contribute to both athletes' harmonious and obsessive passion. This is because self-oriented perfectionism engenders both a personal endorsement of achievement striving that will promote autonomous internalization (a determinant of harmonious passion) and, in concert, an intense desire to preserve self-worth that will promote controlled internalization (a determinant of obsessive passion). Empirical

support for this notion is provided by existing research. In particular, self-oriented perfectionism contributes to higher levels of both autonomous regulations (e.g., enjoyment and recognition of personal value of the activity) and controlled regulations (e.g., need to satisfy internal and external contingencies) (e.g., Appleton & Hill, 2012; Miquelon, Vallerand, Grouzet & Cardinal, 2005; Stoeber, Feast & Hayward, 2009). These regulations, and their associated internalization processes (viz. autonomy support and interpersonal control), also collectively characterize both passions (Mageau et al., 2009; Wang, Liu, Chye & Chatzisarantis, 2011). The expected positive relationship between self-oriented perfectionism and both passions is also evident in the complex pattern of motivation, and motivational vulnerability, associated with this dimension of perfectionism (Flett & Hewitt, 2005, 2007).

Socially prescribed perfectionism is likely to contribute to a different pattern of passion for sport. This is because socially prescribed perfectionism is characterized primarily by the pursuit of external standards with the aim of garnering social approval and bolstering self-worth (Hewitt & Flett, 1991). These features are likely to promote only controlled internalization and obsessive passion. Again, this is evident in extant research, especially studies examining the relationship between this dimension of perfectionism and motivation regulation. These studies indicate that, akin to obsessive passion (but antagonistic to harmonious passion), socially prescribed perfectionism relates predominantly with higher levels of controlled regulations (and amotivation) (e.g., Appleton & Hill, 2012; Mills & Blankstein, 2000; Vallerand, et al., 2007). Based on this research, one would expect a positive association between socially prescribed perfectionism and obsessive passion, along with a negative association with harmonious passion.

The present research

The aim of the present research was to examine whether self-oriented and socially prescribed perfectionism could be differentiated in terms of their relationships with harmonious and obsessive passion among junior athletes. Based on the conceptual and empirical evidence provided above, we hypothesized that (1) self-oriented perfectionism would positively predict both harmonious and obsessive passion and (2) socially prescribed perfectionism would positively predict obsessive passion and negatively predict harmonious passion. These relationships were anticipated to be evident at univariate level (i.e., predicting the two passions separately) and multivariate level (i.e., predicting the two passions simultaneously). By testing this relationship at both levels, it provides information regarding the unique and combined contribution of the two dimensions of perfectionism to the two types of passion.

Method

Participants

Participants were 266 (female n = 132; M age = 16.42; SD = 2.85) junior athletes recruited from sports clubs across Northern England. They competed in sport at club (n = 121), academy (n = 10), county (n = 52), regional (n = 47), national (n = 28), or international (n = 6) level (3 non-respondents). Sports included soccer (n = 72), rugby (n = 77) cricket (n = 17), swimming (n = 65), synchronized swimming (n = 20), and diving (n = 14) (2 non-respondents). On average, participants trained and competed for 9.72 hours per week (s = 4.47 hours) and had been competing for 7.61 years (SD = 3.81 years). They rated their participation in sport as very important in comparison to other activities in their lives (M = 6.32, SD = 0.82: 1 = *not at all important* to 7 = *extremely important*). Prior to data collection, ethical clearance was provided by the research ethics committee of a British University. Following this, clubs were contacted and invited to participate. If the clubs agreed to participate, parental consent and athlete assent was then sought for participation. The

questionnaire was administered in a training session setting, during which a trained research assistant was present to give general instructions and to answer any questions.

Instruments

Perfectionism. Perfectionism was measured using a short version of Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (H-MPS; Cox, Enns, & Clara, 2002). This scale contains two subscales that measure self-oriented perfectionism (SOP; 5 items, e.g., "I set very high standards for myself") and socially prescribed perfectionism (SPP; 5 items, e.g., "My family expects me to be perfect"). The instructions and the stem of the instrument were modified to focus athletes on their sport and items were measured on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Cox et al. (2002) have demonstrated that this shortened version of the H-MPS is closely related to the original (self-oriented perfectionism r = .95; socially prescribed perfectionism r = .94) and numerous studies attest to its validity and reliability with samples of junior athletes (e.g., Gaudreau & Antl, 2008; Gaudreau & Verner-Filion, 2012; Hill, 2013).

Passion for sport. The Passion Scale (Marsh, Vallerand, et al., 2013) was used to assess harmonious passion (6 items; e.g. "Sport allows me to live a variety of experiences") and obsessive passion (6 items; e.g. "I cannot live without sport"). The instructions focused athletes on their sport ("While thinking of your main sport and using the scale below, please indicate your level of agreement with each item"). Athletes responded on a 7-point Likert scale (1 = *do not agree at all*, 7 = *very strongly agree*). The validity and reliability of the passion scale has been documented in previous research (see Marsh et al., 2013) including in samples of junior athletes (Curran et al., 2013).

Analytical strategy

A two-stage analytical strategy was employed to test the hypotheses. In the first stage, hierarchical multiple regression analyses were employed to examine univariate relationships

and the unique predictive ability of the dimensions of perfectionism in relation to each type of passion (i.e., predicting the two passions separately). In the second stage, canonical correlational analyses were employed to identify multivariate relationships and the predictive ability of the dimensions of perfectionism in relation to both types of passion (i.e., predicting the two passions simultaneously).

Results

Preliminary analysis

Missing value analysis indicated that there were 200 complete cases and 66 cases with item non-responses. In accordance with the recommendations of Tabachnick and Fidell (2007), cases with item non-responses exceeding 5% were removed. This resulted in the removal of 13 cases. Following removal, the probability of the patterns of missing items diverging from randomness was greater than .05 (MCAR $\chi^2 = 25.34$, $df = 25$, $p = .44$). Therefore, missing values were considered to be absent for non-systematic reasons and were replaced using the mean of the non-missing items from the subscale in each individual case (Graham, Cumsille, & Elek-Fisk, 2003).

Subscales were then computed and screened for both univariate and multivariate outliers using the recommendations of Tabachnick and Fidell (2007). Standardised z-scores greater than +/-3.29 ($p < .001$) served as the standard for identifying univariate outliers. A Mahalanobis distance greater than $\chi^2 (4) = 18.47$ ($p < .001$) was used to identify multivariate outliers. Four further cases were removed using these criteria ($n = 249$; female $n = 46$; M age = 16.07; $SD = 2.22$). After removal, skewness and kurtosis values indicated that the data was approximately normally distributed. Finally, Cronbach's alpha coefficients indicated that each subscale demonstrated acceptable internal consistency and are displayed in Table 1.

Descriptive statistics and zero-order correlations

The descriptive statistics indicated that the junior athletes reported moderate levels of perfectionism and passion. Consistent with previous research, dimensions of perfectionism were positively correlated (e.g., Hill et al., 2008, 2010a) and so were the two types of passion (e.g., Curran et al., 2011, 2013). Self-oriented perfectionism was positively correlated with harmonious and obsessive passion. Socially prescribed perfectionism was positively correlated with obsessive passion and was uncorrelated with harmonious passion. The magnitudes of the relationships between the two dimensions of perfectionism and two types of passion were typically moderate in size (Cohen, 1988). Descriptive statistics and zero-order correlations are displayed in Table 1.

The predictive ability of dimensions of perfectionism in relation to types of passion

The first hierarchical regression indicated that dimensions of perfectionism explained 22% of variance in harmonious passion, F (2, 248) = 35.70, p < .001. As expected, self-oriented perfectionism positively predicted harmonious passion (b = .43, 95% BCa CI = .33 to .54, β = .48, p < .001). However, in contrast to the hypotheses, socially prescribed perfectionism did not predict harmonious passion (b = -.04, 95% BCa CI = -.13 to .05, β = .06, p = .32). Therefore, the analyses indicated that self-oriented perfectionism uniquely predicted higher harmonious passion among the junior athletes. Results of this analysis are reported in Table 2.

The second hierarchical regression indicated that the dimensions of perfectionism explained 12% of variance in obsessive passion, F (2, 248) = 18.31, p < .001. As expected, self-oriented perfectionism positively predicted obsessive passion (b = .25, 95% BCa CI = .10 to .40, β = .21, p = < .001). Similarly, in line with the hypotheses, socially prescribed perfectionism also positively predicted obsessive passion (b = .25, 95% BCa CI = .15 to .36, β = .25, p < .001). Therefore, the analyses indicated that both self-oriented perfectionism and

socially prescribed perfectionism uniquely predicted higher obsessive passion among the junior athletes. Results of this analysis are reported in Table 2.

Canonical correlation analysis

In the canonical correlation analyses the first canonical variate was a linear composite of self-oriented and socially prescribed perfectionism and the second canonical variate was a linear composite of harmonious and obsessive passion. Dimention reduction suggested two significant canonical functions: $Rc = .48$, Wilks' $\lambda = .70$, $p < .001$; $Rc = .29$, Wilks' $\lambda = .92$, $p < .001$.

Examination of the canonical loadings for the first canonical function revealed that self-oriented perfectionism was the primary contributor to the first canonical variate (rs = .99). Both harmonious (rs = .97) and obsessive (rs = .56) passion made primary contributions to the second canonical variate. The first canonical variate explained an average of 53% of variance in the dimensions of perfectionism and the second canonical variate explained an average of 63% of variance in the types of passion. The corresponding positive loadings of self-oriented perfectionism on the first canonical variate and of harmonious and obsessive passion on the second canonical variate is consistent with the interpretation that self-oriented perfectionism is positively associated with a mix of harmonious and obsessive passion. The canonical correlation was large and corresponded with 23% of shared variance between the two variates.

Examination of the canonical loadings for Function 2 revealed that socially prescribed perfectionism was the primary contributor to the first canonical variate (rs = .97). Obsessive passion was the primary contributor to the second canonical variate (rs = .83). The first canonical variate explained an average of 47% of variance in the dimensions of perfectionism and the second canonical variate explained an average of 37% of variance in the types of passion. The corresponding positive loadings of socially-prescribed perfectionism on the first

canonical variate and of obsessive passion on the second canonical variate is consistent with the interpretation that socially prescribed perfectionism is positively related to obsessive passion. The canonical correlation between the two variates was moderate and corresponded with 8% of shared variance between the two variates. Results of these analyses are reported in Table 3.

Discussion

The aim of the current study was to examine whether self-oriented and socially prescribed perfectionism could be differentiated by their relationships with harmonious and obsessive passion. It was hypothesized that (1) self-oriented perfectionism would positively predict both harmonious and obsessive passion and (2) socially prescribed perfectionism would positively predict obsessive passion and negatively predict harmonious passion. In addition, it was expected that these relationships would be evident at the univariate level and the multivariate level. At the univariate level, the findings generally supported the hypothesized relationships. As expected, both self-oriented and socially prescribed perfectionism positively predicted obsessive passion. However, while self-oriented perfectionism positively predicted harmonious passion, socially prescribed perfectionism was unrelated to harmonious passion (as opposed to being a negative predictor). Findings were similar at the multivariate level. Self-oriented perfectionism was positively related to a combination of harmonious passion and obsessive passion. Socially prescribed perfectionism was positively related to obsessive passion (but not, as expected, negatively related to harmonious passion).

Self-oriented perfectionism and passion

The findings support Vallerand and colleagues' (Vallerand, 2010; Vallerand, et al., 2006) suggestions that dimensions of perfectionism may influence internalization processes and give rise to different types of passion. In the case of self-oriented perfectionism, it

positively predicted both harmonious and obsessive passion. This is indicative of the complex mix of motivational properties evident in self-oriented perfectionism. Previous research in sport (and more widely) has found these properties include an array of motivation regulations (e.g., Appleton & Hill, 2012; Mills & Blankstein, 2000; Van Yperen, 2006) and both the desire to develop personal competence and demonstrate comparative competence (e.g., Neumeister & Finch, 2006; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). The current study extends this research by illustrating that this complex mix also includes another important predictor of sport behavior - the type of passion that is likely to be exhibited by junior athletes.

Beyond the univariate relationships, it is noteworthy that self-oriented perfectionism was associated with a combination of both types of passion. The presence of both (rather than the presence of one or the other) provides insight into the overall pattern of motivation one might expect from junior athletes who display self-oriented perfectionism. Specifically, when underpinned by both passions, sport participation has the potential to be characterized by a mixture of both flexible and enthusiastic engagement and rigid and compulsive engagement (Stenseng, 2008). This is evident in existing research where self-oriented perfectionism appears on some occasions to be adaptive (e.g., Hill et al., 2010a; Neumeister & Finch, 2006; Stoeber & Otto, 2006) but on others more problematic (e.g., Besser, Flett & Hewitt, 2004; Besser, Flett, Hewitt & Guez, 2008; Hill et al., 2011). The findings suggest the long-term implications of self-oriented perfectionism for junior athletes are likely to be dependent on the maintenance of harmonious passion and keeping obsessive passion at bay (see Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013).

Socially prescribed perfectionism and passion

In the case of socially prescribed perfectionism, it only predicted higher obsessive passion. This is consistent with previous research, which has found socially prescribed

perfectionism to be associated primarily with maladaptive motivational properties in sport and other domains (e.g., controlling motivation regulation and performance goals; Appleton & Hill, 2012; Hall, Kerr, & Matthews, 1998). This finding is likely to reflect a number of features within socially prescribed perfectionism that promote the controlled internalization underpinning obsessive passion. These features include the pursuit of external standards with the aim of garnering social approval and bolstering self-worth. As these particular features did not result in an inverse relationship with harmonious passion (as was initially expected), the association between socially prescribed perfectionism and passion appears to be best characterized as one where it promotes more rigid, compulsive engagement but does not undermine (or promote) the development of flexible and enthusiastic engagement. In other words, socially prescribed perfectionism does not explain the presence or absence of harmonious passion among junior athletes.

Multivariate analyses further illustrated that socially prescribed perfectionism was characterized primarily by the presence of obsessive passion and an absence of harmonious passion. This is likely to have important ramifications for junior athletes exhibiting this dimension of perfectionism. Specifically, unlike self-oriented perfectionism, no respite is provided by harmonious passion. This will leave junior athletes exhibiting this dimension of perfectionism disposed to a debilitating pattern of motivation energized by defensive, self-protective behaviors (e.g., the desire to protect self-worth and perceptions of competence; Mageau et al., 2011). This may partly explain why socially prescribed perfectionism has consistently been found to positively predict negative cognitive and emotional outcomes, including extreme disaffection such as burnout (e.g., Appleton, Hall & Hill, 2009; Hill et al., 2008; Hill et al., 2010b). With this in mind, the association between socially prescribed perfectionism and only obsessive passion affirms that this dimension of perfectionism is likely to be an undesirable characteristic for junior athletes to possess.

Limitations and future directions

The results must be interpreted in context of the study's limitations. Notably, as the study is cross-sectional, no inference can be made in terms of whether perfectionism precedes passion or vice versa (here, it is based on theoretical grounds). Future research will need to include a temporal element to test causal precedence. Similarly we did not include a third variable in this study, which may have helped to clarify the commonalities and differences between perfectionism and passion. Extending this research should involve the examination of conceptually relevant mediating variables such as contingencies of self-worth and ruminative cognition. The current study also adopted self-report measures, introducing the potential for greater social desirability and common-method bias (Podsakoff, Mackenzie, Lee & Podsakoff, 2003). Future research would benefit from other methods of data collection (e.g., observer ratings) to confirm the pattern of relationships observed in the current study. Finally, we adopted Hewitt and Flett's (1991) model of perfectionism. Adopting other models (e.g., Gotwals & Dunn, 2009) will provide further insight into the perfectionism-passion relationship. In particular, which other specific features of perfectionism account for the relationships observed and whether the same relationships are observed for higher-order dimensions of perfectionism.

Conclusion

The main contribution of the current study is that it illustrates that self-oriented and socially prescribed perfectionism can be distinguished by their association with types of passion. Self-oriented perfectionism appears to contribute to both harmonious and obsessive passion. By contrast, socially prescribed perfectionism appears to contribute to only obsessive passion. Passion can therefore be considered alongside other known differences in the motivational properties of these two dimensions of perfectionism. In addition, those wishing to understand the implications of the two dimensions of perfectionism for junior

athletes should consider the likely influence of the two passions on the experiences and motivation of junior athletes.

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Table 1. *Descriptive statistics and bivariate correlations.*

	M	*SD*	α	1	2	3	4
1. Self-oriented perfectionism	4.75	0.65	.69	---			
2. Socially prescribed perfectionism	4.15	0.68	.70	.25**	---		
3. Harmonious passion	5.00	0.84	.73	.45**	.01	---	
4. Obsessive passion	4.02	1.09	.73	.26**	.32**	.34**	---

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

Table 2. *The predictive ability of the dimensions of perfectionism in relation to types of passion*

Variable	***b*** **(95% BCa CI)**	**β**
Harmonious passion: F (2, 248) = 35.70, $p < .01$; $R = .47$; $R^2 = .22$; $R\ adj^2 = .22$		
Self-oriented perfectionism	0.43 (0.33 to 0.54)	.48**
Socially prescribed perfectionism	-0.04 (-0.13 to 0.05)	-.06
Obsessive passion: F (2, 248) = 18.31, $p < .01$; $R = .36$; $R^2 = .13$; $R\ adj^2 = .12$		
Self-oriented perfectionism	0.25 (0.10 to 0.40)	.21**
Socially prescribed perfectionism	0.25 (0.15 to 0.36)	.25**

Note. *R* = multiple regression coefficient; *b* = beta coefficient; β = standardized beta coefficients; F = *F* statistic; 95% BCa CI = 95% bias corrected accelerated confidence interval (5000 iterations).
$p < .01$**

Table 3. *Canonical correlation between dimensions of perfectionism and types of passion.*

	Function 1		Function 2	
Variable	r_s	r_s^2	r_s	r_s^2
Self-oriented perfectionism	.99	.98	-.02	.00
Socially prescribed perfectionism	.23	.05	.97	.94
Adequacy		.52		.47
Redundancy		.12		.04
Harmonious passion	.97	.94	-.23	.05
Obsessive passion	.56	.30	.83	.69
Adequacy		.62		.37
Redundancy		.14		.03
Canonical correlation (R_c)		.48		.29
R_c^2		.23		.08

Note. r_s = canonical loading; r_s^2 = squared canonical loading