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Research Article / Araştırma Makalesi

Evaluation of handball players' anxiety and depression levels and anxiety about catching the novel coronavirus during the COVID-19 pandemic

Hentbol oyuncularının COVID-19 pandemisi sırasında yeni koronavirüse yakalanma kaygısı ve depresyon düzeylerinin değerlendirilmesi

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ABSTRACT

Objective: This study aims to determine the anxiety, depression and anxiety levels with regard to contracting COVID-19 of professional handball players during the COVID-19 pandemic and to evaluate the associated factors.

Material and Methods: A total of 119 handball players aged between 18 and 40 years participated in the study. Research data were collected when the professional leagues were completed, and the Turkish Ministry of Health began to relax restrictions within the country. The socio-demographic characteristics of handball players, training information, factors associated with COVID-19, the Hospital Anxiety and Depression Scale, and the Athletes' Anxiety Scale for Catching Novel Coronavirus were used to collect the data.

Results: The anxiety levels of male handball players were found to be higher than female handball players (p<0.010). The depression (p=0.016) and COVID-19 anxiety (p=0.015) levels were higher in handball players with weekly training hours of ten hours or less.

Conclusion: Maintaining at least ten hours of training per week, even under adverse conditions, such as a pandemic and isolation, may have a positive psychological effect on athletes. Providing psychological support to athletes during certain periods may contribute to the prevention of anxiety and depression in athletes.

Keywords: *COVID-19, anxiety, depression, handball*

ÖZ

Amaç: Bu çalışma, COVID-19 pandemisinde profesyonel hentbol oyuncularının anksiyete, depresyon ve COVID-19'a yakalanma kaygı düzeylerini belirlemek ve ilişkili faktörleri değerlendirmek amacıyla planlandı.

Gereç ve Yöntem: Çalışmaya yaşları 18 ile 40 arasında değişen 119 hentbolcu katıldı. Veriler profesyonel ligler tamamlandığında ve ülkede kontrollü serbestlik uygulanırken toplandı. Verilerin toplanmasında hentbolcuların sosyodemografik özellikleri, antrenman bilgileri, COVID-19'a ilişkin faktörler, Hastane Anksiyete ve Depresyon Ölçeği ve Sporcuların Yeni Tip Koronavirüse Yakalanma Kaygısı Ölçeği kullanıldı.

Bulgular: Çalışmada erkek hentbolcuların anksiyete düzeyleri kadın hentbolculara göre daha yüksek saptandı (p<0.010). Haftalık antrenman saati 10 saat ve altında olan hentbolcularda depresyon (p=0.016) ve COVID-19'a yakalanma kaygı (p=0.015) düzeyi daha yüksek bulundu.

Sonuç: Pandemi ve izolasyon gibi olumsuz şartlarda dahi, antrenmanlara haftada en az 10 saat üzeri devam edilmesinin, sporcularda pozitif yönde psikolojik etki oluşturabileceği kanaatine varıldı. Sporculara psikolojik yönden düzenli aralıklarla profesyonel destek verilmesinin, sporcularda anksiyete ve depresyonun önlenmesinde katkı sağlayacağı düşünülmektedir.

Anahtar Sözcükler: *COVID-19, anksiyete, depresyon, hentbol*

INTRODUCTION

The coronavirus disease 2019 (COVID-19) epidemic allegedly emerged in Wuhan, China, and spread around the world, becoming a global health threat between December 2019 and early 2020 (1,2). A lack of definitive answers to questions, such as 'When will the pandemic end?' and 'What are the best treatment methods?', exposure to a constant flow of information, and impositions, such as being required to stay at home or the implementation of fines, all negatively affected the mental health of individuals. Traumatic events can decrease people's sense of safety, remind them of the reality of death, and have negative effects on their mental health (3). Therefore, certain symptoms, such as anxiety, depression, fear, stress, and sleep problems

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demic (4). A certain level of anxiety is a state of health, according to Kennedy (5), however extreme anxiety indicates an unhealthy status. While constant anxiety feeds on personality traits, situational anxiety is the expectation of negative consequences that a person feels in a situation (6).

Major life-impacting events in athletes, including sports injury and chronic stress, have been reported to be associated with high rates of anxiety and depression (7). In addition, elite athletes are more exposed to stress factors that can cause anxiety and depression disorders, compared with the general population (8). Social distancing measures due to the COVID-19 epidemic, the postponement of competitions and major tournaments, a decrease in sporting incomes, and increases in sports injuries are possible situations that may adversely affect competitive athletes, both physically and psychologically. A negative relationship is reported between anxiety and performance, success, cognitive performance, motivation, and self-regulation (9). In addition to this, an increase in anxiety reduces the strength of faith and struggle (10,11). In this respect, it could be expected that there is a negative relationship between performance and anxiety caused by COVID-19 in athletes. It is important to determine the level of anxiety of athletes fearing the contraction of COVID-19 (12-14).

The virus is easier to be transmitted indoors (1,2), and handball is a high-intensity sport played in indoor sports halls, where players often touch each other during defense and offense play. Although handball competitions were played without spectators during the pandemic, a game takes place with two teams of about twenty people interacting with an average of around fifty people, including the competition officials. Professional handball players are likely to be at greater risk from physical and psychological perspectives in a long league marathon.

This study plans to evaluate the anxiety and depression levels, and the anxiety with regard to contracting COVID-19 in professional handball players during the COVID-19 pandemic period. The tested hypotheses of the present study were as follows: a) there is direct relationship between professional handball players' anxiety, depression levels and the anxiety of contracting COVID-19; and b) there is direct relationship between indoor sporting activity duration and athletes' anxiety and depression levels.

MATERIAL and METHODS

Study Design and Participation

A cross-sectional study was conducted with handball players, aged 18-40, playing in the 2020-2021 handball league. Clinical research ethics committee approval was first obtained from the Eskişehir Osmangazi University Ethics Committee; Date/Number: 15 June 2021/16.

The population of the study consisted of athletes playing in the 2020-2021 Turkey Men's and Women's, Super- and 1st Handball Leagues. Participants' data were collected by an online survey, using Google Forms (Google Forms, Google Drive Office Suite, 2008, California, USA) software in June 2021. At the time of data collection, Turkey was in a period of partial restrictions. Competitions started in September 2020, and the season continued without a break. If four or more players were infected with COVID-19, or suspected to be infected, the matches of the team were postponed until the end of the quarantine period.

Sample size was calculated by applying power=0.90, α=0.10 and d=0.5 in G Power package program (version 3.1.9.7, Düsseldorf, Germany), and it was found that at least 106 people should participate in the study (15). A total of 119 athletes participated in the research. The criteria for inclusion in the study were to be between the ages of 18-40, and to have trained regularly with the team or individually. Athletes who did not regularly participate in team or individual training for any reason, other than being injured, were not included in the study.

The Participants' Information and Scales Used

An online survey was created by scanning the literature, consisting of three parts (3,10,16,17). In the first part, questions regarding the socio-demographic characteristics (gender, age, education level, marital status, duration and place of training, sports injury in the last six months, social isolation status, living with someone over sixty, monthly economic loss in this process, injury risk perceptions due to a lack of training), and factors associated with COVID-19 were included. In the second part, the Hospital Anxiety and Depression Scale (HADS) and, in the third part, the Athletes' Anxiety of Catching New Type Coronavirus (COVID-19) Scale (AACNCS) were used (3,10,18,19,20).

Turkish validity and reliability analyses of the HADS were performed by Aydemir et al. (21) and Tetik-Küçükelçi (17); the reliability of the scale and its suitability for samples without physical problems were confirmed. The scale consists of fourteen items, seven of which measure anxiety and seven questions measure depression symptoms. The items in the scale are answered on a 4-point Likert scale and are based on a scoring system between 0-3. Higher scores indicate an increase in symptoms. A total of twenty-one points can be obtained separately from the anxiety and depression sections. The cut-off values of the scale are 7 and 10 points for depression and anxiety, respectively (21). The purpose of the scale is not to diagnose, but to measure the psychologi–

cal state of the patients and to take the necessary precautions (20,22).

To measure the anxiety of athletes with regard to contracting COVID-19, AACNCS was developed by Tekkurşun Demir et al (10). The lowest score that can be obtained from the 11-item Individual Anxiety Factor, which represents the emergence of feelings of anxiety and uneasiness in the encounter with a feared event is 11, and the highest score is 55. The lowest score that can be taken from the Socialization Anxiety Factor, which consists of five items representing the state of being anxious with regard to socializing and avoiding the socialization environment in the presence of a feared situation, is 5, and the highest score is 25. No cut-off value is defined for AACNCS, the higher the state of anxiety, the greater the psychological impairment. The scale, consisting of sixteen items, is a five-point Likert type. Only the second item in the scale contains a reverse statement.

Statistical Analysis

The IBM SPSS 15 (SPSS Inc, Chicago, IL, USA) software was used in the analysis of the data. The normal distribution of data was evaluated with Kolmogorow-Smirnov analysis. A Chi-square analysis was used to interpret the data with cut-off values. Mann-Whitney U and Kruskal-Wallis analyses were used to evaluate continuous data. A Spearman correlation analysis was used to examine the relationship between the parameters. A G-Power (version 3.1. Düsseldorf, Germany) was utilized for power analysis. P<0.05 was accepted as a significant value.

Table 1. Health and anxiety-depression scores according to socio-demographic features and training

Variables	N[a]	HADS-Anxiety		p	HADS-Depression		p
		No[b]	Yes[b]		No[b]	Yes[b]	
Gender							
Female	51 (42.9)	42 (82.4)	09 (17.6)	**0.010***	35 (68.6)	16 (31.4)	0.349
Male	68 (57.1)	41 (60.3)	27 (39.7)		41 (60.3)	27 (39.7)	
Age groups							
18-25	70 (58.8)	49 (70.0)	21 (30.0)	0.943	44 (62.9)	26 (37.1)	0.784
26-40	49 (41.2)	34 (69.4)	15 (30.6)		32 (65.3)	17 (34.7)	
Education							
High school	26 (21.8)	17 (65.4)	09 (34.6)	0.584	17 (65.4)	09 (34.6)	0.855
University	93 (78.2)	66 (71.0)	27 (29.0)		59 (63.4)	34 (36.6)	
Marital status							
Single	100 (84.0)	67 (67.0)	33 (33.0)	0.134	63 (63.0)	37 (37.0)	0.652
Married	19 (16.0)	16 (84.2)	03 (15.8)		13 (68.4)	06 (31.6)	
Having child							
Yes	12 (10.1)	08 (66.7)	04 (33.3)	0.806	06 (50.0)	06 (50.0)	0.292
No	107 (89.1)	75 (70.1)	32 (29.9)		70 (65.4)	37 (34.6)	
Weekly training hours							
≤10 hours	44 (37.0)	27 (61.4)	17 (38.6)	0.127	22 (50.0)	22 (50.0)	**0.016***
≥11 hours	75 (63.0)	56 (74.7)	19 (25.3)		54 (72.0)	21 (28.0)	
Sports injuries in last six months							
Yes	32 (26.9)	19 (59.4)	13 (40.6)	0.135	18 (56.2)	14 (43.8)	0.294
No	87 (73.1)	64 (73.6)	23 (26.4)		58 (66.7)	29 (33.3)	
Living with someone over sixty							
Yes	18 (15.1)	14 (77.8)	04 (22.2)	0.421	10 (55.6)	08 (44.4)	0.426
No	101 (84.9)	69 (68.3)	32 (31.7)		66 (65.3)	35 (34.7)	
Income loss							
No loss	41 (34.5)	29 (70.7)	12 (29.3)		21 (51.2)	20 (48.8)	
0-50% loss	58 (48.7)	40 (69.0)	18 (31.0)	0.982	39 (67.2)	19 (32.8)	0.068
51-100% loss	20 (16.8)	14 (70.0)	06 (30.0)		16 (80.0)	04 (20.0)	
Injury risk perception due to lack of training							
<50%	56 (47.1)	41 (73.2)	15 (26.8)	0.438	34 (60.7)	22 (39.3)	0.500
≥50%	63 (52.9)	42 (66.7)	21 (33.3)		42 (66.7)	21 (33.3)	
COVID 19 transmission status							
Yes	28 (23.5)	21 (75.0)	07 (25.0)	0.489	22 (78.6)	06 (21.4)	0.064
No	91 (76.5)	62 (68.1)	29 (31.9)		54 (59.3)	37 (40.7)	
HADS-depression status							
No	76 (63.9)	58 (76.3)	18 (23.7)	**0.038***			
Yes	43 (36.1)	25 (58.1)	18 (41.9)				
TOTAL	119 (100.0)	83 (69.7)	36 (30.3)		76 (63.9)	43 (36.1)	

Figures as n(%), *: p<0.05

RESULTS

A total of 119 handball players, 68 males and 51 females, participated in the study. The mean age of the athletes was 24.5 ± 6.0 (range:18-40). The relationship between socio-demographic features of handball players, COVID-19 related factors, and anxiety-depression scores (Table 1) were evaluated; male players had higher anxiety scores than the female players (p<0.05). Those participants with a weekly training time of ≤10 hours had significantly higher depression scores than players training ≥11 hours a week (p<0.05). It was observed that handball players who had higher HADS-

Anxiety scores also had higher HADS-Depression scores (p<0.05).

Anxiety with regard to catching COVID-19 and its relationship with the socio-demographic features of handball players were examined (Table 2). Players with a weekly training time of <10 hours had significantly higher anxiety of catching COVID-19 than players who trained ≥ 11 hours a week (p<0.05).

Table 2. Relationship of socio-demographic features and anxiety of catching novel coronavirus

Variables	N	AACNCS Score Median (min- max)	p
Gender			
Female	51 (42.9)	51.0 (21.0-73.0)	0.067
Male	68 (57.1)	56.0 (34.0- 4.0)	
Age groups			
18-25	70 (58.8)	53.0 (23.0-74.0)	0.407
26-40	49 (41.2)	56.0 (21.0-73.0)	
Education			
High school	26 (21.8)	53.0 (38.0-74.0)	0.731
University	93 (78,2)	54.0 (21.0-73.0)	
Marital status			
Single	100 (84.0)	53.5 (23.0-74.0)	0.899
Married	19 (16.0)	55.0 (21.0-73.0)	
Having child			
Yes	12 (10.1)	50.5 (21.0-73.0)	0.440
No	107 (89.1)	54.0 (23.0-74.0)	
Weekly training hours			
≤10 hours	44 (37.0)	58.5 (23.0-74.0)	**0.015***
≥11 hours	75 (63.0)	53.0 (21.0-73.0)	
Sports injuries in last six months			
Yes	32 (26.9)	53.0 (23.0-72.0)	0.170
No	87 (73.1)	56.0 (21.0-74.0)	
Living with someone over sixty			
Yes	18 (15.1)	57.0 (38.0-73.0)	0.724
No	101 (84.9)	53.0 (21.0-74.0)	
Income loss			
No loss	41 (34.5)	53.0 (21.0-74.0)	0.516
0-50% loss	58 (48.7)	55.0 (29.0-73.0)	
51-100% loss	20 (16.8)	53.5 (23.0-70.0)	
Injury risk perception due to lack of training			
<50%	56 (47.1)	53.0 (23.0-70.0)	0.215
≥50%	63 (52.9)	55.0 (21.0-74.0)	
COVID-19 transmission status			
Yes	28 (23.5)	56.0 (21.0-69.0)	0.861
No	91 (76.5)	53.0 (23.0-74.0)	
TOTAL	119 (100.0)	54.0 (21.0-74.0)	

Figures as n(%), *: p<0.05

A positive correlation (r= 0.309, p= 0.001) was present between HADS and AACNCS (Figure 1).

DISCUSSION

This study aims to determine the anxiety and depression levels of professional handball players with regard to contracting the novel coronavirus, and to evaluate the associated factors in the COVID-19 pandemic. As a result, male athletes were seen to have higher anxiety scores than females, and athletes with a weekly training time of ≤10 hours had higher depression and Novel Coronavirus Anxiety scores.

The COVID-19 pandemic has caused several alterations in the daily routines and training regimes of athletes. As a result of this, different levels of psychological effects have occurred in athletes (23). Studies revealed that the pandemic and social isolation period had negative effects on anxiety and depression levels of athletes (24,25,26). During the pandemic, considering the psychology of athletes in terms of their gender, there are different results in the literature in relation to anxiety and depression levels. In addition to studies reporting similar anxiety levels in male and female athletes (24,27,28), several studies displayed higher anxiety scores either in female athletes (25,26) or the males (23). In Håkansson's study; handball, soccer and ice hockey players' psychological states were evaluated, and female athletes were found to have higher levels of depression (26), while in another study evaluating only handball players, male athletes were found to have higher depression scores (23).

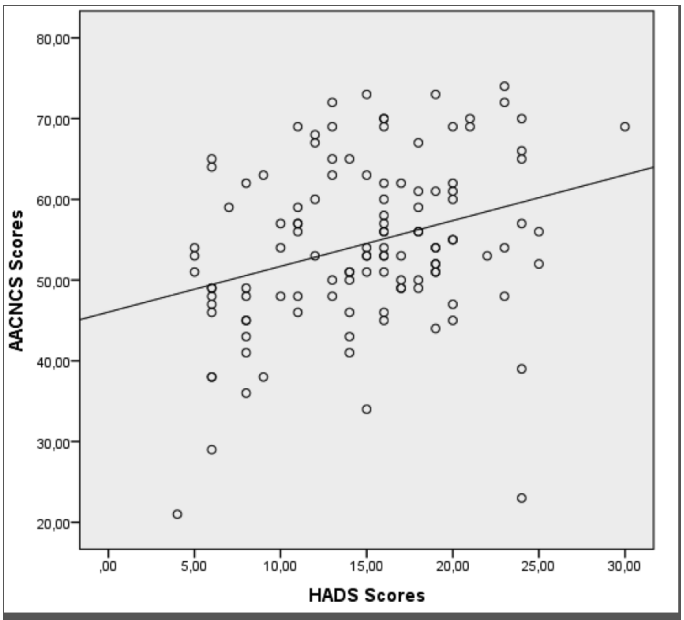

Figure 1. Distribution graph giving the relationship between the hospital anxiety-depression scale and the anxiety scale for catching novel coronavirus

According to a study by Mon-Lopez et al. (23), male handball players had higher depression and anxiety scores than females. Our study reached similar anxiety results with Mon-Lopez et al., but with no significant difference in depression scores. The underlying reason for the differences in anxiety and depression scores among the studies may be their being conducted at different periods of the prolonged pandemic, and various assessment questionnaires being used in diverse groups of athletes.

It is well known that even a single training session has positive psychological effects on athletes during their return to sport after injury or in off-season periods (29). During the COVID-19 pandemic, it has been reported that regular exercise protects mental health and alleviates depression and anxiety levels (30). According to the results of a systematic review by Wolf et al., it was reported that regular moderate to vigorous levels of physical activity, and the maintenance of exercise routines led to fewer symptoms of depression and anxiety (31). A decreased physical activity time during the pandemic period is linked to increased depression and other chronic health problems (32). Other studies, conducted before the pandemic period, revealed that decreases in physical activity levels led to an increase in the prevalence of depressive disorders (12,14).

In another study, it was observed that there was no difference between the anxiety levels of those who trained and those who did not train (24). In our research, the relationship between weekly training time and anxiety and depression levels of handball players was also evaluated. Anxiety level was not found to be related to weekly training time, but depression scores and anxiety with regard to contracting COVID-19 were found to be higher in handball players who trained ten hours or less per week. Participants may associate training time with their performance, and think that they might fail as a result of insufficient training time, and so become depressed. On the other hand, decreased hours of training during the pandemic period may prevent athletes from socializing. This could increase handball players' anxiety with regard to contracting COVID-19.

It has been reported that athletes involved in team sports have higher anxiety levels than athletes involved in individual sports during the pandemic period (28). In a study by Orru et al., anxiety and depression scores and concerns regarding the COVID-19 pandemic were evaluated together and reported to be associated with similar factors (33). In this study, in parallel with an increase in anxiety and depression scores of handball players, the anxiety of catching COVID-19 also increased. Handball is a team sport that requires contact, and social distancing rules are difficult to follow. As a consequence, handball players may have increased anxiety, depression and concern regarding COVID-19. The results confirm the hypotheses of the study.

The limitations of this study are that the athletes' COVID-19 vaccination status and any loss among their beloved ones were not included in the evaluation, and the participants' history of psychological illness could have been questioned before the start of the study. In addition, this study could have been repeated at different periods of the pandemic, so that any change in anxiety, depression, and anxiety with regard to contracting COVID-19 could be evaluated.

CONCLUSION

Male handball players had higher anxiety levels. Training ten hours or less per week was found to increase depression levels and anxiety with regard to catching COVID-19 in handball players. It is suggested that athletes continuing to train for more than 10 hours per week, at times when their routines change dramatically, may display positive psychological effects. Periodic assessment of handball athletes' mental health is critically important in terms of providing early intervention regarding possible problems.

Ethics Committee Approval / Etik Komite Onayı

The study was approved by the Ethics Committee of Eskisehir Osmangazi University (Date: 15.06.2021, Decision no: 16).

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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Author Contributions / Yazar Katkıları

Concept:TK,EA,OA; Design: TK,EA,OA; Supervision: EA,OA; Materials: TK,EA; Data Collection and/or Processing: TK,EA,OA; Analysis and Interpretation: EA,OA; Literature Review: TK,EA; Writing Manuscript: TK; Critical Reviews: EA,OA.

REFERENCES

1. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *Gen Psychiatr.* 2020;33(2):e100213.
2. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. *Lancet.*2020;395(10223):470-3.
3. Özdin S, Bayrak Özdin Ş. Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: the importance of gender. *Int J Soc Psychiatry.* 2020;66(5): 504-11.
4. Torales J, O'Higgins M, Castaldelli Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. *Int J Soc Psychiatry.* 2020;66(4):317-20.
5. Hina P, Hina S. *Anxiety Disorders.* 1st ed. Farmington Hills, MI: Greenhaven Press; 2010.
6. Kapıkıran Ş. Üniversite öğrencilerinin sınav kaygısının bazı psiko-sosyal değişkenlerle ilişkisi üzerine bir inceleme. *PUEFD.*2002;11(11):34-43.
7. Gouttebarge V, Frings-Dresen MH, Sluiter JK. Mental and psychosocial health among current and former professional footballers. *Occup Med (Lond).* 2015;65(3):190-6.
8. Rice SM, Purcell R, De Silva S, Mawren D, McGorry PD, Parker AG. The mental health of elite athletes: a narrative systematic review. *Sports Med.* 2016;46(9):1333-53.
9. Johnston-Wilder S, Lee C. Mathematical resilience. *Mathematics Teaching.* 2010;n218:38-41.
10. Tekkurşun Demir G, Cicioğlu Hİ, İlhan EL. Sporcuların yeni tip koronavirüse (COVID-19) yakalanma kaygısı ölçeği (SYTKYKÖ): geçerlik ve güvenirlik çalışması. *J Hum Sci.* 2020;17(2):458-68.
11. Pekrun R, Goetz T, Perry RP, Kramer K, Hochstadt M, Molfenter S. Beyond test anxiety: development and validation of the test emotions questionnaire (TEQ). *Anxiety Stress Coping.* 2004;17(3):287-316.
12. Reardon CL, Hainline B, Aron CM, Baron D, Baum AL, Bindra A, et al. Mental health in elite athletes: International Olympic Committee consensus statement (2019). *Br J Sports Med.* 2019;53(11):667-99.
13. Platt BN, Uhl TL, Sciascia AD, Zacharias AJ, Lemaster NG, Stone AV. Injury rates in major league baseball during the 2020 COVID-19 season. *Orthop J Sports Med.* 2021;9(3):2325967121999646.
14. Reardon CL, Bindra A, Blauwet C, Budgett R, Campriani N, Currie A, et al. Mental health management of elite athletes during COVID-19: a narrative review and recommendations. *Br J Sports Med.* 2021;55(11):608-615.
15. Erdfelder E, Faul F, Buchner A. GPOWER: A general power analysis program. *Behav Res Methods Instrum Comp*. 1996,28:1-11.
16. Biçer İ, Çakmak C, Demir H, Kurt ME. Coronavirus anxiety scale short form: Turkish validity and reliability study. *Anat Clin.*2020;25 (Supplement 1):216-25.
17. Tetik Küçükelçi D. Hastane anksiyete ve depresyon ölçeği (HADS) üzerine bir çalışma. *Yaşam Becerileri Psikol Derg.* 2019;3(5):85-91.
18. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res.* 2020;287:112934.
19. Weber S, Puta C, Lesinski M, Gabriel B, Steidten T, Bär KJ, et al. Symptoms of anxiety and depression in young athletes using the hospital anxiety and depression scale. *Front Physiol.* 2018;9:182.
20. Zigmond A, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand.* 1983; 67(6):361-70.
21. Aydemir Ö, Güvenir T, Küey L, Kültür S. Hastane anksiyete ve depresyon ölçeği Türkçe formunun geçerlilik ve güvenilirlik çalışması. *Turk Psikiyatri Derg.* 1997;8(4):280-7.
22. White D, Leach C, Sims R, Atkinson M, Cottrell D. Validation of the hospital anxiety and depression scale for use with adolescents. *Br J Psychiatry.* 1999;175(5):452-54.
23. Mon-López D, de la Rubia Riaza A, Hontoria Galán M, Refoyo Roman I. The impact of COVID-19 and the effect of psychological factors on training conditions of handball players. *Int J Environ Res Public Health*. 2020;17(18):6471.
24. Ozen G, Koc H, Aksoy C. Health anxiety status of elite athletes in COVID-19 social isolation period. *Bratisl Lek Listy*. 2020;121(12):888-93.
25. Kara ÖS, Büyüklüoğlu G, Büyüklüoğlu N, Gül S, Çelebi MM, Kaya H. Professional athletes have higher anxiety levels during COVID-19 outbreak compared to recreational athletes and sedentary people. *Turk J Sports Med*. 2021;56(2):73-80.
26. Håkansson A, Moesch K, Jönsson C, Kenttä G. Potentially prolonged psychological distress from postponed Olympic and Paralympic games during COVID-19-career uncertainty in elite athletes. *Int J Environ Res Public Health.* 2020;18(1):2.
27. Sant'Anna Esteves N, Andrade de Brito M, Teixeria Müller V, Brito CJ, Valenzuela Pérez DI, Slimani M, et al. COVID-19 Pandemic impacts on the mental health of professional soccer: comparison of anxiety between genders. *Front Psychol*. 2021;12:765914.
28. Ağduman F. Sporcuların pandemi döneminde COVID-19'a yakalanma kaygı düzeylerinin incelenmesi. *Germenica BESBD.*2021;2(1):1-14.
29. Gabbett TJ, Whyte DG, Hartwig TB, Wescombe H, Naughton GA. The relationship between workloads, physical performance, injury and illness in adolescent male football players. *Sports Med.* 2014;44(7):989-1003.
30. Hu S, Tucker L, Wu C, Yang L. Beneficial effects of exercise on depression and anxiety during the COVID-19 pandemic: a narrative review. *Front Psychiatry*. 2020;11:587557.
31. Wolf S, Seiffer B, Zeibig JM, Welkerling J, Brokmeier L, Atrott B, et al. Is physical activity associated with less depression and anxiety during the COVID-19 pandemic? A rapid systematic review. *Sports Med*. 2021;51(8):1771-83.
32. Schuch FB, Bulzing RA, Meyer J, Vancampfort D, Firth J, Stubbs B, et al. Associations of moderate to vigorous physical activity and sedentary behavior with depressive and anxiety symptoms in self-isolating people during the COVID-19 pandemic: a cross-sectional survey in Brazil. *Psychiatry Res.* 2020;292:113339.
33. Orrù G, Bertelloni D, Diolaiuti F, Conversano C, Ciacchini R, Gemignani A. A psychometric examination of the coronavirus anxiety scale and the fear of coronavirus disease 2019 scale in the Italian population. *Front Psychol*. 2021;12:669384.