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The Relationship between Motivation and Flow States in Sports Faculty Students

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Abstract

The aim of this study was to investigate the relationship between motivation and flow states in sports faculty students. A total of 289 athletes who were studying at Ondokuz Mayıs University Yaşar Doğu Faculty of Sports Sciences participated in the study. Sport Motivation Scale and The Flow State Scale-2 and Dispositional Flow Scale-2 were used. T-test was used for comparisons. While there was no significant difference between the subscale scores of motivational orientation by gender ($p > 0.05$), a significant difference was found between the amotivation subscale ($p < 0.05$). There was no significant difference in motivational orientation subscales between athletes doing team sports and athletes doing individual sports ($p > 0.05$). No significant difference was found between intrinsic and extrinsic motivation states of student athletes according to gender differences ($p > 0.05$). No significant difference was found between all sub-dimensions of flow state according to gender, team and individual sports ($p > 0.05$). T Conclusion: It can be said that motivation levels of sports educated students have an effect on flow states or flow states have an influence on motivation states. The studies that increase the flow states of the sports educated students can increase the motivation levels of the students, as well as studies that increase the motivation levels of the students can increase the flow states. Studies should be conducted in different age groups and different groups to find out in which sub-dimensions flow states and motivation states differ or are similar.

Keywords: Sports, Flow state, Motivation, Self-consciousness, Students, Team sport, Individual sport.

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Contents

Contribution of this paper to the literature
This study contributes to the existing literature by investigating the relationship between motivation and flow states in sports faculty students.

1. Introduction

Today, understanding the psychological factors that accompany successful performance in physical activity environments has a high priority. To understand the psychological processes that may contribute to the quality of performance, investigating the psychological structures associated with optimal performance has been the focus of researchers. Flow is defined as the optimal psychological state that occurs when there is a balance between perceived difficulties and skills in an activity (Csikszentmihalyi, 1990).

While Roberts *et al.* (2007) explained the motivational process through psychological structures such as directing, regulating and empowering the behaviour of success; Hagger and Chatzisarantis (2007) defined motivation as dominant, guiding and empowering behaviour process. According to Moneta (2004a) flow state is the person's deep sense of task and cognitive competence, integration with the activity, and the inner pleasure felt in the activity involved. In another study about the definition of flow state, it was found that athletes defined flow state with concepts such as "autotelic experience, endless source of energy, wonderful feeling of the body, not feeling pain and feeling strong" (Swann *et al.*, 2012).

There are several reasons why people continue their activities, and motivation is one of them. Motive is defined as the force driving behaviour (Aydın, 2010). Motivation refers to aiming for obtaining or reaching any event, phenomenon or object. Motivation and sport performance are concepts that can be used in many ways; in a way, they are equivalent concepts (Balcıoğlu, 2003). Motives, which form the basis of human behaviour, play a major role in sports as well as in all environments. While Roberts *et al.* (2007) explained the motivational process through psychological structures such as directing, regulating and empowering the behaviour of success; Hagger and Chatzisarantis (2007) defined motivation as dominant, guiding and empowering behaviour process. There are two types of motivation in sport, intrinsic and extrinsic. Intrinsic motivation derives from the athlete himself. Athletes with a high level of intrinsic motivation are hungry for learning more knowledge and skills, being more successful, and getting more satisfaction. Extrinsic motivation, on the other hand, comes from factors outside the athlete. These factors can be coaches, spectators, other people and external rewards (Doğan, 2005). In contrast, extrinsically motivated individuals participate in an activity to achieve discernible results (Lonsdale *et al.*, 2008). In a study, the personality traits of the people doing sports were found to be better than those who did not do sports (Koca *et al.*, 2018). In another study, it was stated that the students who do sports have leadership qualities that can be accepted well (Çetinkaya and İmamoğlu, 2018). It has been found that sport has a positive effect on personality traits in various studies (Yamak *et al.*, 2016.; İmamoğlu, 2017; İmamoğlu and Demirtaş, 2017; Sener, 2018). The fact that there are few studies investigating the concepts of optimal performance, mood and motivation together, which is thought to have a significant effect on sports performance, has led to conducting the present study. Studies on flow state are of great importance since they are associated with concepts such as positive mood, skill development, exercise behaviour, performance enhancement, and life satisfaction (Csikszentmihalyi, 1990; Asakawa, 2004). For example, even the effect of colours has a positive effect on motivation (Yamaner and İmamoğlu, 2018).

It is thought that analysing these concepts will contribute to the field of sport and exercise psychology in terms of enabling the organization of the program which athletes and coaches are subjected to in the assessment of the experience and performance they gain during competitions. In this regard, the aim of this study was to investigate the relationship between motivation and flow state in sports faculty students.

2. Method

2.1. Study Group

A total of 289 athletes, 151 males and 138 females with a mean age of 22.27-22.39 years, who were studying at Ondokuz Mayıs University Yaşar Doğu Faculty of Sport Sciences participated in the study. Individual and team athletes studying at the Faculty of Sport Sciences of Ondokuz Mayıs University participated in the study voluntarily.

2.2. Data Collection Tools

2.2.1. Sport Motivation Scale

Sport Motivation Scale-SMS is based on cognitive assessment theory and was developed by Pelletier *et al.* (1992). The validity and reliability study of the scale for Turkish athletes was conducted by Kazak (2004). The scale consists of 28 items in which the judgments are made according to seven evaluation steps and includes seven subscales. The subscales of the scale are; 1) intrinsic motivation to know, 2) intrinsic motivation to accomplish, 3) intrinsic motivation to stimulation, 4) external regulation, 5) introjected regulation, 6) identified regulation and 7) amotivation. To know, to accomplish and stimulation subscales are about intrinsic motivation, while external regulation, introjected regulation, identified regulation are about extrinsic motivation (Sanlı, 2015). The assessment is made by dividing the total score obtained from the relevant subscale by the number of items in the sub-scale. Again, intrinsic and extrinsic motivation scores are obtained by dividing the total score obtained from the items in the sub-scales that constitute that dimension by the number of items (Kazak, 2004). In the present study, Cronbach alpha values were found as .88 in intrinsic motivation to know-to accomplish, .73 intrinsic motivation stimulation, .59 in introjected regulation, .78 in identified regulation, .84 in external regulation and .78 in amotivation.

2.2.2. The Flow State Scale-2 and Dispositional Flow Scale-2 (JFSS-2 and JDFS-2)

Optimal performance is a measure of the general state of mood on the individual participating in activity and it aims to evaluate the frequency of flow state experience in physical activity and participation in sports. The scale

was adapted to Turkish by Aşçı *et al.* (2007). The scale consists of 36 items and 9 subscales. These subscales are challenge/skill balance (items (1,10,19 and 28), action-awareness merging (items 2,11,20 and 29), clear goals (items 3,12,21and 30), unambiguous feedback (items 4,13,22 and 31), concentration on task (items 5,14,23 and 32), sense of control (items 6,15,24 and 33), loss of self-consciousness (items 7,16,25 and 34), time transformation (items 8,17,26 and 35) and autotelic experience (items 9,18,27 and 36). Each item in the scale is answered on a 5-point Likert scale ranging from "Never (1)" to "Always (5)".

2.3. Data Analysis

In the analysis of the data, 22.00 SPSS package program was used. The data obtained from the scale were calculated according to the scoring instructions. While evaluating the data, Kolmogorov Smirnov Test was used to investigate compliance with the normal distribution and all the data were found to be normally distributed. Independent t-test was used to evaluate the data.

3. Findings

Table-1. Age, height and body weights by gender.

Variable	Gender	N	Average	St. deviation	t-test
Age (Years)	Male	151	22,27	3,19	-0,21
	Female	138	22,39	1,42	
Height (cm)	Male	151	175,72	6,98	7,36**
	Female	138	165,52	5,69	
Weight (kg)	Male	151	72,00	9,88	8,02**
	Female	138	57,65	5,62	

**p<0,001.

While there was no significant difference between the ages of the male and female participants (p> 0.05), there was a significant difference between height and body weight variables (p <0.001).

Table-2. Comparison of students' subscale scores of motivational orientation by gender.

Motivational orientation in sport	Gender	n	Average	St. deviation	t- test
Intrinsic motivation to know and to accomplish	Male	151	5,58	1,13	-0,91
	Female	138	5,80	1,00	
Intrinsic motivation stimulation	Male	151	5,78	1,09	-0,92
	Female	138	5,99	1,02	
External regulation extrinsic motivation	Male	151	4,50	1,36	-1,39
	Female	138	4,91	1,37	
Introjected extrinsic motivation	Male	151	4,83	1,27	-0,63
	Female	138	4,91	1,07	
Identified extrinsic motivation	Male	151	5,61	1,13	-0,31
	Female	138	5,76	1,14	
Amotivation	Male	151	2,83	1,45	2,92*
	Female	138	2,04	0,99	

*p<0,05.

While no significant difference was found in the comparison of female and male students' subscale scores of motivational orientation (p> 0.05), significant difference was found between males and females in the amotivation subscale (p<0,05).

Table-3. Comparison of subscale scores of motivational orientation by branch.

Motivational orientation in sport	Branch	n	Average	St. deviation	t- test
Intrinsic motivation to know and to accomplish	Team sport	139	5,52	1,11	-1,23
	Individual sport	150	5,80	1,04	
Intrinsic motivation stimulation	Team sport	139	5,88	1,03	0,08
	Individual sport	150	5,86	1,09	
External regulation extrinsic motivation	Team sport	139	4,67	1,35	-0,04
	Individual sport	150	4,68	1,40	
Introjected extrinsic motivation	Team sport	139	5,04	1,20	-0,52
	Individual sport	150	4,74	1,16	
Identified extrinsic motivation	Team sport	139	5,60	1,12	1,21
	Individual sport	150	5,73	1,15	
Amotivation	Team sport	139	2,62	1,32	0,80
	Individual sport	150	2,40	1,33	

No significant difference was found between the athletes engaged in team and individual sports in the comparison of subscale scores of motivational orientation by branch (p>0.05).

Table-4. Intrinsic and extrinsic motivation of student athletes according to gender differences.

Motivational orientation	Gender	Average	St. deviation	t-test
Intrinsic motivation sub-dimension	Male	5,65	1,04	-0,97
	Female	5,86	0,96	
Extrinsic motivation sub-dimension	Male	4,98	1,00	-0,98
	Female	5,20	1,04	

No significant difference was found between intrinsic and extrinsic motivation of student athletes according to gender differences (p>0. 05).

Table-5. Comparison of flow state subscales according to gender.

Subscale	Gender	N	Average	St. deviation	t-test
Challenge/skill balance	Male	151	16,29	2,29	-0,42
	Female	138	16,50	2,23	
Action-awareness merging	Male	151	14,90	2,84	-1,58
	Female	138	15,89	3,04	
Clear goals	Male	151	16,67	2,42	-1,56
	Female	138	17,47	2,39	
Unambiguous feedback	Male	151	16,63	2,64	-0,42
	Female	138	16,87	2,69	
Concentration on task	Male	151	16,73	2,51	-0,63
	Female	138	17,05	2,27	
Sense of control	Male	151	16,49	2,66	-1,48
	Female	138	17,26	2,11	
Loss of self-consciousness	Male	151	14,20	4,20	1,19
	Female	138	13,11	4,31	
Time transformation	Male	151	17,08	2,47	-1,00
	Female	138	17,63	2,68	
Autotelic experience	Male	151	17,49	2,41	0,03
	Female	138	17,47	1,81	

No significant difference was found between male and female participants in all subscales in the comparison of flow state subscales according to gender (p>0.05).

Table-6. Comparison of flow state scale sub-dimensions according to team and individual sports.

Scale sub-dimensions	Groups	N	Average	St. deviation	t-test
Challenge/skill balance	Team sport	139	16,18	2,02	-0,74
	Individual sport	150	16,54	2,43	
Action-awareness merging	Team sport	139	15,26	2,51	-0,19
	Individual sport	150	15,38	3,28	
Clear goals	Team sport	139	16,90	2,35	-0,38
	Individual sport	150	17,10	2,51	
Unambiguous feedback	Team sport	139	16,90	2,30	0,52
	Individual sport	150	16,60	2,91	
Concentration on task	Team sport	139	16,92	2,26	0,20
	Individual sport	150	16,82	2,53	
Sense of control	Team sport	139	16,85	2,24	0,08
	Individual sport	150	16,80	2,63	
Loss of self-consciousness	Team sport	139	14,00	3,88	0,52
	Individual sport	150	13,52	4,55	
Time transformation	Team sport	139	16,95	2,50	-1,19
	Individual sport	150	17,60	2,60	
Autotelic experience	Team sport	139	17,69	2,10	0,80
	Individual sport	150	17,32	2,22	

In the comparison of flow state scale sub-dimensions according to team and individual sports, no significant difference was found between all sub-dimensions among participants (p>0.05).

Table-7. Correlation states of flow state and motivation subscales.

Variable	Intrinsic motivation to know and to accomplish	Intrinsic motivation stimulation	External regulation extrinsic motivation	Introjected extrinsic motivation	Identified extrinsic motivation	Amotivation
Challenge/skill balance	,425**	,423**	,278**	,299**	,420**	-,160
Action-awareness merging	,384**	,428**	,323**	,303**	,238*	-,218*
Clear goals	,454**	,437**	,393**	,372**	,278**	-,214*
Unambiguous feedback	,473**	,466**	,383**	,421**	,302**	-,167
Concentration on task	,446**	,420**	,387**	,537**	,247*	-,193
Sense of control	,431**	,400**	,274**	,448**	,227*	-,286**
Loss of self-consciousness	-,044	-,060	,059	-,101	,084	,318**
Time transformation	,462**	,462**	,280**	,398**	,237*	-,199
Autotelic experience	,388**	,379**	,241*	,243*	,372**	-,123

The relationship between flow state and motivation subscales was statistically significant in some parameters ($p<0.05$ and $p<0,001$). The positive relationship between flow state self-awareness subscale and amotivation subscale is notable ($p<0.001$).

4. Discussion and Conclusion

While Ersöz *et al.* (2012) found no significant difference in motivational orientations of athletes by gender, they found statistically significant differences in terms of the variable of sport type. Uzun *et al.* (2018) found a significant difference in intrinsic motivation to know and accomplish, introjected extrinsic motivation, identified extrinsic motivation, and amotivation sub-dimensions according to gender. Unlike these studies, Amorose and Horn (2001) found that men's intrinsic motivation levels were higher than those of women.

In the present study, while no significant difference was found in the comparison of the subscale scores of the motivational orientations of male and female students, significant difference was found between male and female students in amotivation subscale ($p<0,05$). A great number of researches have shown that athletes participate in sports with both intrinsic and extrinsic motives (Baker, 1993). The findings of the studies showed that intrinsic motives such as entertainment and competition have a strong effect on the commitment and continuity to sports. On the other hand, extrinsic motives, such as body-related motives and rewards, have not been very effective in the commitment and continuity to sports. Extrinsic factors have often been the starting factors for athletes' participation in sports (Lonsdale *et al.*, 2008).

Stavrou *et al.* (2007) did not find a statistically significant difference in terms of gender in flow states of athletes in their study conducted with athletes in individual sports branches. Sanlı (2015) found the motivation subscale scores of 314 male students engaged in individual and team sports as between 13.02 and 35.95 in different subscales. The results of our study were 2.40-5.86 and they were slightly higher than the results of Kelecek *et al.* (2010), Erdem (2008). Almagro *et al.* (2010) compared the motivational tendencies of footballers and basketball players and showed that basketball players behave more self-determined in sports environments than football players, and they have higher averages in intrinsic regulation to know and accomplish sub-dimension. Factors such as being enthusiastic about the sport, personal competency perception, curiosity, research, knowing more, exploring new training techniques, learning new training techniques not tried before and exploring new methods while improving performance can cause to experience more motivation (Kazak, 2004). This is thought to be the reason why our results are higher than the results of other studies. In addition, no significant difference was found between intrinsic and extrinsic motivation states of student athletes according to gender differences in our study.

In their study they conducted on 251 university students between the ages of 19 and 35, Ersöz and Eklund (2016) examined behavioural regulation and flow state in exercise and found that flow state did not differ in terms of gender. Similarly, in another study (Erkmen *et al.*, 2010) evaluated individuals who had exercised over six months according to body perception and gender. As a result of the study, it was shown that flow state did not differ according to gender. Similar studies support these results (Russell, 2001; Koehn, 2007; Murcia *et al.*, 2008; Altıntaş *et al.*, 2010). These results support our research findings. As a reason for the absence of a gender difference in the findings obtained from our study, it can be said that male and female students who exercise are similar in their perception of achieving the exercise, both groups get inner pleasure, they do the movements without thinking and they are involved in the exercise at a similar level. Kaya *et al.* (2015) did not find a significant difference according to gender in the remaining eight sub-dimensions except the experience of achieving the goal.

While Ersöz (2011) 's study on undergraduate and graduate participants aged 17-30 years did not show a significant difference in the sub-dimensions of loss of self-consciousness and time transformation in terms of the variable of gender, a statistically significant difference was found in all other sub-dimensions. The averages of the male participants in these subscales were higher than the female participants. Similar results were not found in the sub-dimension averages in our study.

İlhan (2017) examined the flow state of university students according to the type of exercise and did not find statistically significant difference in flow state levels according to exercise type. In a study by Russell (2001) with the participation of 42 athletes, it was concluded that flow state did not show a significant difference according to sport type. Russell (2001) found that the scores of the action-awareness merging sub-dimension of athletes who did only team sports were higher than those of the athletes who did individual sports.

In another study, it was concluded that team athletes with high competitive level experienced more flow state than team athletes with low competitive level (Ede, 2010). In their study on volunteering participants in different exercise programs, Altıntaş *et al.* (2010) found a significant difference in loss of self-consciousness sub-dimension of flow state according to exercise type. They found that the scores of the participants who participated in the individual exercise program were higher than those of the participants who participated in group exercises. No differences were found in other sub-dimensions of flow state according to the type of exercise. While the results of the flow state scale in this study contradicted our findings, the other sub-dimensions of the scale support our research findings. When the reasons for different results were considered, it was thought that the research findings might be due to sample differences. It can be said that the reason for the lack of difference in flow states of the students doing exercise is that the students doing both individual and group exercises are involved in the activities in which they see themselves successful and which they do according to their own wishes. In addition, the fact that choice of exercise type in the two groups was their own preferences may be the reason for lack of difference in flow states because it increases intrinsic motivation in individuals.

In their study they conducted to analyse the association between elite athletes' flow state levels and their state motivation levels, Altıntaş *et al.* (2013) stated that with increasing levels of intrinsic motivation and identification of athletes, flow states increased as well. In other words, the positive relationship of flow state with intrinsic motivation has been demonstrated in many studies (Kowal and Fortier, 2000; Fournier *et al.*, 2007; Murcia *et al.*, 2008). In many studies, it has been found that intrinsic motivation is the determinant of flow state (Kowal and Fortier, 2000; Moneta, 2004b; Murcia *et al.*, 2008). On the other hand, a statistically significant negative correlation was found between flow state and extrinsic motivation and amotivation. To put it more clearly, it has been shown that the increase in the extrinsic motivation and amotivation levels of athletes decreases the flow state. Parallel to

this result, Kowal and Fortier (2000) found a negative relationship between extrinsic motivation and flow state. Neither intrinsic nor extrinsic motivation of individuals is negatively correlated with flow state as well as sports performance. Individuals who participate in sports against their will may not enjoy the activity they perform and also they may not provide cognitive competence and control over the task. For this reason, it is possible to state that the flow states of athletes who cannot be motivated or who have extrinsic motivation may be low. While similar results were obtained in our study, a statistically significant negative correlation was found in amotivation and subscales of flow state. The relationship between flow state and motivation subscales was statistically significant in some parameters. The positive relationship between flow state loss of self-consciousness subscale and amotivation subscale is notable (p<0,001).

4.1. Suggestions

In conclusion, we can say that motivation levels of sports educated students have an effect on flow states or flow states have an influence on motivation states. The studies that increase the flow states of the sports educated students can increase the motivation levels of the students, as well as studies that increase the motivation levels of the students can increase the flow states. Studies should be conducted in different age groups and different groups (such as athletes and disabled athletes) to find out in which sub-dimensions flow states and motivation states differ or are similar.

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