



Mental Toughness Levels of Male and Female Football Players

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Abstract

The aim of this study is to determine the mental toughness levels of male and female football players in sports. The population of the study consists of female football players from the Super League in 2021-2022 and amateur football players in the province of Batman. The sample of the study consists of 232 football players who voluntarily participated in the online questionnaire. Data on the introductory characteristics of the players were obtained with a "personal information form". "Sport Mental Toughness Questionnaire-SMTQ" was used to determine mental toughness of the players. The obtained data were transferred to the SPSS 22 software program for statistical operations. Frequency analysis, percentage analysis, arithmetic mean, t test, Anova analysis and post hoc tests were used to analyze the data. According to the variables of age, education level, years of licenced player and their level of football, statistically significant differences were found between the mental toughness levels among football players ($p<.05$). According to gender, no difference was found between the mental toughness levels of the football players ($p>.05$). It is thought that it is important to perform mental training in a disciplined way in order for the football players to be psychologically ready for the match as well as their competitive performance.

Keywords: Football; Male; Female; Mental Toughness in Sports

Erkek ve Kadın Futbolcuların Zihinsel Dayanıklılık Düzeylerinin İncelenmesi

Gerçekleştirilen bu çalışmanın amacı; erkek ve kadın futbolcuların sporda zihinsel dayanıklılık düzeylerini belirlemektir. Çalışmanın evreni 2021-2022 yılında Süper Lig'de oynayan kadın futbolcular ve Batman ilinde oynayan amatör futbolcular oluşturmaktadır. Araştırmanın örneklemini ise gönderilen çevrimiçi anket çalışmasına gönüllü olarak katılım gösteren 232 futbolcu oluşturmaktadır. Futbolcuların demografik özelliklerine ilişkin bilgiler "kişisel bilgi formu" ile elde edilmiştir. Futbolcuların sporda zihinsel dayanıklılık düzeylerini belirlemeye ilişkin bilgiler "Sporda zihinsel dayanıklılık ölçeği" ile elde edilmiştir. Elde edilen veriler istatistiksel işlemler için SPSS 22 yazılım programına aktarılmıştır. Verilerin çözümlenmesinde frekans analizi, yüzde analizi, aritmetik ortalama, t testi, Anova analizleri ve post hoc testleri kullanılmıştır. Gerçekleştirilen Analiz sonucunda; yaş, eğitim durumu, kaç yıldır lisanslı sporcusunuz ve futbolculuk seviyeniz değişkenlerine göre futbolcuların sporda zihinsel dayanıklılık düzeyleri arasında istatistiksel olarak anlamlı farklar bulunmuştur($p<.05$). Cinsiyet değişkenine göre ise futbolcuların sporda zihinsel dayanıklılık düzeyleri arasında herhangi bir farklılık tespit edilmemiştir($p>.05$). Futbolcuların müsabaka performansının yanı sıra psikolojik olarak maça hazır olabilmeleri için disiplinli bir şekilde zihinsel antrenmanlarının yapılmasının önemli olduğu düşünülmektedir.

Anahtar Kelimeler: Futbol; Erkek; Kadın; Zihinsel Dayanıklılık

INTRODUCTION

One of the new and important ideas seen in exercise and sports psychology in order to raise the performance levels of football players to a better level is the concept of mental toughness (1,2).

Mental training methods are carried out with the aim of reinforcing physical exercises in motor skill acquisition (3). There are studies that mental training methods have benefits for motor skill learning in individuals with a high level of health, affect them positively, and although they are not as effective as physical exercise alone, if they are applied together with physical exercise, they are more (4).

Although there are different definitions of mental toughness, which is important and necessary for football players to exhibit and maintain the high performance they need, the perspective on the concept of mental toughness is that it is very beneficial for successful athletes (5). Mental toughness is seen as a necessary, beneficial and rewarding quality for the development of skills in environments with adverse conditions such as football training and challenging exercises (6). mental stamina; Mental thinking is expressed as a process of imagining skills and abilities in their minds, as well as a visualization training (7).

It is important that mental development coincides with the development of physical skills. For this reason, it is important to increase mental endurance, to provide and maintain mental development. It is seen that it is important for the development of the athletes that the football players do mental skill training in regular physical training and that these skill techniques are applied systematically (8,9).

Mental endurance training is beneficial in increasing and maximizing the athlete's performance in training and competitions. It supports the acquisition and use of mental and physical skills and sees it as an effective and tactical approach. The psychological level, character qualities, spiritual skills of the athletes and the technical features and tactics they apply in order to develop all of them show that they are in mental preparation (10).

The purpose of mental training; It is to reduce stress by using all kinds of tactics in order to control the physical and mental fatigue of the athlete, to keep his emotional level under control, to keep himself under control and to achieve a holistic recovery (11). Prominent uses of mental training techniques include imagination, self-talk, useful thinking, concentration exercises, stretch training, breathing techniques, and feedback (12).

"Mental stamina; It is the power to recuperate in some negative situations such as disability, failure, turmoil and increasing obligation every day, and it is defined as the positive spiritual capacity that can be developed for regeneration (13).

It is inevitable for football players with high mental endurance and continuous mental training to achieve success and maintain this success. This study, it was aimed to determine the mental endurance levels of male and female football players.

MATERIALS AND METHODS

Ethics Committee Decision

This study was approved by the Ethics Committee of Yozgat Bozok University on 24.06.2022. As stated in the letter E-55135017-770-79642, it has been decided that there is no ethical objection.

Universe and Sample

The universe of the research consists of amateur football players playing football in Batman province and female football players playing in the super league in the 2021-2022 season. The sample of the research consists of 232 football players who participated in the online questionnaire sent.

Data Collection Tools

In the first stage of the research form applied in the research, the personal information form was used, and in the other stage, the "Mental Endurance Scale in Sports" was used to determine the mental toughness levels of female and male football players.

Mental Endurance Inventory in Sports

The scale, which was developed by Sheard, Golby, and Van Wersch (2009) to measure the mental endurance levels of the athletes, was adapted into Turkish by Altıntaş (2016) (14,15). In addition to giving information about total mental toughness, the scale; It consists of 14 questions that determine the sub-dimensions of trust (1,5,6,11,13,14), continuity (3,8,10,12) and control (2,4,7,9). Athletes use a 4-point Likert type measurement (completely false, false, true, completely true) to indicate to what extent they agree with the statements in the items. The scale includes reverse questions (2,4,7,8,9,10).

In this study, the reliability of the trust sub-dimension was determined as 0.68, the reliability of the continuation sub-dimension as 0.58 and the reliability of the control sub-dimension as 0.73. Therefore, it was determined that the scale was reliable.

Analysis of Data

The data obtained in the study were transferred to the SPSS 22.0 program. It is very important to prepare the data obtained in the study before the analysis processes and to make it suitable for the analysis processes. Data with skewness and kurtosis values between +1.5 and -1.5 show normal distribution (16). The skewness and kurtosis values were calculated for all dimensions in the scales. Since the skewness and kurtosis coefficients of the variables within the scope of the study are below 1.5, it meets the normal distribution assumption of the variables.

Frequency and percentage analysis, t test and ANOVA analysis were used and the statistically significant difference level was determined as 0.05.

FINDINGS

Table 1. Findings of the demographic variables of the football players.

Variables	Category	n	%
Gender	Male	131	56.5
	Female	101	43.5
Age	18 - 20 years old	110	47.4
	21 - 23 years old	49	21.1
	24 - 26 years old	43	18.5
	27 - 29 years old	19	8.2
	30 and older	11	4.7
	primary education	9	3.9
education status	high school	115	49.6
	associate degree	27	11.6
	licence	71	30.6
	high education	10	4.3
Sports year	less than 1 year - 2 years	58	25.0
	3 - 5 year	56	24.1
	6 - 7 year	48	20.7
	8 year and older	70	30.2
Position	Professional	104	44.8
	Amateur	128	55.2

When Table 1 is examined; 131 (56.5%) of the football players are male and 101 (43.5%) are female. 110 (47.4%) 18-20, 49 (21.1%) 21-23, 43 (18.5%) 24-26, 19 (8.2%) 27-29 age group, 11 (4%), 7 over 30 years old. 9 (3.9%) primary school, 115 (49.6%) high school, 27 (11.6%) associate degree, 71 (30.6%) undergraduate, 10 (4%) graduate, 3 58% (25%) Less than 1 year – 2 years, 56 (24.1%) 3 – 5 years, 48 (20.7%) 6 – 7 years, 70 (30.2%) 8 years or more are licensed football players.

Table 2 presents the findings regarding the sub-dimensions of mental toughness in sports.

Table 2. Findings regarding the sub-dimensions of the mental toughness scale in sports and the total mean score.

sub dimensions	N	Min.	Max.	Mean	ss
Trust Sub-Dimension	232	10.00	24.00	1.41	3.20
Continuity Sub-Dimension	232	6.00	16.00	0.95	2.44
Control Sub-Dimension	232	4.00	16.00	0.67	3.21
Total Size	232	26.00	56.00	3.04	6.54

When Table 2 is examined; It is seen that the most important sub-dimension of mental toughness in sports is the sub-dimension of trust. The total mean score of the mental toughness scale in sports was determined as 3.04. It can be concluded that the mental endurance levels of the football players in sports are at a high level when the total score is considered.

Table 3. Gender variable t-test findings.

Sub-Dimensions	Gender	n	Mean	Ss.	t	p
Trust Sub-Dimension	Male	131	1,43	3,22	1,109	0,269
	Female	101	1,40	3,17		
Continuity Sub-Dimension	Male	131	0,97	2,47	1,633	0,104
	Female	101	0,93	2,39		
Control Sub-Dimension	Male	131	0,67	3,36	,131	0,896
	Female	101	0,66	3,02		

When Table 3 is examined; According to the gender variable, no significant difference was found between the mental toughness confidence sub-dimension, continuity sub-dimension and control sub-dimension in sports ($p > .05$). It has been determined that male football players have higher self-confidence, continuity and control levels than females.

Table 4. Findings of your age variable Anova analysis.

Sub-Dimensions	Age	n	Mean	Ss.	f	p	Difference
Trust Sub-Dimension	18 - 20 year old (1)	110	1.41	2.83	1.680	0.155	-
	21 - year old (2)	49	1,37	3,61			
	24 - 26 year old (3)	43	1,43	3,85			
	27 - 29 year old (4)	19	1,49	2,41			
	30 and older (5)	11	1,52	2,64			
Continuity Sub-Dimension	18 - 20 year old (1)	110	0,96	2,21	3,219	0,014	3 > 2
	21 - year old (2)	49	0,87	2,77			
	24 - 26 year old (3)	43	1,00	2,33			
	27 - 29 year old (4)	19	0,97	2,56			
	30 and older (5)	11	0,98	2,45			
Control Sub-Dimension	18 - 20 year old (1)	110	0,64	3,01	3,538	0,008	3 > 1,4
	21 - year old (2)	49	0,63	3,15			
	24 - 26 year old (3)	43	0,78	3,50			
	27 - 29 year old (4)	19	0,62	2,63			
	30 and older (5)	11	0,70	3,67			

* $p < 0,05$

When Table 4 is examined; According to your age variable, there is a statistically significant difference between the continuity sub-dimension of the mental toughness scale and the control sub-dimension ($p < .05$). According to the results of the Anova analysis, which was conducted to determine between which age groups the mental endurance levels of the footballers differ in sports, the continuity levels of the football players between the ages of 24-26 are higher than those between the ages of 21-23. In the control sub-dimension, players aged 24 – 26 are higher than players aged 18–20 and 21–23. There was no significant difference in the confidence sub-dimension ($p > .05$).

Table 5. Findings of Anova analysis of educational status variable.

Sub-Dimensions	Educational Status	n	Mean	Ss	f	p	Difference
Trust Sub-Dimension	primary education(1)	9	1.35	2.23	3.552	0.008	4 > 3
	high school(2)	115	1.41	3.23			
	associate degree(3)	27	1.29	2.94			
	Licence(4)	71	1.48	2.95			
	high education(5)	10	1.45	4.24			
Continuity Sub-Dimension	primary education(1)	9	0.79	2.08	6.050	0.000	4 > 3.1
	high school(2)	115	0.96	2.29			
	associate degree(3)	27	0.86	2.34			
	Licence(4)	71	1.00	2.19			
	high education(5)	10	0.85	3.87			
Control Sub-Dimension	primary education(1)	9	0.67	2.92	1.303	0.270	-
	high school(2)	115	0.65	3.09			
	associate degree(3)	27	0.62	2.62			
	Licence(4)	71	0.71	3.42			
	high education(5)	10	0.72	4.29			

*p<0,05

When Table 5 is examined; It was determined that there was a statistically significant difference between the confidence sub-dimension and the continuity sub-dimension of the mental toughness scale in sports, according to the variable of educational status (p<.05). According to the results of the Anova analysis conducted to determine the differentiation between the education levels of the football players in the sports branch, it is seen that the football players with undergraduate education are at a higher level than the football players with associate education. In the trust sub-dimension, those with undergraduate education are at a higher level than those with associate degree education. In the continuity sub-dimension, it is seen that those who have undergraduate education are at a higher level than those who have primary education and associate degree education. There was no significant difference in the control sub-dimension (p>.05).

Table 6. How many years have you been a licensed athlete variable Anova analysis findings.

Sub-Dimensions	Sports Year	n	Mean	Ss	f	p	Difference
Trust Sub-Dimension	Less Than 1 Year - 2 Years(1)	58	1.35	2.80	6.134	0.000	4.3 > 1
	3 - 5 Year(2)	56	1.38	3.12			
	6 - 7 Year(3)	48	1.40	3.37			
	8 Year and Older(4)	70	1.51	3.12			
Continuity Sub-Dimension	Less Than 1 Year - 2 Years(1)	58	0.94	2.29	4.940	0.002	4 > 2
	3 - 5 Year(2)	56	0.90	2.48			
	6 - 7 Year(3)	48	0.94	2.63			
	8 Year and Older(4)	70	1.01	2.19			
Control Sub-Dimension	Less Than 1 Year - 2 Years(1)	58	0.62	2.96	2.947	0.034	4 > 1
	3 - 5 Year(2)	56	0.66	2.94			
	6 - 7 Year(3)	48	0.63	3.09			
	8 Year And Older(4)	70	0.73	3.54			

*p<0,05

When Table 6 is examined; According to the variable of your football playing level, a statistically significant difference was found in the continuity sub-dimension of the mental toughness scale in sports (p<.05). In the continuity sub-dimension, the continuity levels of amateur football players are higher than professional football players. There is no statistically significant difference between the confidence sub-dimension and the control sub-dimension of the mental toughness scale in sports (p>.05).

Table 7. T-test findings for your football player level variable.

Sub-Dimensions	Position	n	Mean	Ss	t	p
Trust Sub-Dimension	Professional	104	1.42	3.26	-0.018	0.985
	Amateur	128	1.42	3.16		
Continuity Sub-Dimension	Professional	104	0.90	2.59	-3.937	0.000
	Amateur	128	1.00	2.17		
Control Sub-Dimension	Professional	104	0.68	3.17	0.972	0.332
	Amateur	128	0.66	3.24		

*p<0,05

When Table 7 is examined; According to the variable of your footballing level, a statistically significant finding was found in the continuity sub-dimension of the mental toughness scale in sports ($p<.05$). In the continuity sub-dimension, the continuity levels of amateur football players are higher than professional football players. There is no statistically significant difference between the confidence sub-dimension and the control sub-dimension of the mental toughness scale in sports ($p>.05$).

CONCLUSION AND DISCUSSION

As a result of the study, no significant difference was found between the mental toughness confidence sub-dimension, continuity sub-dimension and control sub-dimension in sports according to the gender variable ($p>.05$). It has been determined that male football players have higher levels of confidence, continuity and control than female. It can be said that men show more interest in football than female, they start football at an early age, they train harder and more, they watch football matches more, and they evaluate every field where they can play football and play football. In general, it is thought that men show more interest than female, start football at an early age and receive training in an infrastructure. In the literature, there are similar results in studies investigating the mental endurance levels of different participants in sports, and there are also results that do not show similarity.

In the study in which the exercise addiction and mental endurance levels of the students of the faculty of sports sciences were examined, it was determined that there was no semantic difference between the mental endurance levels in sports according to the gender of the participants (17). In the study, no statistically significant difference was found between mental endurance in sports and gender (18). It is seen that the results of the study are similar to the present study.

In the studies conducted in the literature review, a significant difference was found between the levels of mental endurance in sports according to gender (19,20,21,22,23,24). It is seen that the findings of the study do not show similarity with this research. Findings determined in the literature in which various studies are researched are seen in studies that do not show similarities as well as similarities with this research.

According to the age variable of the football players participating in the study, it is seen that there is a statistically significant difference between the mental endurance continuity sub-dimension and control sub-dimension in sports ($p<.05$). According to the results of the Anova analysis, which was carried out to determine between which age groups the mental endurance levels of the footballers differ in sports, the continuity levels of the football players between the ages of 24-26 are higher than those of the football players between the ages of 21-23. In the control sub-dimension, football players aged 24 – 26 are higher than those aged 18 – 20 and 21 – 23. As football players get older, they have more professional thinking, gain experience and experience, work harder than football players younger than themselves, and keep themselves under control in order to increase their performance with the experience they have gained. It is thought that by paying attention to their eating and drinking and social life, they want to increase their level of continuity in training and competitions and reach the peak in their performance. No significant difference was found in the trust sub-dimension ($p>.05$). In the literature review, the same results as well as different results are seen in the studies in which the mental endurance levels of the participants in sports are investigated.

In the study conducted to examine the mental endurance levels of the groups of athletes who do team and individual sports at elite level according to different variables, it is seen that there is a significant difference between the mental endurance levels in sports according to the age variables of the participants (18). The study of Crust et al. also shows parallelism with the study and states that age is important for determining mental

endurance in sports (25). Studies conducted in the literature review report that mental endurance in sports develops directly with the age of the football player (26-27). It was observed that the findings obtained in the study were similar to the research conducted.

In another study, it was found that there was no statistically significant difference between mental endurance and age in sports (28). The findings in the study do not show parallelism with the study. Findings in the literature, in which different studies are investigated, are seen in studies that do not show similarities as well as similarities with this research.

According to the educational status variable of the football players participating in the study, it is seen that there is a statistical significance in the sub-dimension of confidence in sports mental toughness scale and in the sub-dimension of continuity ($p < .05$). Mental endurance levels of football players in sports according to their education level in the trust sub-dimension, it is seen that the football players who have undergraduate education are at a higher level than the football players who have an associate degree education. In the continuity sub-dimension, it was determined that those who received undergraduate education were at a higher level than those who received primary education and associate degree education. It is thought that as the level of education increases, mental endurance in sports will increase. It can be expected that the mental endurance levels of the football players at the undergraduate and graduate level will be higher than the football players at the high school level. There is no significant difference in the control sub-dimension ($p > .05$). In the literature review, there are similar results as well as different results in studies investigating the mental resilience levels of the participants.

In the study of examining the mental endurance of the athletes according to various variables, a significant difference was found in the levels of mental endurance in sports according to the variable of educational status (29). It is seen that the findings of the research have similarities with this research.

Mental endurance in sports: In a study of taekwondo athletes, it is seen that there is no semantic difference when sports mental endurance levels are examined according to the variable of educational status (30). The findings in the study are not similar to the present study. In the literature review, the findings found by examining various studies are similar to this research, as well as studies that do not show similarities.

It is seen that there is a statistically significant difference in all sub-dimensions of the mental toughness scale in sports according to the variable of how many years have you been a licensed athlete of the football players participating in the study ($p < .05$).

According to the result of how many years you have been a licensed athlete in the sports branch, the self-confidence levels of football players licensed for 8 years or more are higher than those licensed for less than 1 year, 2 years, 3 - 5 years. Considering the continuity sub-dimension, the level of football players who have been licensed for 8 years or more is higher than those who have been licensed for 3-5 years. It can be said that our mental endurance in sports increases every year when we start playing football in a team and continue regularly. When continued as a licensed football player for many years, it can be said that they increase their self-confidence, self-control, ability to dominate their environment and increase their continuity by doing difficult trainings and competitions every year, and in this case, they increase their mental endurance levels every year. It is thought that experienced football players encounter different situations more than once and can resist the same positions more easily. In the literature review, there were similar results in studies investigating the mental endurance levels of various participants in sports, as well as various results. In the study examining the relationship between the levels of mental toughness in sports and alienation from morality in sports, it is seen that there is a statistically significant difference in favor of the students who are in the 8 or higher group of mental toughness confidence (31). In the study, it was determined that there is a significant difference between the mental endurance in sports and the experience of how many years you have been a licensed athlete (32). It has been determined that experience (sports age) is a major factor in increasing mental endurance levels in sports. In a different study, he reported that the level of experience is an important factor that increases the level of mental resilience in sports (27). These results support the research findings.

In the study examining the mental endurance of the athletes according to various variables, it was determined that there was no semantic difference in the mental endurance levels in sports according to the variable of how many years have you been a licensed athlete (30). This result does not support the research

findings. In the literature review, the findings obtained by examining various studies are in parallel with the research, as well as studies that do not have similarity.

In the study, it is seen that there is a statistically significant difference according to the variable of your playing level in the sub-dimension of mental endurance continuity in sports ($p<.05$). In the continuity sub-dimension, the continuity levels of amateur football players are higher than professional football players. It is thought that the level of attendance of amateur football players is at a higher level, since male football players participate in all levels of amateur football, they train under more difficult conditions than female football players, and their physical structures are more durable than women. No semantic differences were found in the sub-dimension of trust and control in sports ($p>.05$). In the literature review, similar results were not found in studies investigating the mental endurance levels of various participants in sports.

In a study conducted with the students of the faculty of sports sciences, it was determined that the mental training characteristics of the professional athlete group were higher than the amateur athlete group (33). In another study, it is stated that professional athletes are more motivated by experiencing mental skills in sports, improving their performance in sports and learning methods and techniques compared to amateur athletes (34). When the literature is examined, the findings obtained do not coincide with the findings of the study.

As a result; It has been concluded that male football players have higher mental endurance levels than female football players playing in the super league, despite playing at an amateur level. It shows that the level of education on the mental toughness levels of the football players has an effect on the increase in the mental toughness levels as the education level increases. It has been determined that the most important sub-dimension of mental toughness in sports is the sub-dimension of trust. The total mean score of the mental toughness scale in sports was determined as 3.04. It can be said that the mental endurance levels of the football players in sports are at a high level when the total score is considered. It is thought that these results will be a source in directing male and female football players to mental training as well as physical training.

The following suggestions are included in the research.

- ⊗ Football clubs can organize informative programs and activities related to mental endurance in sports during pre-season and mid-season periods in order to be more successful and increase the performance of their football players.
- ⊗ Congress papers and studies on mental endurance in sports can be examined.
- ⊗ Studies in different countries on mental endurance in sports can be examined.
- ⊗ It is possible to meet with experts who will teach the benefits of mental endurance in sports by coaches and football players, and training on mental endurance in sports can be taken.

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