



THE EFFECT OF EXERCISE DEPENDENCE LEVELS OF FACULTY OF SPORTS SCIENCES STUDENTS ON THEIR SPORTS-SPECIFIC ACHIEVEMENT

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Abstract:

The aim of our study is to determine the effect of exercise dependence levels of sports science faculty students on their sport-specific achievement motivation. This descriptive research is in the general survey model. The universe of the study was formed by the students studying at the Faculty of Sport Sciences of Uşak University in the 2020-2021 academic year. The sample of the study is 200 students. The aim of the study was explained to 200 students who accepted the study. First, the subjects were administered the Willis Sports-Specific Achievement Motivation Scale. Later, the Exercise dependence Scale was applied. Kruskal Wallis and Mann Whitney-U tests were used at the significance level of 0.05 for the mean differences. In order to determine the relationship between variables, Pearson correlation analysis was performed at the significance level of 0.05. Regression analysis at the significance level of 0.01 was performed to determine the effect on the sport-specific motivation for success. In the light of the data obtained from the study, 27.5% of the students are in the addicted group in terms of exercise dependence. On the other hand, 46% was in the risk group and only 6.5% was in the normal group. Students' exercise dependence levels have a weak negative effect on their specific achievement motivation levels in sports. As the exercise dependence levels of the students increase, their level of achievement motivation specific to the sport decreases.

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This effect level is 37.4%. Exercise dependence should be directed to education, psychotherapy, and alternative treatment methods in order to increase sportive success, as exercise dependence has a negative effect of 34.7% on sport-specific achievement motivation.

Keywords: sport, exercise dependence, sports specific motivation for success

1. Introduction

The aim of our study is to determine the effect of exercise dependence levels of sports science faculty students on their sport-specific achievement motivation. Explanation of the behaviors of people involved in sportive activities is handled within the concept of motivation. First of all, the person doing sports meets the need to “*move*” (Koç, 1994). In order to do sports, a developed musculoskeletal structure, high coordination to be able to do movements, being able to succeed despite various mental, physical, and physical obstacles, and in case of failure, essential personality traits and sufficient motivation for exercising are required (Horst, 1976). The Success Motivation Theory tries to explain why people attend an activity, make so much effort to achieve the difficult, and continue it for a long time (Hayashi, 1994). If it can be understood why differences in motivation differ from person to person, it may be easier to direct people in a positive direction. The motivation for success approach sees motive situations as the basis of sportive behavior. These motive situations are named as “*the drive to succeed*” and “*the drive to avoid failure*” (Arik, 1996). The relationship between the strength of motivation and success is very important in sports. According to Mc Clelland, success motivation is an effort to reach or exceed a certain degree in the related success target. If success is achieved as a result of the action, positive emotions such as joy, happiness, and pride emerge. In a state of failure, the person shows negative emotions such as embarrassment, anger, and dissatisfaction. The goal of action towards success is to reach positive emotions or escape from negative emotions (İkizler and Karagözoğlu: 1997). The motivation for success is defined as doing a job skillfully, accomplishing it perfectly, overcoming obstacles, doing better than others (Gill, 1986). The strength that enables athletes to participate in high-intensity exercising and maintain it for a long time can be explained by the “Success Motivation Theory”, which has an important place among motivation theories. This theory explains why individuals participate in physical activity, spend so much power to achieve the difficult, and why they continue it for a long time (Tiryaki, 2000). It is accepted that competition or competitiveness inherent in sports generally develops from the motivation for success. The focus of the need for success theory is that some individuals get higher satisfaction from achieving activities based on success. However, the point to note here is that the perception of success will vary from individual to individual. In other words, each individual is obliged to determine his own successful behavior. Therefore, if the performance-based result is perceived as an individual’s effort and skill, this can be considered a success. But if the performance-based outcome is attributed to the

individual's incompetence or low effort, this is also considered a failure. Therefore, it can be considered a success for one and a failure for the other (Tiryaki & Gödelek, 1997). The characteristics of the concept of motivation for success in sports are; it consists of the drive to show power, the drive to approach success, and the drive to avoid failure. The scope of these features is:

- The Motivation to Show Power: It manifests itself in the way people have prestige over other persons, exerting influence or being stronger than others when compared to them. Individuals who have the motivation to show high power have a high tendency to take charge and lead. In addition, individuals with a high motivation to show power are considered as sociable people, and they are considered as individuals who have control over relationships with people, including their friends. In addition, individuals with strong aforesaid aspects have a high tendency to participate in organizations where they can reach satisfaction and to tend towards professional fields (Aktop, 2002; cited in Dirmen, 2014: 33).
- Motive to Approach Success: This sub-dimension is defined as the capacity of an individual to expect positive effects from competitive environments. It is stated that the motive to approach success expresses the intrinsic motivation of the athlete to approach the psychology of the competition. In this respect, the motive to approach success is synonymous with the terms self-confidence, competence, or strength. Individuals with a high level of motivation to approach success have higher participation in environments where they can achieve success compared to individuals with low levels (Aktop, 2002; cited in Dirmen, 2014: 33).
- The motive to Avoid Failure: Another factor that determines the participation of the athlete in the competitive environment is the motive to avoid failure. The motive to avoid failure is closely related to the individual's anxious nature. When compared to individuals with low anxiety levels, individuals with high levels of anxiety tend to avoid the competitive environment (Cox, 1990; cited in Dirmen, 2014: 34). It is described in the figure.

While examining motivation in sports, it is useful to know the biological and social aspects of sports. An important requirement of people is movement. This requirement can be met thanks to sports activities and there are positive developments in the organism. Again, sports gained social and economic qualities and started to appeal to large masses. Sport has become a social institution and interest in sports has increased day by day. This situation also affected the motivation in sports and this concept gained social and biological dimensions apart from its psychological aspect (Başer, 1998).

Exercise dependence was first described by Veale (1995). This researcher defines exercise dependence as participation in exercise for recreational purposes resulting in uncontrollable excessive exercise behavior. Exercise dependence includes physiological (tolerance development) and/or psychological symptoms (anxiety, depression). While defining exercise dependence, this definition is considered together with the phenomenon of giving up. Commitment is also used as "not leaving" and "staying true". In addition, it is adapting to certain behavioral patterns in order to meet some goals.

Exercise dependence is the frequency and degree of participation in the exercise program (Koruç and Arsan, 2009: 106). Acting on the substance dependence criteria in DSM-IV for the diagnosis of exercise dependence, Veale has developed these criteria for exercise dependence. At least 3 of the following symptoms should be present within a 12-month period and should cause clinical distress and deterioration. In this case, valid criteria for diagnosis are:

- Tolerance: Increasing the amount of exercise to achieve the desired effect or reducing the effects as a result of continuing to exercise the same amount.
- Effects of Discontinuation of Exercise: symptoms characteristics of cessation of exercise resulting from the inability to exercise [eg. Exercising the same amount [or close to] to avoid symptoms of anxiety, fatigue] or cessation of the exercise and to provide relief.
- Intention Effect: exercise is often done more or for longer than thought.
- Loss of Control: a strong desire to exercise or a failure to control or stop exercising.
- Time: spending too much time exercising.
- Reducing Other Activities: reducing or abandoning social, work-related, or recreational activities in order to exercise.
- Continuity: continuing to exercise [such as continuing to run despite an injury] despite being aware of the presence of an ongoing physical or physiological problem (Vardar, 2012).

In the process of defining exercise dependence, the dependence diagnosis criteria in the "Diagnosis and Statistical Manual of Mental Disorders-IV" (DSM-IV-TR) of the American Psychiatric Association (APA) were taken as the basis and were also taken from other studies in the literature. (Griffiths, 2009; Köroğlu, 2001; Szabo & Griffiths, 2007; Vardar, 2012; Berczik, et al., 2012). Excessive and uncontrolled exercise of sports and training, which has an important role in the physical, mental, emotional, and social health of individuals, may result in negative consequences such as dependence rather than the expected benefit.

2. Method

This descriptive study aimed at determining the effect of the level of exercise dependence in students on their sport-specific achievement motivation is in the general survey model. The universe of the research was formed by the students studying at Uşak University Faculty of Sport Sciences in the 2020-2021 academic year. The sample of the research is 54 women and 63 men from the coaching training department; A total of 200 students are composed of 22 women, 34 men, 14 women, and 13 men from the department of physical education teaching. The aim of the study was explained to 200 students who accepted the study. First, the subjects were administered the Willis Sports-Specific Achievement Motivation Scale. Later, the Exercise Dependence Scale was applied. The obtained data were subjected to a normal distribution test. As a result of the test, it was determined that the data did not show normal distribution. Therefore, Kruskal Wallis and Mann Whitney-

U tests were used at the significance level of 0.05 for mean differences. In order to determine the relationship between variables, Pearson correlation analysis was performed at a 0.05 significance level. Since there was a relationship between the two variables, regression analysis was performed at a significance level of 0.01 in order to determine the effect of the level of exercise dependence, which is the independent variable, on the dependent variable, the sport-specific motivation for success. The scales used in data collection are explained below:

2.1 Sports-specific Achievement Motivation Scale (SRAMC)

There is the “Willis Sports Specific Achievement Motivation Scale” which is used to determine the sport-specific achievement motivations of the students participating in the study. The scale was developed by Willis in 1982 and consists of two sub-dimensions. These are the motive to show strength sub-dimension and the motive-related sub-dimensions of success. Motives for success; it consists of the motive for approaching success and avoiding failure. Motivation to approach success basically means the same as Atkinson’s motivation to be successful approach and it is generally expressed as the motive to be successful in the literature (Dirmen, 2014: 33).

2.2 Exercise Dependence Scale

The validity and reliability study of the scale was attended by a total of 178 active athletes from Gazi University Faculty of Sport Sciences (n = 80) and Selçuk University Faculty of Sport Sciences (n = 98) in the 2016-2017 academic year. SPSS 23 package program was used for validity and reliability studies. Lisrel 8.80 was used in the confirmatory factor analysis process. Within the scope of item analysis, item-total test correlation and 27% sub-upper group total score evaluations were made to the scale. Cronbach Alpha reliability coefficient was found to be 0.88, while 0.83 for the first dimension; 0.79 for the second dimension; 0.77 for the third dimension. For the construct validity of the scale, exploratory (EFA) and confirmatory factor analysis (CFA) were applied. As a result of EFA, the scale consists of 17 items and shows a structure with three sub-factors. The total variance rate explained by the factors is 54.61%. Accordingly, it can be said that the Exercise Dependence Scale (EDS) is a valid and reliable measurement tool (Tekkurşun et al., 2018).

3. Findings

Table 1: Gender of the Students

	Frequency	%
Female	90	45
Male	110	55
Total	200	100

55% of the students are male, 45% are female.

Table 2: Age Groups of the Student

	Frequency	%
18-27	186	93
28-37	14	7
Total	200	100

93% of students are in the 18-27 age group, 7% are in the 28 and 37 age group.

Table 3: Sports Practice Time of Students

	Frequency	%
0-9 years	135	67,5
10-18 years	65	32,5
Total	200	100

67.5% of the students have been doing sports for 0-9 years and 32.5% for 10-18 years.

Table 4: Students' Scholarship Status

	Frequency	%
Yes	45	22,5
No	155	77,5
Total	200	100

77.5% of students do not receive scholarships, 22.5% of them do.

Table 5: Income Status of the Families of Students

	Frequency	%
0-2500	53	26,5
2500-5000	88	44
5000 +	59	29,5
Total	200	100

The families of the students have a monthly income of 44% 2500-5000, 29.5% 5000 and above, and 26.5% 0-2500.

Table 6: Departments of Education by Students

	Frequency	%
Teaching	56	28
Coaching	117	58,5
Sports management	27	13,5
Total	200	100

58.5% of them study in coaching education, 28% in physical education teaching and 13.5% in sports management.

Table 7: Students' Exercise Dependence Levels

	Frequency	%
Normal Group	13	6,5
Low Risk Group	40	20
Risk Group	92	46
Dependent group	55	27,5
Total	200	100

46% of the students are in the risk group, 27.5% in the dependent group, 20% in the low-risk group and 6.5% in the normal group.

Table 8: Exercise Dependence Levels According to the Departments of the Students

		Frequency	%
Teaching	Normal Group	6	10,7
	Low-Risk Group	12	21,4
	Risk Group	23	41,1
	Dependent Group	15	26,8
	Total	56	100
Coaching	Normal Group	5	4,3
	Low-Risk Group	23	19,7
	Risk Group	54	46,2
	Dependent Group	35	29,9
	Total	117	100
Sports Management	Normal Group	2	7,4
	Low-Risk Group	5	18,5
	Risk Group	15	55,6
	Dependent Group	5	18,5
	Total	27	100

41.1% of the students of the department of physical education teaching were in the risk group, 26.8 were in the dependent group, 21.4 were in the low-risk group and 10.7% were in the normal group. In the coaching education department, 46.2% of the students are in the risk group, 29.9% in the dependent group, 19.7% in the low-risk group, and 4.3% in the normal group. 55.6% of the sports management students are in the risk group, 15.5% in the dependent group, 18.5% in the low-risk group, and 7.4% in the normal group.

Table 9: Students' Sport Related Achievement Motivation Level

	Frequency	%
Low	1	0,5
Medium	38	19
High	118	59
Very-High	43	21,5
Total	200	100

The students' sport-specific achievement motivation levels are 59% high, 21.5% very high, 19% medium and 0.5% low.

60.7% of the students of the department of physical education teaching are high, 25% are very high and 14.3% are at medium level. 59% of the coaching education department students are high, 19.7% are very high, 20.5% are medium and 0.9% are low. 55.6% of the sports management department students are high, 22.2% are high and 22.2% are medium level.

Table 10: Sports-specific Achievement Motivation Levels of Students According to the Departments They Study

		Frequency	%
Teaching	Medium	8	14,3
	High	34	60,7
	Very-High	14	25
	Total	56	100
Coaching	Low	1	0,9
	Medium	24	20,5
	High	69	59
	Very High	23	19,7
	Total	117	100
Sports Management	Medium	6	22,2
	High	15	55,6
	Very-High	6	22,2
	Total	27	100

Table 11: Normality Test Regarding Exercise Dependence and Sports-Related Achievement Motivation Level

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Exercise Dependence Level	0,261	200	0	0,848	200	0
Sports-specific Achievement Motivation Level	0,075	200	0,008	0,977	200	0,003

Exercise dependence data showed normal distribution ($p < 0.05$). Sports-specific achievement motivation data were not normally distributed ($p < 0.05$).

Table 12: Mann Whitney-U Test for the Difference of Students' Exercise Dependence Levels and Sports-Related Achievement Motivation Levels According to Their Genders

	Gender	N	Mean Rank	Z	p
Exercise Dependence Levels	Female	87	94,76	-0,991	0,321
	Male	110	102,35		
	Total	197			
Sports-Related Achievement Motivation Level	Female	87	96,45	-0,558	0,577
	Male	110	101,01		
	Total	197			

There is no significant difference between students' gender and exercise dependence levels ($p > 0.05$). There is no significant difference between students' gender and their sport-related achievement motivation levels ($p > 0.05$).

Table 13: Kruskal Wallis Test Regarding the Differences in the Departments of Students, Exercise Dependence Levels and Sports-specific Achievement Motivations

		N	Mean Rank	Chi-Square	df	p
Exercise Dependence Levels	Teaching	56	95,13	1,595	2	0,450
	Coaching	117	104,56			
	Sports Management	27	94,04			
	Total	200				
Sports-specific Achievement Motivation Level	Teaching	56	105,82	0,853	2	0,653
	Coaching	117	97,41			
	Sports Management	27	102,87			
	Total	200				

There is no significant difference between the departments where students are studying and their level of exercise dependence ($p > 0.05$). There is no significant difference between the departments of the students and their sports-related achievement motivation levels ($p > 0.05$).

Table 14: Kruskal Wallis Test Regarding the Difference Between Age Groups and Exercise Dependence Levels and Sports Specific Achievement Motivation Levels

	Age Group	N	Mean Rank	Z	p
Exercise Dependence Levels	18-27	186	100,06	-0,42	0,674
	28-37	14	106,36		
	Total	200			
Sports-specific Achievement Motivation Level	18-27	186	100,15	-0,316	0,752
	28-37	14	105,21		
	Total	200			

There is no significant difference between the age groups and exercise dependence levels of the students ($p > 0.05$). There is no significant difference between the age groups of students and their sport-specific achievement motivation levels ($p > 0.05$).

Table 15: Mann Whitney-U Test on the Difference between Monthly Income Levels of Students' Families and Their Exercise Dependence Levels and Sports-Related Achievement Motivation Levels

	Total Income of the Family	N	Mean Rank	Chi-Square	df	p
Exercise Dependence Levels	0-2500	53	89,45	3,532	2	0,171
	2500-5000	88	107,13			
	5000 +	59	100,53			
	Total	200				
Sports-specific Motivation Level	0-2500	53	106,2	0,171	2	0,677
	2500-5000	88	97,32			
	5000 +	59	100,12			
	Total	200				

There is no significant difference between the monthly income of the students' families and their level of exercise dependence ($p > 0.05$). There is no significant difference between

the monthly income of the students' families and their level of motivation for achievement specific to the sport ($p > 0.05$).

Table 16: Regression Analysis Related to the Effect of Exercise Dependence on Students' Motivation Levels of Success in Sports

Dependent Variable: Sports Specific Achievement Motivation					
Independent Variable	R ²	F	β	t	p
Exercise Dependence	0,136	32,264	-0,374	28,597	0,00

** Significant at $p < 0.01$ level.

The exercise dependence levels of the students have a weak negative effect on their sport-specific achievement motivation ($p < 0.01$).

4. Discussion

The findings of this study on the relationship between sports-specific achievement motivation and exercise dependence levels of sports science faculty students are as follows.

As can be seen from Table 1, 55% of the students are male and 43.5% are female. As can be seen from Table 2, 93% of the students are in the 18-27 age group, and 7% are in the 28 and 37 age group. As can be seen from Table 3, 67.5% of the students have been doing sports for 0-9 years and 32.5% for 10-18 years. As can be seen in Table 4, 77.5% of the students do not receive scholarships, 22.5% of them do. As can be seen in Table 5, 44% of the students' families have a monthly income of 2500-5000, 29.5% of them 5000 and above, and 26.5% of them 0-2500. As can be seen from Table 6, 58.5% of the students in coaching education, 28% in physical education teaching, and 13.5% in sports management.

As can be seen in Table 7, 46% of the students are in the risk group, 27.5% in the dependent group, 20% in the low-risk group, and 6.5% in the normal group in terms of exercise dependence levels. As can be seen from Table 8, 41.1% of the students of the physical education teaching department are in the risk group, 26.8 are in the dependent group, 21.4 are in the low-risk group and 10.7% are in the normal group. In the coaching education department, 46.2% of the students are in the risk group, 29.9% in the dependent group, 19.7% in the low-risk group, and 4.3% in the normal group. 55.6% of the sports management students are in the risk group, 15.5% in the dependent group, 18.5% in the low-risk group, and 7.4% in the normal group.

As can be seen from Table 9, 59% of the students' sport-specific achievement motivation level is high, 21.5% is very high, 19% is medium and 0.5% is low. As can be seen from Table 10, 60.7% of the students in the department of physical education teaching are high, 25% are very high and 14.3% are at medium level. 59% of the coaching education department students are high, 19.7% are very high, 20.5% are medium and 0.9% are low. 55.6% of the sports management department students are high, 22.2% are high and 22.2% are medium level.

There is no difference between the gender of the students and their levels of exercise dependence and their sport-specific achievement motivation. The gender of the students does not affect their exercise dependence and sport-specific achievement motivation. Weinberg and Gould (1995) stated that in finding the differences between the genders of women and men, it should be taken into consideration that they have similarities rather than differences. Again, Yukl (2002) emphasized that the differences between women and men in their gender may be greater than the differences between men and women. These results coincide with the findings of our study. In the findings of Er et al. (2002) on the analysis of motivation for success in sports in terms of gender, it is reported that women are higher.

There is no difference between the age groups of students and both their exercise dependence levels and their sport-specific achievement motivation levels. The age groups of students do not affect their exercise dependence and motivation for success in sports.

There is no difference between the departments of the students and their levels of exercise dependence and their level of achievement motivation specific to the sport. The departments they study do not affect their exercise dependence and motivation for success in sports.

There is no difference between the monthly income of the families of the students and their levels of exercise dependence and their level of motivation specific to sports. Their families' monthly income does not affect their exercise dependence and their level of motivation for success specific to the sport. Contrary to the findings we obtained, according to the study conducted by Bavlı et al. (2015) on exercise dependence in dancers, it was found that the level of exercise dependence of people showed a statistically significant difference according to income.

Students' exercise dependence levels have a weak negative effect on their specific achievement motivation levels in sports. As the exercise dependence levels of the students increase, their sport-specific achievement motivation levels decrease. This effect level is 37.4%.

5. Result

In the light of the data obtained from the study, 27.5% of the students are in the addicted group in terms of exercise dependence. On the other hand, it is quite thought-provoking that 46% is also in the risk group and only 6.5% is in the normal group. According to Allegre et al. (2006), Morgan talks about negative dependence. There are two main characteristics of negative dependence; the first one is believing that exercise is needed to cope and one cannot live without running every day. The second one is experiencing withdrawal symptoms when exercise is deprived. These are anxiety, concern, guilt, irritability, nervousness, restlessness, insomnia, insensitivity, decreased pleasure, headaches, and laziness. Morgan also has negative dependence; Believing that he needs to exercise to cope with daily events and that he cannot live without running every day,

experiencing withdrawal symptoms when deprived of exercise, and continuing to run for whatever reason (occupational, social, health problems). Exercise addicts, like substance addicts, may believe that everything is under their control. However, exercise addicted students also need help in coping with their problems. Some addicts need therapy, while others can overcome them with educational approaches. Education, psychotherapy, and alternative treatment options are recommended for exercise dependence. Especially focusing on cognitive processes and behavioral approach is recommended. For this, exercise addicted students are expected to adopt: Accept their role and responsibility for primary support and participate in management processes. Understanding that dependence interrupts communication with other people. It is to recognize that excessive fear and helplessness are caused by loss of control and this may be erratic behavior associated with compulsion.

Since exercise dependence has a negative effect of 34.7% on sport-specific motivation for success, exercise addicted students should be directed to education, psychotherapy, and alternative treatment methods in order to increase sportive success.

Conflict of Interest Statement

The authors declare no conflicts of interests.

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