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PSYCHOLOGICAL RESILIENCE IN STUDENT-ATHLETES AND COMPETITIVE UNIVERSITY STUDENTS

PSIHOLOŠKA ODPORNOST PRI ŠTUDENTIH ŠPORTNIKIH

ABSTRACT

This research aims to analyze the relationship between sports age and psychological resilience level in gender, biological age, sports age, branch, and gender of student-athletes and competitive university students. "Personal Information Form" was used to determine the various demographic characteristics of the participants, and the "Short Resilience Scale" was used to determine the levels of resilience. According to the study's findings, there is a significant difference between psychological resilience and the sports age of male athletes in terms of sports age and gender. There is no significant difference between psychological resilience and sports age of female athletes in terms of biological age, branch, and gender. According to the research results, sports age is more effective than biological age on psychological resilience. As the duration of doing sports increases in males, psychological resilience develops, but the same is not valid for females. In addition, male students are more psychologically resilient than female students, and those who do individual sports are psychologically more resilient than those who do team sports. According to the results of the research, it can be concluded that psychological endurance level may differ depending on various circumstances.

Keywords: student, resilience, athlete, sports experience, university

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IZVLEČEK

Namen raziskave je analizirati povezavo med športno starostjo in stopnjo psihološke odpornosti glede na spol, biološko starost, športno panogo in raven tekmovanja. Za ugotavljanje različnih demografskih značilnosti udeležencev je bil uporabljen "obrazec za osebne podatke" za ugotavljanje ravni odpornosti pa "kratka lestvica odpornosti". Glede na ugotovitve študije obstaja pomembna razlika med psihološko odpornostjo in športno starostjo športnikov glede na spol in športno starost. Med psihološko odpornostjo in športno starostjo športnic glede na biološko starost, panogo in spol ni pomembne razlike. Glede na rezultate raziskave športna starost bolj vpliva na psihološko odpornost kot biološka starost. S podaljševanjem trajanja ukvarjanja s športom se pri moških razvija psihološka odpornost, kar pa ne velja za ženske. Poleg tega so moški bolj psihološko odporni kot ženske, tisti, ki se ukvarjajo z individualnimi športi, pa so psihološko bolj odporni kot tisti, ki se ukvarjajo z ekipnimi športi. Glede na rezultate raziskave lahko sklepamo, da se psihološka odpornost razvija s povečevanjem izkušenj pri ukvarjanju s športom.

Gljučne besede: študentje, odpornost, športniki, športne izkušnje, univerza

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INTRODUCTION

One of the critical determinants of success and performance in sports is psychological resilience. Athletes and coaches attribute their success to their psychological resilience. For example, Vince Lombardi, one of the best coaches of all time, stated that the essential thing for success is psychological resilience (Lombardi, 2012). According to Collins and Macnamara (2012), developing psychological resilience and adapting positively to stressful situations are necessary steps for athletes with performance expectations. In short, coaches, athletes, and sports psychologists see resilience as one of the most important keys to success. It is essential to win and achieve success in sports, and therefore, the characteristics and process of resilience must be well understood to increase resilience. Researchers are also making efforts in this direction. Indeed, the unique opportunities that sports often present to individuals in tackling difficulties and striving to achieve a goal make sports even more critical (McManama O'Brien et al., 2021).

In terms of sports sciences, it is possible to consider the effects of physical activity and sports on psychological resilience from two different perspectives. Because while the aim of physical activity is a healthy life, the objective of sports is to compete and win (Norkobilovich, 2021). Between these two perspectives, the first one attempts to demonstrate the effect of various physical activities on maintaining a good mood. In the study of Nicole and Erin (2015), conducted with 222 undergraduate students, it was stated that physical activity has a strong effect on reducing stress and trait anxiety and increasing psychological resilience. Roman-Mata et al. (2020) 's study on university students revealed that the relation between moderate-intensity physical activity and high endurance, especially for achieving health, is substantial. In the survey conducted by Özdemir and Akbaş Güneş (2021) with obese women, it was determined that regular exercise in the form of slow or moderate-paced walking for 60 minutes 3 days a week increased psychological resilience in obese women. From a sport-specific point of view, White and Bennie (2015) also stated that participation in gymnastics improves self-esteem, self-confidence, and endurance. The results of Bozdağ (2020) have shown that sports are one of the methods frequently used to increase psychological resilience and in dealing with adverse situations. Different researchers have also been interested in the relationship between resilience and sports performance (Fletcher & Sarkar, 2012; Yang et al., 2019). When the results obtained in the studies are examined, it is seen that there is a consensus on the existence of a positive relationship between optimal sports performance and psychological resilience.

We would like to mention a few more exciting pieces of information in the literature. University students experience some mental health problems at a high rate as they experience a developmental transition period. People aged 16-24 have the highest prevalence of mental health problems, proving this information (Slade et al., 2009). An evaluation made by the American College Health Association in the past years revealed that two out of three undergraduate students experience depression, and an average of one in ten students has thought of committing suicide in the previous years (American College Health Association, 2009; Zhang et al., 2018). In recent years, parallel to the increasing number of universities in Turkey, there has been an increase in university students. The latest statistics from the Turkish Higher Education Information Management System show that the number of university students will approach 9 million in 2022. In addition, at least one university in almost every province has caused students to move to different regions and receive education in different regions where they moved. Therefore, some problems introduced by separation from family, a new environment, classes, economy, and similar situations cause university students to experience stress (Karlukaç & Ulaş Kılıç, 2021). In this context, the scarcity of studies on the mental health status of Turkish university students in the literature draws attention. Moreover, it is surprising that very few studies focus on the mental health of university students studying sports sciences, such as examining their resilience and stress.

There are some limitations and inconsistencies in previous studies on resilience. For example, in the study of Solomon (2015), it was mentioned that the different aspects of sports experience should be addressed, and the effect on psychological resilience should be clarified with new research. In addition, it has been stated that the importance of sports experience on psychological resilience has become less critical. However, it is clear that consistent results have not been obtained to acquire a definite judgment, and that different studies should be conducted to support this view to establish a consensus. Zhang et al. (2018) stated that women had a higher prevalence of depression and, therefore, lower psychological resilience, but it was stated that the reason for this was still unclear.

There is no consensus in the literature on this issue. In order to obtain more precise results, it is clear that a new research should be conducted by making use of different societies, different levels, and different variables that may affect psychological resilience. Similarly, there are inconsistent research findings in the literature on the effects of gender, sports experience, and sport type on resilience (Khan et al., 2016; Kimhi et al., 2013; Kumar et al., 2016; Nicholls et al., 2016; Reddy and Berhanu, 2016). Likewise, previous studies emphasized a need for more

research on psychological resilience, examining the relationships between sport type, gender, sports experience, and level of competition (Bicalho et al., 2020; Codonhato et al., 2018; Garcia Secades et al., 2016). Considering these shortcomings and some limitations in the literature, the current research aims to examine the level of psychological resilience in student-athletes and competitive university students in terms of various variables. This study will analyze the effect of biological age and sports age on resilience separately. Nevertheless, it is thought that the results to be obtained will make an essential contribution to the literature. For this purpose, we formed the following hypotheses for the research:

H1a: There is a significant difference between genders regarding psychological resilience.

H1b: Sports age affects the level of resilience more than biological age.

H1c: The psychological resilience level of the athletes engaged in individual sports is significantly higher than those of the athletes engaged in team sports.

H1d: There is a significant difference between gender factor and sports age regarding psychological resilience.

METHODS

Research Model

The survey model, which is one of the quantitative research types, was chosen for the model of this research.

Participants

The population of the research consisted of students studying at the Faculty of Sports Sciences of Burdur Mehmet Akif Ersoy University, Turkey, in the 2021-2022 academic year, while the sample consisted of 274 students from the faculty of sports sciences, who were selected by random sampling method and participated in the research voluntarily. The random sampling method was chosen in the study because random sampling ensures that the results obtained from the sample are approximate to the results that would have been obtained if the entire population had been measured (Shadish et al., 2002). The simplest random sample ensures that all units in the population have an equal chance of being selected. This study was conducted under the Declaration of Helsinki. All participants were informed about the study processes, and an informed consent form was obtained from each participant.

Table 1. Various demographic characteristics of the participants.

Variable		f	%
Gender	Female	107	39.10
	Male	167	60.09
Age	Under 18	34	12.40
	Between 19-22	195	71.20
	Over 23	45	16.40
Sport Age	Under 5	56	20.40
	Between 6-10	166	60.60
	11 and over	52	19.00
Sport Type	Team	149	54.40
	Individual	125	45.60
Total		274	100%

Team Sports: basketball, football, handball, and volleyball. Individual sports: gymnastics, wrestling, squash, and tennis.

Data Collection Tools

The "*Personal Information Form*" created by the researchers to determine the various demographic characteristics of the participants (gender, age, sports age, and sport) and the "*Short Resilience Scale*" were used to determine the levels of resilience.

Short Resilience Scale

The scale developed by Smith et al. (2008) consists of 6 items and has one dimension. Doğan (2015) adapted the scale to Turkish. The answers to the scale are "Not at all appropriate" (1), "Not appropriate" (2), "Slightly Appropriate" (3), "Appropriate" (4), and "Completely Appropriate" (5), with a 5-point Likert type. As a result of the confirmatory factor analysis applied to the scale to determine the construct validity of the scale, it was determined that the model consisting of 6 items fit well (χ^2/sd (12.86/7) = 1.83, NFI = 0.99, NNFI = 0.99, CFI = 0.99, IFI = 0.99, RFI = 0.97, GFI = 0.99, AGFI = 0.96, RMSEA = 0.05, SRMR = 0.03). The internal consistency reliability coefficient was found to be 0.83 on the scale. Corrected item-total correlations ranged from 0.49 to 0.66 on the scale.

Data Analysis

The data obtained from the form and scale were analyzed using the Statistical Package for Social Sciences (SPSS) 17 package program. Frequency, percentage, average, and standard deviation values were used to analyze the data. Data distributions were analyzed using the Kolmogorov-Smirnov test and Shapiro Wilk-W test. Since the data did not meet the normal distribution assumption, the non-parametric Mann Whitney U test and Kruskal Wallis test were

used. When a significant difference was found, the Bonferroni test, one of the post-hoc tests, was used to determine the source of the difference, and the level of significance was determined as $p < 0.05$.

RESULTS

In this part of the study, the results obtained from the normality test of the scores obtained from the psychological resilience scale and the comparison of the scores obtained from the scale with gender, age, sports age, and branch variables are given in the tables.

Table 2. Normality tests of scores from the psychological resilience scale.

	Kolmogorov-Smirnov			Shapiro Wilk		
	Statistic	df	p	Statistic	df	p
Psychological Resilience	.061	274	.015*	.980	274	.001*

$p < 0,05$

When table 2 is examined, it is seen that the scores obtained from the psychological resilience scale do not meet the normal distribution assumption.

Table 3. Comparison of psychological resilience scores by gender.

Variable	Gender	N	Mean	SD	z	p
Psychological Resilience	Female	107	123.62	5.40	-2.326	.020*
	Male	167	146.40			

$p < 0.05$

According to table 3, there is a significant difference ($p < 0.05$) between genders regarding resilience. The significant difference is in favor of male students.

Table 4. Comparison of psychological resilience scores according to biological age and sports age.

Variable		N	Mean	Ss	x ²	df	p	Bonferroni
Biological Age	Under 18	34	149.97					
	Between 19-22	195	138.44	5.40	2.181	2	.336	
	Over 23	45	124.02					
Sport Age	Under 5 ¹	56	118.22					
	Between 6-10 ²	166	137.55	5.40	6.854	2	.032*	3>1
	11 and over ³	52	158.09					

p<0.05

According to table 4, there is no significant difference between age groups regarding psychological resilience ($p>0,05$). However, there are significant differences between sports age groups regarding psychological resilience ($p<0,05$). The significant difference is between those who are 11 and over and those under 5. Those who are 11 and over scored higher than those under 5.

Table 5. Comparison of psychological resilience scores by the sport type.

Variable	Sport Type	N	Mean	Ss	Z	P
Psychological Resilience	Team	149	136.26	5.40	-.283	.777
	Individual	125	138.98			

p<0.05. Note: Team Sports: basketball, football, handball, and volleyball. Individual sports: gymnastics, wrestling, squash, and tennis.

According to table 5, there is no significant difference ($p>0.05$) between sports types regarding resilience.

Table 6. Comparison of psychological resilience scores according to gender and sports age variables.

Gender	Sport Age	N	Mean	Ss	x ²	df	p	Bonferroni
Female	Under 5 ¹	23	47.37					
	Between 6-10 ²	63	56.10	4.99	1.371	2	.504	
	11 and over ³	21	54.95					
Male	Under 5 ¹	33	72.30					
	Between 6-10 ²	103	81.51	5.57	7.925	2	.019*	3>1
	11 and over ³	31	104.71					

p<0.05

When table 6 was examined, it was observed that there was no significant difference ($p < 0.05$) between the psychological resilience scores of women and the age of sports. However, there is a significant difference between the psychological resilience scores of men and the age of sports ($p < 0.05$). The significant difference favors those who have been doing sports for 11 years or more.

The most important findings of the research are: there is a significant difference between psychological resilience and the sports age of male athletes in terms of gender, sports age, and gender. There is no significant difference between psychological resilience and sports age of female athletes in terms of biological age, branch, and gender.

DISCUSSION

This study aimed to examine the psychological resilience levels of students in sports faculty in terms of different variables (gender, age, sports age, and sport type). The study's first hypothesis is, "There is a significant difference between genders in terms of psychological resilience." According to the finding of the test performed in line with (H1a) (Table 3), a significant difference was observed between the gender variable of the students regarding the level of psychological resilience in favor of males. This finding supports the hypothesis of the research. According to the findings, male students are more resistant to psychological distress. When the literature is examined, it is seen that there are different studies consistent with the findings of the current research.

For example, Mihajlovic et al. (2021) and Solomon's (2015) study revealed that women have lower resilience than men. On the other hand, some studies have stated that women have higher psychological resilience than men (Çutuk et al., 2017; Saka and Ceylan, 2018). Gender roles may influence the emergence of these inconsistencies. According to Kimura (2002), gender roles are important in male and female behaviors. While women show more emotional behaviors and reactions in most difficult situations (Zakowski et al., 2003), men tend not to give up and appear stronger (Bektaş & Özben, 2016). In addition, some findings in the literature indicate that cultural understandings in different societies may impact resilience. Therefore, the most important result of the finding in the present study is that the psychological resilience level of male university students receiving sports training at a Turkish university is significantly higher than female students. The comprehensive result obtained from this finding is that male

university students who are athletes will be able to overcome mental health problems more efficiently than females.

The second hypothesis of the study is, "Sports age affects the level of resilience more than biological age." According to the finding of the test performed in line with (H1b) (Table 4), biological age did not make a significant difference in psychological resilience. However, a significant difference was observed between sports age and psychological resilience. This finding supports the hypothesis of the research. Accordingly, as the students' sports ages increase, so does the level of psychological resilience. When the literature is examined, it is seen that there are different studies consistent with the findings of the current research. For example, the study findings conducted by Şar et al. (2018) revealed that as sports age increases, psychological resilience also increases. In addition, in the study conducted by Tural and Efe (2020), it was concluded that with the increase in exercise frequency, psychological resilience also increases. However, the findings obtained in the studies of Grgurinovic and Sindik (2015) and Solomon (2015) revealed that there is no significant difference between sports experience and psychological resilience. In Grgurinovic and Sindik's (2015) study, the participants cover a broad spectrum from the top national level athletes to those participating in recreational activities in Croatia. The United States (USA) National College Athletic Association (NCAA) League athletes participated in Solomon's (2015) study. The two studies mentioned in our study revealed inconsistent findings. The reason for this inconsistency may be the level of the athletes included in the studies (amateur, professional, national athlete, etc.) In addition, the expectations of the athletes (health, award, competition, etc.) must be noted as well. These differences regarding the target population of the study may have led to these inconsistent results. Furthermore, the data collection tool developed by Smith et al. (2008) was used in our study. In other two studies, an older data collection tool, the scale developed by Clough et al (2002) was used. First, it is expected that professional athletes and athletes who do sports for recreational or health purposes will show physical and psychological differences (Baser, 1998). The purpose of those who do sports only to compete and win is different from those who want to gain health and have fun. Therefore, the stress they experience, the fear of injury, and tension will also be different for these athletes. As a matter of fact, in cases where the psychological characteristics of the athletes are compared, we think that it would be appropriate to choose the athletes who are at the same level. The most important result of the finding we obtained in the current study is that the increase in the biological age of university students who receive sports education and do sports at the same level does not increase their psychological resilience.

However, the increase in the number of years of doing sports and thus gaining experience in sports provides more psychological endurance. The broadest conclusion from this finding is that sport plays a crucial role in increasing resilience, and it is necessary not to wait for resilience by getting old.

The third hypothesis of the study is, "The psychological resilience level of the athletes engaged in individual sports is significantly higher than the psychological resilience level of the athletes engaged in team sports." According to the finding of the test performed in line with (H1c) (Table 5), no significant difference was observed between the type of sports branch and the level of resilience. This finding does not support the hypothesis of the research. However, the psychological resilience level of those engaged in individual sports is higher. When the literature is examined, it is seen that there are different studies consistent with the findings of the current research. For example, the findings of the research conducted by Bingöl and Bayansalduz (2016) revealed no significant difference between those who engage in individual sports and those who engage in team sports in terms of psychological resilience. However, the psychological resilience level of those engaged in individual sports is higher. The research findings conducted by Karademir and Açak (2019) also revealed that the psychological resilience level of those engaged in individual sports is higher than those engaged in team sports. If the findings from the current study and previous research are evaluated, those who are engaged in individual sports often have to fight alone for a determined goal. This causes them to have to struggle alone with difficulties. Those involved in team sports often do not take responsibility alone, and challenging situations can cause them to be psychologically weaker. Not similar to the results of the current study and previous studies, Hossein et al. (2016), on the other hand, revealed that the anxiety level of athletes who do individual sports is higher than those who do team sports. It has been stated that being a part of a team alone relieves the pressure of competition. However, it is worth noting that data collection takes place 30 minutes before the competition. Therefore, this situation is more likely to be related to state anxiety than trait anxiety. The most important result of the finding we obtained in the current study may be that the athletes engaged in individual sports are fighting against obstacles alone, which may have enabled them to have more potent psychology. The most comprehensive result from the finding is that those who struggle alone can overcome both success and failure more quickly.

The fourth hypothesis of the study is, "There is a significant difference between the age of sports and the gender factor in terms of psychological resilience." According to the finding of the test performed in line with (H1d) (Table 6), a significant difference was observed between sports

age and gender factors in terms of psychological resilience. This finding supports the hypothesis of the research. The findings reveal that men become more psychologically resilient with the increase in sports age than women. When the literature is examined, it is seen that there are different studies consistent with the findings of the current research. For example, in the study of Desai (2017), it was stated that the psychological resilience levels of men are significantly higher than that of women. In the study of Dalkiran and Varol (2015), sports age or sports experience has a significant effect on the mental health level of secondary school students. Sar et al. (2018) also revealed that psychological resilience increases as sports age increases. However, other studies are not consistent with our findings. For example, in Grgurinović and Sindik (2015), Solomon (2015), and most of the known previous studies, the relationship between sports age and resilience level was examined by including all men and women in the research. The results were interpreted as no relationship between sports age and psychological resilience. There is an important feature that distinguishes current research findings from the findings of previous studies. Our finding reveals the findings of previous studies more clearly because the effect of sports ages of women and men on psychological resilience levels has been examined separately and more clearly. The findings have already revealed that men become more psychologically resilient with the increase in the amount of time they do sports. However, the increase in females' duration of doing sports does not make females more psychologically resilient. This finding is necessary for the literature. Instead of the statement "There is a significant difference between sports age and psychological resilience, the level of psychological resilience increases as men's sports age increases, but the same is not true for women." statement explains the situation more clearly. According to Turner (2000), men are more psychologically resilient than women as they do sports: Females are generally more psychologically resilient than males in the first ten years of life. However, they begin to be vulnerable in the second decade of life. Because the cultural pressure on girls to be dependant at the age of 11-12 limits girls' ability to be autonomous. In addition, some negative thoughts such as returning to the family after finishing university education, marriage-children, and the thought of not being able to continue working and sports can create more stress on women. The most important result of the finding we obtained in the current study is that as the duration of doing sports increases in men, psychological resilience develops, but the same is not valid for women. The most comprehensive result obtained from the finding is that men may be psychologically stronger than women by continuing to do sports, but women should also be provided with more autonomy in their sports lives.

Limitations and Recommendations

Participants who were found to give incorrect answers to the scales for being biased or for different purposes were excluded from the study before statistical analysis was run and were not included in the analysis. It was assumed that all the remaining participants gave unbiased answers to the scales. The demographic characteristics of the participants selected for the sample in the current study, the environment they live in, the type of exercise, duration and intensity may be the limitations of this study. We can make the following recommendations to researchers and practitioners: Perhaps different exercise intensities may lead to different results on resilience. Future studies may consider exercise intensity. In addition, comparisons can be made between societies in which gender roles are different. These comparisons will help to illuminate the inconsistent results in the literature. Finally, future studies that will examine the relationship between the participants' personal, cultural, and sporting characteristics and their level of resilience can be shaped by considering such situations.

CONCLUSION

According to the research results, sports age is more effective than biological age on psychological resilience. This result is also supported by different studies in the literature (Dalkiran and Varol, 2015; Desai, 2017). As the duration of doing sports increases in men, psychological resilience develops, but the same is not valid for women. In addition, male students are more psychologically resilient than female students, and those who do individual sports are more psychologically resilient than those who do team sports (Bingöl and Bayansalduz, 2016; Karademir and Acak, 2019). These findings show us that male university students who are athletes can overcome mental health problems more easily than women. In addition, sports play a key role in increasing psychological endurance, and it is dysfunctional to wait for endurance with aging. Those who struggle individually can overcome failure more easily. In general, men can be psychologically stronger compared to women by continuing to play sports. On the other hand, women should be ensured to be more autonomous in their sports lives. Finally, these results reveal that sport is a protective factor on psychological endurance. Depending on the results obtained, the following is suggested by the researchers: More variables and samples can be used when examining the relationship between female athletes' psychological endurance and sports experience.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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