DOES PASSION TO SPORT HAVE AN INFLUENCE ON THE DISPOSITIONAL FLOW IN ELITE ATHLETES?

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Abstract:
The purpose of this study was to investigate the role of passion in determining dispositional flow in elite athletes and also to examine sex differences in passion and dispositional flow. One hundred and eighty nine female (M age = 25.26 ± 5.16) and 201 male (M age = 24.98 ± 4.80), a total of 390 (M age = 25.11 ± 4.97) elite athletes voluntarily participated in this study. “Passion Scale (Vallerand, Mageau, Ratelle, Leonard, Blanchard, Koestner, Gagne & Marsolis, 2003)” and “Dispositional Flow State Scale-2 (Jackson & Eklund, 2004)” were administered to athletes. Independent sample t-test analysis revealed no significant sex difference in passion and dispositional flow. Stepwise Multiple Regression Analysis indicated that both harmonious passion and obsessive passion are significant predictors of (R=.21; R²=.04; F=6.89; p<0.01) dispositional flow in elite athletes. It can be concluded that types of passion toward sports differently contribute to athletes dispositional flow in elite sport environment.

Keywords: passion, flow, athlete

Résumé
Le but de cette étude était d’investiguer le rôle de la passion dans la tendance structurale chez les athlètes élites et aussi d’examiner les différences entre les sexes dans la passion et la tendance structurale. Cent quatre-vingt-neuf femmes (M age = 25,26 ± 5,16) et 201 hommes (M age = 24,98 ± 4,80), dont un total de 390 athlètes élites (M age = 25,11 ± 4,97) ont volontairement participé à cette étude. «Échelle de la Passion (Vallerand, Mageau, Ratelle, Léonard, Blanchard, Koestner, Gagne & Marsolis, 2003)» et «Échelle d’état de tendance structurale -2 (Jackson & Eklund, 2004)» ont été administrés aux athlètes. L’analyse indépendante du test-t de l’échantillon n’a révélé aucune différence significative entre les sexes dans la passion et la tendance structurale. L’analyse par régression multiple par étapes a indiqué que la passion harmonieuse et la passion

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obsessionnelle sont des prédicteurs significatifs de la tendance structurale (R = 0,21, R² = 0,04, F = 6,89, p <0,01) chez les athlètes élites. On peut conclure que les types de passion envers le sport contribuent différemment à la tendance structurale des athlètes dans un environnement de sport élite.

Mots-clés: passion, tendance, athlète

1. Introduction

Recently the psychological construct of flow has received great research interest in exercise and sport psychology area. The flow is originally introduced by Csikszentmihalyi (1975) and it is defined as an enjoyable psychological state that people feel when they are totally involved in the activity they are doing. The flow is a distinctive psychological state which occurs when individuals become engaged in an activity that is challenging, controllable and intrinsically motivating (Csikszentmihalyi, 1990). In flow experiences, the performer feels strong and positive and he is not worried about himself or of failure (Jackson & Eklund, 2004).

The flow is conceptualized as dispositional flow which describes as a general tendency to experience flow characteristics within a particular setting (Jackson & Eklund, 2004). The general tendency to experience flow can be defined by a set of dimensions or factors, including a merging of action and awareness, clear goals, unambiguous feedback, focused attention, loss of self-consciousness, altered sense of time, a sense of control, and perceived challenge-skill balance (Csikszentmihalyi, 1990). A combination of all these factors may result in the global flow experiences (Jackson & Marsh, 1996; Vlachopoulos, Karageorghis & Terry, 2000).

The development of a sport specific measure of flow (Jackson & Marsh, 1996) provides opportunities to study a range of issues related to flow which will help us to understand more clearly what flow is, how it is generated, and how it impacts on a range of variables that are important in sports and vice versa. Both external (e.g., contextual and social) and internal (e.g., ability to pay attention, fear of ridicule, and selfishness) factors such as perceived motivational climate (Cervelló, Santos-Rosa, Garcia Calvo, Gonzales-Cutre, Sicilia, Moreno & Fernández-Balboa, 2009); goal orientations (Jackson & Roberts, 1992); positive affect (Rogatko, 2009), mindfulness (Kee & Wang, 2008), perception of challenge (Martin & Cutler, 2002), self-concept and psychological skills (Jackson, Thomas, Marsh & Smethurst, 2001) affect flow experiences.

Passion is another important and recent psychological construct in positive psychology which may facilitate or disrupt the flow in sport settings (Vallerand et al., 2003). The passion is defined as “a strong inclination toward an activity that people like, they find important and in which they invest time and energy” (Vallerand et al., 2003; pp.757). Vallerand and his colleagues (2003) emphasized two types of passion in a dualistic model, -obsessive and harmonious- that can be distinguished in terms of how the
passionate activity is internalized into one’s core self or identity (Vallerand et al., 2003). Harmonious passion (HP) results from an autonomous internalization of the activity into a person’s identity, produces a motivational force to engage in the activity willingly and engenders a sense of volition and personal endorsement about pursuing the activity (Vallerand et al., 2003). On the other hand, obsessive passion (OP) refers to an uncontrollable urge to engage in an activity that one loves and results from a controlled internalization of the activity into one’s identity (Vallerand et al., 2003).

These two types of passion lead to different affective outcomes in activity engagement. For example, obsessive passion was found to be positively related to negative emotions (e.g. Vallerand, Rousseau, Grouzet, Dumanis, Grenier & Blanchard, 2006), anxiety (Rousseau & Vallerand, 2008), addiction (Wang & Yang, 2008) and perceived stress (Philippe, Vallerand, Andrianarisoa & Brunel, 2009) but, it is negatively related to positive emotions (Vallerand et al., 2006). Conversely, harmonious passion was negatively related to burnout (Carbonneau, Vallerand, Fernet & Guay, 2008), negative emotions (Vallerand et al., 2006) and it is positively related to life satisfaction, psychological adjustment (Philippe, Vallerand & Lavigne, 2009), and positive emotions (Mageau & Vallerand, 2007).

In the case of the flow, it is possible to say that there are a few attempts to examine the role of passion in the flow experiences in sport environment. For example, Vallerand et al. (2003, study 1), examined the relationship between passion and flow in college students and pointed out that harmonious passion facilitates the flow but the obsessive passion does not. This result has been replicated in different fields such as the refereeing (Philippe et al., 2009, Study 1), work domain (Lavigne et al., 2012) and internet usage (Wang, Khoo, Liu & Divaharan, 2008; Wang, Liu, Chyea & Chatzisarantisa, 2011). Addition to results about these related structures, most researchers did not find sex differences in flow (Murcia, Gimeno & Coll, 2008; Stavrou, Jackson, Zervas & Karteroliotis, 2007) and in passion (Mageau et al., 2009; Philippe et al., 2009).

Thus, the present study may have contributed to the existing flow literature by examining the possible influence of passion on the flow in a sport environment. The main purpose of this study was to investigate the role of passion in determining dispositional flow in elite athletes. The study was also aimed to investigate sex differences in passion and flow state. Based on the Dualistic Model of Passion, we expected that harmonious passion would be positively but obsessive passion would be negatively related with dispositional flow. It is also hypothesized that there would be no sex differences in athletes’ passion and dispositional flow experiences.

2. Methods

2.1 Participants
The participants were 390 athletes (201 males and 189 females) from different sports including soccer (n=88), basketball (n=58), volleyball (n=113), table tennis (n=26),
handball (n=53) and wrestling (n=25). Participants ranged in age from 16 to 39 years with a mean age of 25.11 years (SD=4.97 years). Their sport experiences were 127.46 ± 53.84 months.

2.2 Measurements

2.2.1 Passion Scale
This scale (Vallerand et al., 2003) was used to assess passion of athletes towards sport. The passion scale has 16 items and it includes two subscales of six items each (the obsessive subscale and the harmonious subscale, and 4 item for the passion criteria). Each item is rated on a 7-point Likert scale. The Passion Scale has shown high reliability and constructs validity (Rousseau, Vallerand, Ratelle, Mageau & Provencher, 2002; Vallerand et al. 2003, 2006). The results of Principal Component Factor Analysis of the Turkish version of the scale showed that two factors explain 52.39% variance of total scale (Kelecek & Aşçi, 2013). In this study, internal consistency was 0.76 for harmonious passion; 0.54 for obsessive passion subscales and total internal consistency coefficients of “Passion Scale” were found 0.83.

2.2.2 Dispositional Flow State Scale - 2
The dispositional flow state scale (Jackson & Eklund, 2004) was used to assess flow as experienced by athletes. The scale has 36 items and 9 subscales (challenge-skill balance, merging of action and awareness, clear goals, unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, transformation of time, autotelic experience). Each item is rated 5-point Likert scale. In this study, global flow score was used. Confirmatory factor analysis revealed acceptable fit index values of scale which confirming factor structures of Turkish version (Aşçi, Çağlar, Eklund, Altıntaş & Jackson, 2007). Internal consistency coefficients of DFS-2 were found 0.85 for this study.

2.2.3 Procedure and Data Analysis
Scales were administered to athletes in group settings. The verbal and visual information were provided about how to respond to items in each questionnaire. SPSS 17.0 was used to analyze the data. Descriptive statistics, Pearson Product Moment Correlation Analysis, Stepwise Multiple Regression Analysis and independent sample t-test were used in this study. Independent sample t-test was used to test sex differences in flow and passion. Pearson Product Moment Correlation Analysis was used to investigate if there was a relationship between passion and flow states of elite athletes and Stepwise Multiple Regression Analysis was used to determine whether the passion might predict the dispositional flow in elite athletes.

Data was screened to ensure that assumptions of normality, linearity, multicollinearity, and homogeneity of variance–covariance matrices were met (Tabachnick & Fidell, 2001). The histogram and PP plot of residuals were also examined. The data showed normal distribution and variances were equal. To control for the possibility of
collinearity, we calculated Tolerance (TOL) and Variance Inflation Factor (VIF) for all factors. Values below .10 for tolerance and above 10 for VIF indicate collinearity between the independent variables (Dormann, Elith, Bacher, Buchmann, Carl, Carré, García Marquéz, Gruber, Lafourcade, Leitão, Münkemüller, McClean, Osborne, Reineking, Schröder, Skidmore, Zurell & Lautenbach, 2013). The ranges for TOL and VIF in all independent variables in the present study were 0.65 and 1.54, respectively, indicating no collinearity.

3. Results

3.1 Sex Differences in Passion and Flow

Independent sample t –test analysis indicated no significant sex differences in passion and dispositional flow (Table 1). Cohen’s effect sizes (d) for variables are 0.08 for passion (both harmonious and obsessive passion) and 0.22 for dispositional flow. In line with Cohen (1992), these numbers show a small effect size.

Table 1: Sex Differences in Passion and Flow

<table>
<thead>
<tr>
<th></th>
<th>Female (n=189)</th>
<th>Male (n=201)</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonious Passion</td>
<td>5.75</td>
<td>5.82</td>
<td>-.84</td>
<td>0.40</td>
<td>0.078</td>
</tr>
<tr>
<td>Obsessive Passion</td>
<td>4.44</td>
<td>4.52</td>
<td>-.73</td>
<td>0.47</td>
<td>0.078</td>
</tr>
<tr>
<td>Flow State</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Flow Experience</td>
<td>3.99</td>
<td>3.91</td>
<td>1.86</td>
<td>0.06</td>
<td>0.222</td>
</tr>
</tbody>
</table>

3.2 Correlations between Passion & Flow

Pearson Product Moment Correlation Analysis (Table 2) indicated significant relationship between harmonious passion and dispositional flow in female athletes (r = .23; p < 0.01). Cohen’s effect sizes (d) are 0.59 for female participants’ harmonious passion, 0.24 for male participants’ harmonious passion and 0.1 for both male and female participants’ obsessive passion. According to calculated numbers, the effect size is about medium level in female participants’ harmonious passion. The other correlations have small effect sizes.

Table 2: Correlation between Passion and Flow in Athletes

<table>
<thead>
<tr>
<th></th>
<th>Harmonious Passion</th>
<th>Obsessive Passion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female (n=189)</td>
<td>Male (n=201)</td>
</tr>
<tr>
<td>r</td>
<td>0.23**</td>
<td>0.12</td>
</tr>
<tr>
<td>Cohen’s d (effect size)</td>
<td>0.59</td>
<td>0.24</td>
</tr>
</tbody>
</table>

** p<0.01
3.3 Role of Passion in Predicting Dispositional Flow
Stepwise Multiple Regression Analysis (Table 3) was used to determine the role of athletes’ level of passion in determining dispositional flow. Results showed that both harmonious passion and obsessive passion \((R=0.21; R^2=0.04; F=6.89; p<0.01)\) were significant predictors of flow experiences (Table 3). The relationship between harmonious passion and dispositional flow \((\beta=0.25; p<0.01)\) was positive, but the relationship between obsessive passion and dispositional flow \((\beta=-0.17; p<0.01)\) was negative. There were small effect sizes of regression analysis. Calculated numbers were 0.03 for model 1 and 0.04 for model 2. In the first step, harmonious passion entered the model (model 1) and explained only 2% of the variance in dispositional flow. In the second step, obsessive passion entered the model and explained an additional 2% of the variance. These \(R^2\) values are very low.

<table>
<thead>
<tr>
<th>Table 3: Role of Passion in Determining Global Flow Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmonious Passion</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Global Flow Experience</td>
</tr>
<tr>
<td>Model 1: R=0.16; R²=0.03; Adjusted R²=0.02; F(1,311)=7.82; p&lt;0.01; Cohen’s f²=0.03</td>
</tr>
<tr>
<td>Model 2: R=0.21; R²=0.04; Adjusted R²=0.04; F(2,310)=6.89; p&lt;0.01; Cohen’s f²=0.04</td>
</tr>
</tbody>
</table>

4. Discussion
The purpose of this study was to investigate the role of passion in determining dispositional flow experiences in elite athletes and also to examine sex differences in flow and passion.

Consistent with the hypothesis of the study, two types of passion were differently related with the dispositional flow of elite athletes. Although both harmonious and obsessive passion was significant predictor of dispositional flow in elite athletes, they only explained minor variance of it. As expected harmonious passion was positively related to dispositional flow but obsessive, passion was negatively correlated with it.

In general, results indicated that athletes’ passion toward sport is an possible antecedent of the general tendency to experience optimal flow. However, type of passion is important to understand whether or not passion facilitates or disrupt the flow. For example, findings demonstrated that if athletes are harmoniously passionate toward their sport, they may experience flow more frequently and their passion increase the possibility to experience flow. In other words, the more athletes getting harmoniously passionate about their sport; they feel more control of their movements; feel more immersed in the activity. Also, in this case, they are aware of their skills and goals more clearly and they can concentrate on the game and try to overcome the...
challenges with no perception of time. These results were in line with previous studies (Curran, Hill, Appleton, Vallerand & Standage, 2015; Forest, Mageau, Sarrazin & Morin, 2011; Lavigne, et al., 2012; Mageau et al., 2005; Vallerand, 2010; Vallerand & Houlfort, 2003; Wang et al., 2008).

On the other hand, findings revealed that obsessive passion was negatively related to dispositional flow. It means that as athletes get more and more passionate, they value the activity too much and so their performance gets worse. If athletes think the activity (soccer, basketball, volleyball...etc) all of the time; athletes’ goals, feedbacks and sensations will become blurred or in explicit and the control of the activity will be lost. In other words, athletes who are taken with harmonious passion, experience flow with ease. The present research showed that athletes’ obsessive passion constrains the flow experience. It can be said that harmoniously passionate athletes experience more flow, they know the requirement of the task, skills, challenges and goals, lose the time perception and get immersed in the activity but the more athletes getting obsessive about their sports, the less they experience flow. This result was noting line with the existing literature. Previous studies (Wang et al., 2008; 2011; Philippe et al, 2009) showed that obsessive passion was not related with flow experience. The differences between the findings of present study and previous studies could be attributed to differences in samples. In the previous studies, students (Wang et al., 2008; 2011) and referees (Philippe et al, 2009) were the major focus of the researchers but this study focused on elite athletes.

The second purpose of this study was to investigate sex differences in passion and flow. Results showed that there were no sex differences in dispositional flow and passion. In line with this result, Mageau, Vallerand, Charest, Salvy, Lacaille, Boufford and Koestner’s (2009) study reported no differences in passion between female and male adolescents. Contrary to this finding, Philippe and his colleagues (2009) concluded that males scored higher on obsessive passion than females but females scored higher on harmonious passion than males. Furthermore, the present findings on flow experiences were in line with the previous studies of Russel (2001), Murcia, Gimeno and Coll (2008), Kee and Wang (2008) and Dammyr (2011) which reported no significant sex differences in flow experiences of athletes.

In conclusion, harmoniously passionate elite athletes experience more flow in sport situations and athletes may experience positive or negative affect depending on the type of passion they have. These findings should be interpreted by considering the limitations of the study. Firstly, this is a cross-sectional study, which means that no conclusion about cause-effect can be drawn. Secondly, the sample of this study consisted of athletes, aged between 16 and 39, from only six sport branches (soccer, basketball, volleyball, table tennis, handball and wrestling). That’s why the findings could not be generalized to other age and sports groups. Thirdly, year of sports experiences of athletes are not considered in this study sport.

By considering the limitations of this study, future studies could investigate the role of passion in determining flow experiences in different age groups, sport
experiences, sports (including tennis, football, swimming, gymnastics...etc), different competitive and skill level (experienced, novice...) and different settings (exercisers, athletes, coaches, fitness leaders...). In addition to this, the low variance maybe caused by comparably small sample size of the current study, future studies could include larger sample to increase external validity of the study. Furthermore, in future studies the relationship of personality, anxiety, motivation and perceived success with flow and passion could be investigated. These types of future studies could tell us how individual differences affect passion and flow experiences.

References


