

An investigation of fear of COVID-19 status in university student athletes from different sports associated with contact

Celil Kaçoğlu^{1ABDE}, Halil O. Çobanoğlu^{2ACDE}, Emre Şahin^{1ABE}

¹Eskişehir Technical University, Turkey

²Alanya Alaaddin Keykubat University, Turkey

Authors' Contribution: A – Study design; B – Data collection; C – Statistical analysis; D – Manuscript Preparation; E – Funds Collection

Abstract

Background and Study Aim The aim of this research is to (i) examine the COVID-19 fear scales according to the contact rate of the sports branch of the athletes and (ii) examine the COVID-19 fear scales according to some demographic variables of the athletes.

Material and Methods Sport Sciences Faculty students athletes (n=176) in sports with different levels of contact voluntarily participated in the current study. The fear of COVID-19 scale consisting of a total of 7 items and demographic information form and a single sub-dimension were applied online via Google® forms to individuals who participated in the study voluntarily. The data obtained from the study were analyzed using IBM SPSS 25.0 statistics package program. Due to the normal distribution of the data, sample t-test independent of parametric tests and one-way analysis of variance tests were used in the statistical analysis of the data. Bonferroni test, one of the multiple comparison tests, was used in order to determine which groups had significance according to the results of the one-way analysis of variance test. The results were tested at a significance level of $p < 0.05$. The Cronbach Alpha reliability coefficient for the COVID-19 fear scale was found to be 0.88.

Results Statistically significant difference was found between the fears of catching COVID-19 according to the gender of athletes in different branches ($p = 0.01$). No statistically significant difference was found between the fears of catching COVID-19 according to the educational status of the athletes ($p = 0.31$). No statistically significant difference found between the fears of catching COVID-19 according to the contact included in the specialty sports of the athletes in different branches ($p = 0.56$). Statistically significant difference was found between the highest level (professional) and intermediate level (amateur) groups in terms of fear of catching COVID-19 ($p = 0.02$). No statistically significant difference found between the fears of catching COVID-19 ($p = 0.08$) of the athletes in different branches according to their sports experience. Statistically significant difference was found in terms of fear of catching COVID-19 between the 4-6 years and 7-9 years groups with sports experience ($p = 0.02$). In addition, it has been revealed that the average scores of COVID-19 fear scales (20.05 ± 4.79) of female athletes are higher than the average scores of male athletes (17.67 ± 6.75).

Conclusions: As a result, this research has revealed that the fear of COVID-19 does not differ relative to the contact levels of a specific sports branch. In addition, it has shown that the fear of COVID-19 is greater in female athletes compared to male athletes and lower performance levels and less competition experiences are in fact causing an increase in fear of COVID-19.

Keywords: coronavirus, fear, contact sports, athletes

Introduction

New Coronavirus Diseases (COVID-19), which emerged in China in late 2019 and affected the whole world by 2020, is becoming a new threat to sports worldwide [1]. The COVID-19 outbreak has globally affected sporting events of all levels, from mega events to small local events [2].

WHO emphasizes that in the event to be organized as one of the key factors in determining the risk, to be evaluated according to whether it includes sports that are considered to be more likely to spread COVID-19 or not (eg contact sports). They also recommend changing or postponing the activity program as a risk reduction strategy for high-risk activities that require physical contact between participants [3]. Many national and international

sports events at professional and amateur levels, causes the masses to come together and significantly affecting the fight against the pandemic by increasing the risk of spreading. In addition, with the adoption of the athlete-centered approach for protecting the health of athletes, many sports activities have been postponed or cancelled [4-7]. Almost all sports leagues and international sports organizations being postponed or cancelled all over the world and all sports activities including all lower and upper league activities being cancelled or postponed in Turkey, could be seen as examples of the numerous effects of COVID-19 to sports events [8].

As it is inevitable for athletes to become unable to maintain distance in group travels and meetings as well as close contact with their teammates, rivals, close circles or sports equipment, these events may prove dangerous due to the high contagiousness of COVID-19. In addition,

as the international mobility of asymptomatic athletes for competitive purposes would increase the risk for both their rival players and teammates, postponing or cancelling these events is one of the most appropriate approaches [9].

After the first case being approved on March 11, 2020 in Turkey, with lockdown, flexible working arrangements and distant education implementations, it has been decided that all sports competitions will be carried out without spectators until the end of April [10, 11]. Later on March 19, 2020, all sports activities, especially football, basketball, volleyball and handball league competitions have been cancelled or postponed in Turkey [12, 13].

According to the available data, it is believed that it is possible to reopen indoor and outdoor sports areas safely by acutely applying biosecurity measures and with certificates issued by authorized institutions [14]. Indeed, with the transition to the normalization process on June 2020, sports competitions have been commenced and despite the fact that WHO's proposed measures continue to be implemented and controlled, COVID-19 pandemic has created some new stress factors for elite athletes [15-19]. Elite athletes are affected equally or at higher rates than individuals in the general population in terms of numerous psychological symptoms and disorders [17].

The emergence of this virus, which has a high contagiousness and relatively high mortality rate, and its consequences have created a wave of fear, anxiety and worry among individuals all over the world [20, 21]. The fact that this epidemic endangers human health and causes deaths and that this epidemic is being served by the media as the end of the world, creates irreversible psychological effects on people. Fear of catching this virus, fear of losing loved ones, family members being affected by COVID-19 or losses, fear of not being able to get the vaccine or lack of trust in the vaccine are some of the negative psychological effects caused by lack of information or rumors [22].

In addition to the fear of death caused by COVID-19, its effects in other areas such as obstruction of family organizations, closure of schools, workplaces and public places, changes in work routines and isolation etc. cause feelings of despair, uncertainty and abandonment. It can also increase insecurity due to its large-scale economic and social repercussions [23].

The COVID-19 pandemic causes widespread anxiety, worry and fear in people. Despite the availability of different vaccines, the mutation of the virus and the emergence of different variants of the virus causes these negative psychological effects to continue [20, 24, 25].

The emotional reactions that occur in society are generally caused by fear and distorted risk perceptions due to the rate of spread of coronavirus in society does not seem to decrease significantly and the second and third wave risk, as well as the mutations and variants of the virus, it may also develop in a way that includes various psychological disorders such as post-traumatic stress disorder, anxiety, depression, somatization disorders [26].

It is seen that the mental reactions during this epidemic

range from extreme fear to apathy. Therefore, it is possible to say that the reactions to the epidemic are diverse [27]. Fear, which is a normal response to an emerging threat, prepares an individual to have an acute response to both physical and psychological potential harm [28]. When fear becomes chronic or disproportionate, it can become harmful and may be a factor in the emergence of various psychological disorders [23].

The fear motive (what Freud called objective anxiety) emerges as a defense mechanism when people encounter an external object or event that is inherently dangerous and likely to produce pain, that is, fear has an object, and the object of anxiety is nothingness, in other words ambiguous [23, 29, 30]. While fear can be defined as negative emotional reactions triggered by a specific stimulus, anxiety is defined as reactions to a more general or common and harmless objective stimulus [31]. It is stated that there is a low and positive correlation ($r = 0.47$) between the anxiety and fear scales caused by COVID-19 [25].

It is stated that the fear of coronavirus may be caused by uncertainties about the new nature of this epidemic and how bad it could be. The fear of coronavirus is much greater than the fear of seasonal flu, but the flu virus has caused more deaths [32].

COVID-19 has brought a new reality to every field, including sports. Outbreaks affect athletes in protected football, wrestling, rugby, soccer, nature and adventure sports, swimming, triathlon, athletics, trekking, gymnastics, basketball, fencing and many more, as well as their coaches, other support staff and audiences. Negativities in the living conditions caused by the COVID-19 pandemic, such as isolation, the ceasing of training routines, the cancellation or postponement of the matches and major sports events, the non-synchronization of the resumption of the competitions in different countries, the re-planning of the competition programs, the estrangement from the teams or the sports communities, the low quality of communication with coaches and lack of social support affecting both their private and sports lives could have negative results on athletes' emotional and mental health and well-being [5, 33-36].

Postponing seasons and cancelling competitions can cause significant grief, stress, anxiety (worry), disappointment and sadness for athletes. The ceasing of training routines, which have an important effect on depression and anxiety management, increases the psychological effect of COVID-19 on athletes participating in various competitions [37]. Although people show the utmost attention to help athletes maintain the physical distance relative to the type of sport, positioning, size and place of the activity (such as a hall or an open area), it is not possible to provide a strict distance rule in some sports. Athletes are the most prominent among individuals who are not able to maintain physical distance and protect their faces in exposure to COVID-19 in sports, or who are active in training or competition [16].

It is stated that anxiety caused by coronavirus is lower in athletes compared to individuals who do not take part

in sports [38]. Many infections are spread from person to person through contact, causing infections to be common in athletes who engage in contact sports [39]. In contact sports, athletes are in close contact with their teammates in competitions, camps and during daily activities and that is increasing the risk of disease transmission in contact sports athletes [36, 40]. It is thought that determining the psychological levels of the athletes due to COVID-19 according to their gender and sports history could provide important information in planning the measures to be taken, psychological support and early diagnosis strategies for athletes in competitions and training under pandemic conditions relative to the rate of contact included in the sport. From this point of view, the purpose of this research is to (i) examine the COVID-19 fear levels among athletes according to the contact rate included in the sports branch and (ii) examine the COVID-19 fear levels among athletes according to some demographic variables.

The aim of this study is to examine the fear of COVID-19 of athletes in different branches. Hypotheses to be tested for this purpose are listed below;

H1. There is a statistically significant difference between the fears of getting COVID-19 among athletes in different branches according to gender.

H2. There is a statistically significant difference between the fears of getting COVID-19 among athletes in different branches according to their educational status.

H3. There is a statistically significant difference between the fears of getting COVID-19 among athletes in different branches according to the contact included in the sport.

H4. There is a statistically significant difference between the fears of getting COVID-19 according to the level of sportsmen in different branches in the specialty sports.

H5. There is a statistically significant difference between the fears of getting COVID-19 among the athletes in different branches according to their specialty sports background.

H6. There is a statistically significant difference between the fears of getting COVID-19 among the athletes in different branches according to the competition history in the specialty sports.

Material and Methods

Participants

Sport Sciences Faculty students athletes (n=176) in sports with different levels of contact voluntarily participated in the current study (age 22.6 ± 2.7 years, height 174.0 ± 7.9 , weight 70.1 ± 11.8). Contact in sports refers to the contact that athletes make with their friends or competitors, objects or floor. The contact categorization of sports was the level of contact associated with the participants' sport, classified as non-contact, limited-contact and contact according to was based on the guidelines of Rice's from the American Academy of Pediatrics [41].

Ethical approval was obtained from Eskişehir Technical University Scientific Research and Publication

Ethics Board for this research (Doc no: E-87914409-050.03.04-8954, Verification code: BSCK7S5ZUE).

Research Design

In this study, which was conducted to examine the fear of COVID-19 of athletes in sports branches with different levels of contact. Aimed to depict a phenomenon or event that is still ongoing from the past and the person or the object is tried to be described as it is for the situation that is the subject of the study scanning model was used [42].

Data collection tools

COVID-19 Fear Scale (FCV-19S), has been developed and verified by Ahorsu et al. [20]. It has been demonstrated in different studies that the FCV-19S scale is a reliable and valid measurement tool in determining the fear of catching COVID-19 [43-45]. And in this research, the COVID-19 Fear scale, which was adapted into Turkish by Satici et al. [44] was used. This scale consists of 7 items and one sub-dimension and there is no reverse item. The scale is rated as 5-point Likert type as follows "(1) Absolutely Disagree", "(2) Disagree", "(3) Undecided", "(4) Agree", "(5) Strongly Agree".

The research data were obtained by conducting an online survey between 23 November 2020 and 5 January 2020.

Statistical analysis

The research data were analyzed using IBM SPSS 25 statistical package program. Before analyzing the research data, kurtosis and skewness values were examined in order to determine whether the data showed normal distribution or not. Tabachnick and Fidell [46] stated that the distribution could be seen as normal when the skewness and kurtosis values are between ± 1.50 .

Due to the normal distribution of the data, sample t-test independent of parametric tests and one-way analysis of variance tests were used in the statistical analysis of the data. Bonferroni test, one of the multiple comparison tests, was used in order to determine which groups had significance according to the results of the one-way analysis of variance test. Kayri [47] stated that The Bonferroni Test can be used if the variances are homogeneous and the sample size is not equal. The significance level of the tests was tested with $p < 0.05$.

Results

The Cronbach Alpha internal consistency coefficient of the scale was calculated as ,82. And in this study, the Cronbach Alpha internal consistency coefficient was found to be ,88.

Criteria values for reliability coefficient according to Kiliç [48] were as follows;

"unreliable" when $0.00 < \alpha < 0.40$,

"low reliability" when $0.41 < \alpha < 0.60$,

"moderately reliable" when $0.61 < \alpha < 0.80$,

And "highly reliable" when $0.81 < \alpha < 1.00$.

In the light of these values, it can be said that this study has a high level of reliability.

The kurtosis and skewness values of the COVID-19 Fear Scale are in the specified range (Kurtosis -, 068 and Skewness, 359) in this study.

The demographic characteristics of the athletes participating in the study are given in Table 1.

One hundred and twenty (68.2%) male and 56 (31.8%) female athletes participated in the study. When the athletes participating in the research are evaluated in terms of their education level, it is seen that there are 123 (69.9%) athletes and the athletes with the highest degree or undergraduate degree. 99 (56.3%) athletes interested in contact sports, 50 (28.4%) limited-contact sports and 27 (15.3%) non-contact sports participated in the study. When the athletes were examined in terms of the level of specialty sports, it was observed that 115 (65.4%) athletes stated themselves as intermediate level (amateur) athletes. While 74 (42.0%) of the athletes stated that they were interested in their specialty sports for 10 years or more, 69 (39.2%) of them stated that they participated in competitions in their specialty sports for 1-3 years.

Independent sample T-test result according to the gender variable of the research group is given in Table 2.

A statistically significant difference was found between the fears of getting COVID-19 among the athletes in different branches according to gender ($p=0,01$). H_1

hypothesis was accepted.

The results of one-way variance analysis according to the educational status variable of the research group are given in Table 3.

There was no statistically significant difference between the fears of getting COVID-19 according to the educational status of the athletes in different branches ($p = 0.31$). H_2 hypothesis is rejected.

The results of one-way ANOVA test according to the contact variable included in the specialty sports branch of the research group are given in Table 4.

No statistically significant difference was found between the fears of getting COVID -19 among the athletes in different branches according to the contact included in the specialty sports ($p = 0.56$). H_3 hypothesis was rejected.

One-way ANOVA test results according to the specialty sports branch level variable of the research group are given in Table 5.

A statistically significant difference was found between the fears of getting COVID-19 according to the levels of sportsmen in different branches in the specialty

Table 1. Demographic characteristics of the athletes

Variables	Variables	Frequency	Percentage (%)	Cumulative percentage (%)
Gender	Female	56	31.8	31.8
	Male	120	68.2	100.0
	Total	176	100.0	
Educational Status	High School	36	20.5	20.5
	Collage/University	123	69.9	90.4
	Postgraduate	17	9.6	100.0
	Total	176	100.0	
Sports according to contact	Contact Sports	99	56.3	56.3
	Limited-contact Sports	50	28.4	84.7
	Non-contact Sports	27	15.3	100.0
	Total	176	100.0	
Performance Level	Beginner (Learning level)	8	4.5	4.5
	Amateur Level (Competitive)	115	65.4	69.9
	Elite Level (Professional)	53	30.1	100.0
	Total	176	100.0	
Training experience	1-3 year	41	23.3	23.3
	4-6 year	25	14.2	37.5
	7-9 year	36	20.5	58.0
	10 year or above	74	42	100.0
	Total	176	100.0	
Competition experience	1-3 year	69	39.2	39.2
	4-6 year	26	14.8	54.0
	7-9 year	31	17.6	71.6
	10 year or above	50	28.4	100.0
	Total	176		

Table 2. Independent Sample T-test Results by Gender Variable

Dimensions		Levene's Test for Equality of Variances		T-test for Equality of Means			
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference
Fear of COVID-19 Scale	Equal variances assumed	7.204	0.008	-2.369	174	0.019	-.33980
	Equal variances not assumed			-2.673	146.024	0.008	-.33980

Table 3. One-Way ANOVA Test Results According to the Educational Status Variable

ANOVA					
Fear of COVID-19 Scale					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.9	2	0.9	1.1	0.316
Within Groups	139.2	173	0.8		
Total	141.1	175			

Table 4. One-Way ANOVA Test Results According to the Contact Variable Contained by the Specialization Sports

ANOVA					
Fear of COVID-19 Scale					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.9	2	0.5	0.6	0.566
Within Groups	140.2	173	0.8		
Total	141.1	175			

sports ($p = 0.02$). H4 hypothesis was accepted. In order to understand between which groups this difference is, the bonferroni test, one of the multiple comparison tests, was used because the variances were homogeneous ($p=0,627$) and the sample numbers of the groups were different from each other. As a result of the Bonferroni test, a statistically significant difference was found between the elite level (professional) and the amateur level (competitive) groups in terms of fear of catching COVID-19 according to the levels of the sportsmen in different branches in the specialty sports ($p = 0.02$).

The results of one-way variance analysis according to the specialty sports branch history variable of the research group are given in Table 6.

No statistically significant difference was found between the fears of getting COVID-19 among the athletes in different branches according to their specialty sports history ($p = 0.08$). H5 hypothesis was rejected.

The results of one-way analysis of variance according to the variance in the field of specialty sports of the research group are given in Table 7.

A statistically significant difference was found between the fears of getting COVID-19 among the athletes in different branches according to the variable of the

competition history in the specialty sports ($p = 0.02$). H6 hypothesis was accepted. In order to understand between which groups this difference exists, the Bonferroni test, one of the multiple comparison tests, was used because the variances were homogeneous ($p=0,563$) and the sample numbers of the groups were different from each other. As a result of the Bonferroni test, a statistically significant difference was found between 4-6 years and 7-9 years groups of sports experience in terms of fear of getting COVID-19 according to the competition history of the sportsmen in different branches in the specialty sports ($p = 0.02$).

The score values that can be obtained from the scale are between 7 and 35. The average COVID-19 fear score of female participants was 20.05 ± 4.79 and in this regard, they had an above average level of fear, and the average COVID-19 fear score of male participants was 17.67 ± 6.75 and in this regard, they had an average level of fear (Table 8).

Discussion

The main purpose of this study is to examine the fear of COVID-19 among athletes engaged in sports with different contact rates, and the secondary purpose is to examine the fear of COVID-19 according to different

Table 5. One-Way ANOVA and Multiple Comparison Test (Bonferroni) Results According to the Variable of Specialization Sports Branch Level

ANOVA					
Fear of COVID-19 Scale					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.8	2	2.9	3.7	0.025
Within Groups	135.2	173	0.8		
Total	141.1	175			
Multiple Comparisons					
Bonferroni					
(I) Specialization Sport Branch Status Amateur Level (Competitive)	(J) Specialization Sport Branch Status Elite Level (Professional)	Mean Difference (I-J)	Std. Error	Sig.	
		0.4*	0.1	0.021	

Table 6. One-Way ANOVA Test Results According to Specialty Sports History Variable

ANOVA					
Fear of COVID-19 Scale					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.2	3	1.7	2.2	0.088
Within Groups	135.8	172	0.8		
Total	141.1	175			

Table 7. One-Way ANOVA and Multiple Comparison Test (Bonferroni) Results According to the Variable of Competition History in Specialized Sports

ANOVA					
Fear of COVID-19 Scale					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.3	3	2.4	3.1	0.027
Within Groups	133.8	172	0.8		
Total	141.1	175			
Multiple Comparisons					
Bonferroni					
(I) Competition Period in the Speciality Sport Branch 4-6 year	(J) Competition Period in the Speciality Sport Branch 7-9 year	Mean Difference (I-J)	Std. Error	Sig.	
		0.7*	0.2	0.027	

Table 8. Fear Scores of Participants

Fear of COVID-19 Score		
Gender	Female	Male
N	56	120
Minimum	10.0	7.0
Maximum	31.0	35.0
Mean	20.0	17.7
S.D.	4.8	6.7

variables such as gender, educational status, performance levels, sports and competition history. According to the findings obtained as a result of the analysis, it has been revealed that the fear of COVID-19 is similar according to the variables of the sports branch with different levels of contact, educational status, sports and competition history, and varies according to the variables of gender and performance levels. Accordingly, it was observed that female athletes had higher fear scores than male athletes and that athletes who stated that they had moderate performances had higher COVID-19 fear scores than athletes who stated that they had higher levels of performance.

According to the results of this study, it has been observed that the COVID-19 fears of the athletes who do contact, semi-contact and non-contact sports are similar and moderate. It is stated that the risk of transmission of the disease is high in athletes who engage in contact sports, as they are in close contact with rival teams athletes and teammates in camps and during daily activities [40]. The fact that this risk in contact sports and the fear of COVID-19 in athletes do not differ relative to the contact rate of sports according to the results of this research supports the view that athletes, trainers and managers should be educated and informed about the risks and common symptoms of infectious diseases that spread as a result of person-to-person contact while doing sports [49]. The results of this study, which investigates the fear of COVID-19 in athletes who engage in sports involving different levels of contact, may help future research, as well as help trainers, athletes, healthcare professionals and all other sports-related stakeholders to understand the causes of symptoms, clarify the diagnosis and help design decisions, measures and interventions to alleviate the fear of COVID-19 of athletes.

Another result of this research has shown that female athletes' COVID-19 fear scores are higher than of male athletes. It is stated that the COVID-19 pandemic and isolation affect women more psychologically [50, 51]. The results of this study are similar to the studies revealing that the fear of COVID-19 is higher in women [52-54]. Studies conducted on Turkish participants revealed that both in healthy normal population and athlete population, women had greater fear and anxiety for COVID-19 scales than men [38, 43, 55-58]. The fact that women are more affected by psychological distress such as depression, anxiety, adjustment disorder, perceived stress, post-traumatic stress disorder and insomnia caused by COVID-19 can be explained by the fact that women are more psychologically vulnerable [59-61].

It has been stated that fear of COVID-19 and other negative psychological effects were greater in the beginning of the pandemic, and women and younger individuals were more affected by them, and these effects have decreased in later periods [62, 63]. Research results revealing that fear during the COVID-19 outbreak are similar between genders show that its effects on people living in different countries or geographies may differ depending on the course of the pandemic [24, 62, 64].

The effects of COVID-19 have revealed the vulnerabilities of women's sports rather clearly [65]. It can be said that female athletes are more affected by the restrictions caused by COVID-19 due to the decrease in training times and changes in training patterns, financial problems, and difficulties in accessing sports equipment [66]. The fact that the psychological well-being of women is affected more negatively than men in the crisis environment caused by COVID-19 supports these results [67].

The COVID-19 pandemic has had different impacts on the sports industry, athletes getting sick, some sports clubs closing down, leagues being cancelled or postponed, unemployment of financial losses of many sports workers, and serious impact on sports clubs and federations' incomes. In addition to these, due to female athletes being able to train at a lower frequency, duration and intensity relative to having less economic opportunities in clubs, facilities and staff compared to male athletes, it is clearly revealed that female athletes are facing more and stronger problems than male athletes [2, 68]. It is also uncertain and quite difficult to predict how the post-COVID-19 sports world will shape for female athletes, especially in sports such as football where men are more dominant [69].

The fact that the athletes suffering from infectious diseases are mostly men reflect the dominance of male athletes in contact sports, it also indicates the need for psychological and mental measures to reduce the negative effects of COVID-19 on the psychology of female athletes. With future longitudinal and cross-sectional studies, the effects of professional psychological and social support specific to female athletes on the psychological effects associated with COVID-19 isolation, quarantine and social distance can be revealed [36].

In this study, it was found that the COVID-19 fear scores of athletes with moderate performance levels were significantly higher than the athletes with high performance levels, and also, the athletes with shorter competition histories (4-6 years) compared to the athletes with a longer competition histories (7-9 years) showed that they experienced more fear of COVID-19. These results, which are similar to the results of the research indicating that the athletes competing in the lower leagues experience more anxiety during the COVID-19 times, show that the athletes with lower performance have more fear of COVID-19 [70, 71].

Due to negative psychological effects of restrictions on team and individual sports bringing many athletes and sports organizations to the brink of bankruptcy, and future concerns caused by uncertainty about the economic, health and sporting performances especially on athletes with lower performance levels, it can be said that it also affects the fear of COVID-19 [16, 72]. The fact that younger and lower-performing athletes have higher stress perceptions, fear of making mistakes and failure relative to professional level athletes, and their concerns about their future careers may also have a mediating role in fear of COVID-19 [51, 73, 74].

The research results support these results, as there is a relationship between variables such as old age, being close to graduation, being a male, having the means to meet the budget for treatment and having a lower fear level of COVID-19 [75]. However, the fact that situations such as pandemics create a more stressful social environment for parents may cause younger athletes to be exposed to a more stressful environment as they are directly affected by their family members [76]. According to these results, it is seen that the implementation of special health practices and social support programs for younger and less experienced female and male athletes should be encouraged.

Among the different fears that athletes may be exposed to, such as fear of re-injury, making mistakes, and others, the psychological burden caused by the fear caused by COVID-19 creates the need for professional psychological and social support for athletes [77-79]. Uniqueness of COVID-19, unpredictable reality, persistence of uncertainties, acquisition behaviors and avoidance behaviors, statements by international organizations, declining belief and trust in health infrastructure, statements of leaders and celebrities struggling with COVID-19, negative effects of infodemics to daily life can be listed as risk factors that cause the fear of COVID-19 to grow [80]. Fear related to COVID-19 may also include antecedent ones such as fear of economic consequences, fear of new measures, fear of collapsing of healthcare, fear of disease, fear of death or fear of carrying the virus to risk groups [81].

The COVID-19 outbreak can affect mental health in individuals and different societies. Therefore, in the current crisis, it is vital to identify individuals from different groups and different populations susceptible to psychological disorders so that the mental health of general population could be maintained and improved with appropriate approaches [64]. Setting goals to reduce and cope with emotions such as fear, worry and anger and psychological effects such as stress, post-traumatic stress disorder, anxiety, insomnia, suicidal thoughts and

depressive disorders, and similar coping strategies such as maintaining physical activity of different intensity (mild, moderate and severe) and reducing inactivity and maintaining social relations with teammates, relatives and friends via phones or video calls proved to be important to protect the mental health of athletes [20, 33, 37, 55, 78, 82-88].

As the pandemic started to be partially controlled in Europe, restrictions came back once more when the new mutation of the virus came to be. It would be beneficial for trainers, sports health professionals, psychologists and sports authorities to take social and psychological support measures and to be prepared for similar outcomes in athletes and to plan new training strategies [5, 25, 34]. For example, it is recommended to create temporary frames for training compatible with the existing social distance and isolation regulations and have sports activities done in small groups in open areas and to avoid physical contact as much as possible [89].

Conclusion

As a result, this research has revealed that the fear of COVID-19 does not differ relative to the contact levels of a specific sports branch. In addition, it has shown that the fear of COVID-19 is greater in female athletes compared to male athletes and lower performance levels and less competition experiences are in fact causing an increase in fear of COVID-19.

Highlights

This study was supported by Eskişehir Technical University Scientific Research Projects Commission under the grant no: 20ADP165.

Funding

The authors have no funding to disclose.

Conflicts of Interest

The authors declare that they have no conflict of interest.

References

- Ludvigsen JAL, Hayton JW. Toward COVID-19 secure events: considerations for organizing the safe resumption of major sporting events. *Manag Sport Leis.* 2020;1-11. <https://doi.org/10.1080/23750472.2020.1782252>
- Keshkar S, Dickson G, Ahonen A, Swart K, Addesa F, Epstein A, et al. The effects of Coronavirus pandemic on the sports industry: An update. *Ann Appl Sport Sci.* 2021;9(1):0-0. <https://doi.org/10.29252/aassjournal.964>
- Carmody S, Murray A, Borodina M, Goutteborge V, Massey A. When can professional sport recommence safely during the COVID-19 pandemic? Risk assessment and factors to consider. *Br J Sports Med.* 2020;54(16):946-8. <http://dx.doi.org/10.1136/bjsports-2020-102539>
- Evans AB, Blackwell J, Dolan P, Fahlén J, Hoekman R, Lenneis V, et al. Sport in the face of the COVID-19 pandemic: towards an agenda for research in the sociology of sport. *Eur J Sport Soc.* 2020;17(2):85-95. <https://doi.org/10.1080/16138171.2020.1765100>
- Mann RH, Clift BC, Boykoff J, Bekker S. Athletes as community; athletes in community: COVID-19, sporting mega-events and athlete health protection. *Br J Sports Med.* 2020;54(18):1071-2. <http://dx.doi.org/10.1136/bjsports-2020-102433>
- Miles L, Shipway R. Exploring the COVID-19 pandemic as a catalyst for stimulating future research agendas for managing crises and disasters at international sport events. *Event Management.* 2020;24(4):537-52. <http://doi.org/10.3727/152599519X15506259856688>
- Parnell D, Widdop P, Bond A, Wilson R. COVID-19, networks and sport. *Manag Sport Leis.* 2020;1-7. <https://doi.org/10.1080/23750472.2020.1750100>
- Türkmen M, Özşari A. Covid-19 Salgını ve Spor Sektörüne Etkileri, [Covid-19 Pandemic and Its Impact on Sports Industry]. *International Journal of Sport Culture and Science,* 2020;8(2):55-67. (In Turkish). <https://doi.org/10.14486/IntJSCS.2020.596>

9. Hosey RG, Rodenberg RE. Infectious disease and the collegiate athlete. *Clin Sports Med.* 2007;26(3):449–71. <https://doi.org/10.1016/j.csm.2007.04.005>
10. Turkish Health Ministry. T.C. Sağlık Bakanlığı Günlük Koronavirüs Tablosu, [Turkey Ministry of Health Daily Coronavirus Table]. [Internet]. 2021. [cited 2021 Mar 11]. Available from: <https://covid19.saglik.gov.tr/> (In Turkish).
11. Erdem İ. Koronavirüse (Covid-19) Karşı Türkiye'nin Karantina ve Tedbir Politikaları, [Quarantine and Precaution Policies of Turkey Against Coronavirus (COVID-19)]. *Electronic Turkish Studies*, 2020;15(4). (In Turkish). <https://doi.org/10.7827/TurkishStudies.43703>
12. Ministry of Youth and Sports. Futbol, basketbol, voleybol ve hentbolda ligler ertelendi. [Leagues postponed in football, basketball, volleyball and handball]. [Internet]. 2021. [cited 2021 Feb 4]. Available from: <https://shgm.gsb.gov.tr/HaberDetaylari/1/186770/futbol-basketbol-voleybol-ve-hentbolda-ligler-ertelendi.aspx> (In Turkish).
13. Öztürk O, Bayraktar D. Pandemilerin Şafağında: COVID-19 ve Fiziksel İnaktivite, [In the Dawn of the Pandemics: COVID-19 and Physical Inactivity], *İzmir Katip Çelebi Üniversitesi Sağlık Bilimleri Fakültesi Dergisi.* 2020;5(2):143–6. (In Turkish).
14. Cortez ACL, Pitanga FJG, Almeida-Santos MA, Nunes RAM, Botero-Rosas DA, Dantas EHM. Centers of physical activities and health promotion during the COVID-19 pandemic. *Rev Assoc Med Bras.* 2020;66(10):1328–34. <https://doi.org/10.1590/1806-9282.66.10.1328>
15. Çakır Z. The effects of the covid-19 pandemic on sports, athletes and trainers during the normalization phase. *Online J Recreat Sport.* 2020;9(93):45–58. <https://doi.org/10.22282/ojrs.2020.70>
16. DiFiori JP, Green G, Meeuwisse W, Putukian M, Solomon GS, Sills A. Return to sport for North American professional sport leagues in the context of COVID-19. *Br J Sports Med.* 2020;bjsports-2020-103227. <http://dx.doi.org/10.1136/bjsports-2020-103227>
17. 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,* 2020;bjsports-2020-102884. <https://doi.org/10.1136/bjsports-2020-102884>
18. Turkish Football Federation. TFF Yönetim Kurulu Kararı - Duyuru ve Kararlar Detay Sayfası TFF. [TFF Board of Directors Decision - Announcements and Decisions Detail Page TFF]. 2021. [Internet]. [cited 2021 Feb 2]. Available from: <https://www.tff.org/default.aspx?pageID=687&ftxtID=33276> (In Turkish).
19. WHO, 2020d. Coronavirus disease (COVID-19): Mass gatherings [Internet]. 2020. [cited 2021 Feb 2]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-mass-gatherings>
20. Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: Development and initial validation. *Int J Ment Health Addict.* 2020;1–9. <https://doi.org/10.1007/s11469-020-00270-8>
21. Lin C-Y. Social reaction toward the 2019 novel coronavirus (COVID-19). *Soc Health Behav.* 2020;3(1):1. https://doi.org/10.4103/SHB.SHB_11_20
22. Fardin MA. COVID-19 and Anxiety: A Review of Psychological Impacts of Infectious Disease Outbreaks. *Arch Clin Infect Dis,* 2020;15. <https://doi.org/10.5812/archcid.102779>
23. Ornell F, Schuch JB, Sordi AO, Kessler FHP. “Pandemic fear” and COVID-19: mental health burden and strategies. *Rev Bras Psiquiatr.* 2020;42(3):232–5. <https://doi.org/10.1590/1516-4446-2020-0008>
24. Duman N. Üniversite Öğrencilerinde COVID-19 Korkusu ve Belirsizliğe Tahammülsüzlük. [COVID-19 Fear and Intolerance to Uncertainty in University Students]. *J Soc Sci.* 2020;4(8):426–37. (In Turkish). <https://doi.org/10.30520/tjsosci.748404>
25. Srivastava A, Bala R, Srivastava AK, Mishra A, Shamim R, Sinha P. Anxiety, obsession and fear from coronavirus in Indian population: a web-based study using COVID-19 specific scales. *Int J Community Med Public Health.* 2020;7(11):4570–7. <https://doi.org/10.18203/2394-6040.ijcmph20204763>
26. Shigemura J, Ursano RJ, Morganstein JC, Kurosawa M, Benedek DM. Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations. *Psychiatry Clin Neurosci.* 2020;74(4):281–2. <https://doi.org/10.1111/pcn.12988>
27. Sargin N, Kutluca V. Covid-19 Salgını Sürecinde Yetişkinlerin Tepkileri. [Responses of Adults During The COVID-19 Outbreak]. *Bilge Uluslararası Sosyal Araştırmalar Dergisi.* 2020;4(2):47–59. (In Turkish). <https://doi.org/10.47257/busad.838408>
28. Pappas G, Kiriaze IJ, Giannakis P, Falagas ME. Psychosocial consequences of infectious diseases. *Clin Microbiol Infect.* 2009;15(8):743–7. <https://doi.org/10.1111/j.1469-0691.2009.02947.x>
29. Kara M. Kierkegaard Felsefesiyle Birlikte Ortaya Çıkan Bir Kavram Karmaşası: Endişe mi, Kaygı mı, Anksiyete mi, Korku mu? [A Concept Confusion Emerging from Kierkegaard Philosophy: Is It Worry or Apprehension or Anxiety or Fear?] *FSM İlmî Araştırmalar İnsan ve Toplum Bilim Derg.* 2020;(16):279–308. (In Turkish). <https://doi.org/10.16947/fsmia.849168>
30. Sarnoff I, Zimbardo PG. Anxiety, fear, and social affiliation. *J Abnorm Soc Psychol.* 1961;62:356–63. <https://doi.org/10.1037/h0046506>
31. Geer JH. The development of a scale to measure fear. *Behav Res Ther.* 1965;3(1):45–53. [https://doi.org/10.1016/0005-7967\(65\)90040-9](https://doi.org/10.1016/0005-7967(65)90040-9)
32. Asmundson GJ, Taylor S. Coronaphobia: Fear and the 2019-nCoV outbreak. *Journal of anxiety disorders.* 2020;70:102196. <https://doi.org/10.1016/j.janxdis.2020.102196>
33. Kalra SS, Mallick A, Dande J. Sports Medicine Practice during COVID-19 Pandemic - A “New Normal”. *Int J Sports Exerc Med.* 2020;6:174. <https://doi.org/10.23937/2469-5718/1510174>
34. Lamberts R, Gomez-Ezeiza J. The confinement of athletes by COVID-19: Effects on training, wellbeing and the challenges when returning to competition. *European Journal of Human Movement.* 2020;44:1–4. <https://doi.org/10.21134/eurjhm.2020.44.559>
35. Lim MA. Exercise addiction and COVID-19-associated restrictions. *J Ment Health.* 2020;1–3. <https://doi.org/10.1080/09638237.2020.1803234>
36. Turbeville SD, Cowan LD, Greenfield RA. Infectious disease outbreaks in competitive sports: A review of the literature. *Am J Sports Med.* 2006;34(11):1860–5. <https://doi.org/10.1177/0363546505285385>
37. Toresdahl BG, Asif IM. Coronavirus disease 2019 (COVID-19): Considerations for the competitive athlete. *Sports Health.* 2020;12(3):221–4. <https://doi.org/10.1177/1941738120918876>
38. Tekkurşun Demir G, Bulğay C, Çakır OV, Bayraktar I, Çetin E. Examination of the anxiety of catching the

- Novel Coronavirus (COVID-19) in elite athletes and sedentaries. *Int j Educ Res Innov.* 2020;(15):360–72. <https://doi.org/10.46661/ijeri.5332>
39. Peterson AR, Nash E, Anderson BJ. Infectious disease in contact sports. *Sports Health.* 2019;11(1):47–58. <https://doi.org/10.1177/1941738118789954>
 40. Corsini A, Bisciotti GN, Eirale C, Volpi P. Football cannot restart soon during the COVID-19 emergency! A critical perspective from the Italian experience and a call for action. *Br J Sports Med.* 2020;54(20):1186–7. <https://doi.org/10.1136/bjsports-2020-102306>
 41. Rice SG. American Academy of Pediatrics Council on Sports Medicine and Fitness. Medical conditions affecting sports participation. *Pediatrics.* 2008;121(4):841–8. <https://doi.org/10.1542/peds.2008-0080>
 42. Karasar N. *Bilimsel Araştırma Yöntemi* [Scientific Research Method]. Ankara: Nobel Akademik Yayıncılık; 2014. (In Turkish).
 43. Korukcu O, Ozkaya M, Faruk Boran O, Boran M. The effect of the COVID-19 pandemic on community mental health: A psychometric and prevalence study in Turkey. *Health Soc Care Community* 2021:hsc.13270. <https://doi.org/10.1111/hsc.13270>
 44. Satici B, Gocet-Tekin E, Deniz ME, Satici SA. Adaptation of the fear of COVID-19 scale: Its association with psychological distress and life satisfaction in Turkey. *Int J Ment Health Addict.* 2020;1–9. <https://doi.org/10.1007/s11469-020-00294-0>
 45. Ladikli N, Bahadır E, Yumuşak FN, Akkuzu H, Karaman G, Türkkan Z. The Reliability and Validity of Turkish Version of Coronavirus Anxiety Scale. *Int J Soc Sci Res.* 2020;3(2): 71–80.
 46. Tabachnick BG, Fidell LS. *Using multivariate statistics.* 6th ed. Upper Saddle River, NJ: Pearson; 2012.
 47. Kayri M. The Multiple Comparison (Post-Hoc) Techniques to Determine the Difference Between Groups in Researches. *Fırat University Journal of Social Sciences.* 2009;19(1):51–64.
 48. Kiliç S. Cronbach'ın alfa güvenilirlik katsayısı. [Cronbachs Alpha Reliability Coefficient]. *Journal of Mood Disorders.* 2016;6(1):47–48. (In Turkish). <https://doi.org/10.5455/jmood.20160307122823>
 49. Mast EE, Goodman RA. Prevention of infectious disease transmission in sports. *Sports Med.* 1997;24(1):1–7. <http://doi.org/10.2165/00007256-199724010-00001>
 50. Pieh C, Budimir S, Probst T. The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. *J Psychosom Res.* 2020;136(110186):110186. <https://doi.org/10.1016/j.jpsychores.2020.110186>
 51. di Fronso S, Costa S, Montesano C, Di Gruttola F, Ciofi EG, Morgilli L, et al. The effects of COVID-19 pandemic on perceived stress and psychobiosocial states in Italian athletes. *Int J Sport Exerc Psychol.* 2020;1–13. <https://doi.org/10.1080/1612197X.2020.1802612>
 52. Bilge Y, Bilge Y. Koronavirüs salgını ve sosyal izolasyonun psikolojik semptomlar üzerindeki etkilerinin psikolojik sağlık ve stresle baş etme tarzları açısından incelenmesi. [Investigation of the effects of corona virus pandemic and social isolation on psychological symptoms in terms of psychological resilience and coping styles]. *Klinik Psikiyatri Dergisi.* 2020;23(1), 38–51. (In Turkish). <https://doi.org/10.5505/kpd.2020.66934>
 53. Broche-Pérez Y, Fernández-Fleites Z, Jiménez-Puig E, Fernández-Castillo E, Rodríguez-Martin BC. Gender and fear of COVID-19 in a Cuban population sample. *Int J Ment Health Addict.* 2020;1–9. <https://doi.org/10.1007/s11469-020-00343-8>
 54. Rana IA, Bhatti SS, Aslam AB, Jamshed A, Ahmad J, Shah AA. COVID-19 risk perception and coping mechanisms: Does gender make a difference? *Int J Disaster Risk Reduct.* 2021;55(102096):102096. <https://doi.org/10.1016/j.ijdr.2021.102096>
 55. Biricik YS, Sivrikaya MH. COVID-19 Fear in Sports Sciences Students and Its Effect on Academic Procrastination Behavior. *International Journal of Applied Exercise Physiology.* 2020;9(10): 50–56. <https://doi.org/10.26655/IJAEP.2020.10.1>
 56. Özmen S, Özkan O, Özer Ö, Yanardağ MZ. Investigation of COVID-19 fear, well-being and life satisfaction in Turkish society. *Soc Work Public Health.* 2021;1–14. <https://doi.org/10.1080/19371918.2021.1877589>
 57. Tural V, Efe M. Bireylerin Psikolojik Sağlık ve COVID-19 Korkularının Çeşitli Değişkenlere Göre İncelenmesi. [Examining Individuals Psychological Resilience and COVID-19 Fears According to Various Variable]. *Journal Of International Social Research.* 2020;13(74):318–325. (In Turkish).
 58. Yıldırım M, Geçer E, Akgül Ö. The impacts of vulnerability, perceived risk, and fear on preventive behaviours against COVID-19. *Psychol Health Med.* 2021;26(1):35–43. <https://doi.org/10.1080/13548506.2020.1776891>
 59. Bendau A, Petzold, MB, Wyka S, Pyrkosch L, Plag J, Ströhle A. Anxiety in times of COVID-19 and other health crises. *Der Nervenarzt.* 2020. <https://doi.org/10.1007/s00115-020-01030-8>
 60. Rossi R, Succi V, Talevi D, Mensi S, Niolu C, Pacitti F, et al. COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Front Psychiatry.* 2020;11:790. <https://doi.org/10.3389/fpsy.2020.00790>
 61. Talevi D, Succi V, Carai M, Carnaghi G, Faleri S, Trebbi E, et al. Mental health outcomes of the CoViD-19 pandemic. *Riv Psichiatr.* 2020;55(3):137–44. <https://doi.org/10.1708/3382.33569>
 62. Fodjo JNS, Ngarka L, Njamnshi YW, Nfor LN, Mengnjo MK, Mendo EL, et al. *Fear and depression during the COVID-19 outbreak in Cameroon: A nation-wide observational study* [Internet]. Research Square. 2021 [cited 2021 Feb 04]. Available from: <https://www.researchsquare.com/article/rs-172177/v1> <https://doi.org/10.21203/rs.3.rs-172177/v1>
 63. Zajacova A, Jehn A, Stackhouse M, Choi KH, Denice P, Haan M, et al. Mental health and economic concerns from March to May during the COVID-19 pandemic in Canada: Insights from an analysis of repeated cross-sectional surveys. *SSM Popul Health.* 2020;12(100704):100704. <https://doi.org/10.1016/j.ssmph.2020.100704>
 64. Salari N, Hosseini-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, et al. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Global Health.* 2020;16(1):57. <https://doi.org/10.1186/s12992-020-00589-w>
 65. Clarkson BG, Parry KD, Culvin A, Pope S. An institutional analysis of gender (in)equalities, covid-19 and governance of elite women's football in Australia, England and USA. *SportRxiv.* 2021. <https://doi.org/10.31236/osf.io/ut6zm>
 66. Bowes A, Lomax L, Piasecki J. The impact of the COVID-19 lockdown on elite sportswomen. *Manag Sport Leis.* 2020;1–17.

- <https://doi.org/10.1080/23750472.2020.1825988>
67. Sønderkov KM, Dinesen PT, Santini ZI, Østergaard SD. The depressive state of Denmark during the COVID-19 pandemic. *Acta Neuropsychiatr.* 2020;32(4):226–8. <https://doi.org/10.1017/neu.2020.15>
68. Mon-López D, García-Aliaga A, Ginés Bartolomé A, Muriarte Solana D. How has COVID-19 modified training and mood in professional and non-professional football players? *Physiol Behav.* 2020;227(113148):113148. <https://doi.org/10.1016/j.physbeh.2020.113148>
69. Clarkson BG, Culvin A, Pope S, Parry KD. Covid-19: Reflections on threat and uncertainty for the future of elite women's football in England. *Manag Sport Leis.* 2020;1–12. <https://doi.org/10.1080/23750472.2020.1766377>
70. Gümüşgöl C, Ersoy A, Gümüşgöl O. Amatör ve Profesyonel Sporcuların Yeni Tip Koronavirüse (Covid-19) Yakalanma Kaygılarının İncelenmesi - Yönelimsel Karar Boyutu. [Investigation of Amateur and Professional Athlete's Novel Coronavirus (COVID-19) Anxiety – Aspect of Managerial Decision]. *Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi*, 2020;7(S11): 26-37. <https://doi.org/10.33468/sbsebd.129>
71. Çifçi F, Demir A. COVID-19 Pandemisinde Türk Profesyonel Futbolcuların COVID-19 Korkusu Ve Kaygı Düzeylerinin İncelenmesi. [Examination of COVID-19 Fear and Anxiety Levels of Turkish Football Players in The COVID-19 Pandemic]. *Journal of Sport an Recreation Researches*, 2020;2(1): 26–38. <https://doi.org/10.14687/jhs.v17i4.6092>
72. Gilat R, Cole BJ. COVID-19, medicine, and sports. *Arthrosc Sports Med Rehabil.* 2020;2(3):e175–6. <https://doi.org/10.1016/j.asmr.2020.04.003>
73. Mahmud MS, Talukder MU, Rahman SM. Does “Fear of COVID-19” trigger future career anxiety? An empirical investigation considering depression from COVID-19 as a mediator. *Int J Soc Psychiatry.* 2020;20764020935488. <https://doi.org/10.1177/0020764020935488>
74. Sagar SS, Lavalée D, Spray CM. Why young elite athletes fear failure: Consequences of failure. *J Sports Sci.* 2007;25(11):1171–84. <https://doi.org/10.1080/02640410601040093>
75. Nguyen HT, Do BN, Pham KM, Kim GB, Dam HTB, Nguyen TT, et al. Fear of COVID-19 scale-associations of its scores with health literacy and health-related behaviors among medical students. *Int J Environ Res Public Health.* 2020;17(11):4164. <https://doi.org/10.3390/ijerph17114164>
76. Gabor C, Törő KD, Mokos J, Rozsa S, Éva H, Andrea K, et al. Examining perceptions of stress, wellbeing and fear among Hungarian adolescents and their parents under lockdown during the COVID-19 pandemic [Internet]. *PsyArXiv.* 2020. [cited 2021 Feb 04]. Available from: <https://psyarxiv.com/feth3> (Preprint)
77. Kaçoğlu C, Atalay E, Turhan B. Fiziksel Temas İçeren ve İçermeyen Sporlarda Yaralanma Sonrası Spora Dönüşte Kinezyofobi ve Depresyon Düzeylerinin İncelenmesi [Assessing The Kinesiophobia and Depression Status at Return to Sport Following Sport Related Injuries in Contact and Non-Contact Sports]. *Turkish Journal of Sport Medicine*, 2018;53(2), 067–075. (In Turkish). <https://doi.org/10.5152/tjms.2018.092>
78. Zhou X, Snoswell CL, Harding LE, Bambling M, Edirippulige S, Bai X, et al. The role of telehealth in reducing the mental health burden from COVID-19. *Telemed J E Health.* 2020;26(4):377–9. <http://doi.org/10.1089/tmj.2020.0068>
79. Coreia ME, Rosado A, Serpa S, Ferreira V. Fear of failure in athletes: Gender, age and type of sport differences. *Revista iberoamericana de psicología del ejercicio y el deporte*, 2017;12(2):185–193.
80. Arora A, Jha AK, Alat P, Das SS. Understanding coronaphobia. *Asian J Psychiatr.* 2020;54:102384. <https://doi.org/10.1016/j.ajp.2020.102384>
81. Kubba C, Foran HM. Measuring COVID-19 related anxiety in parents: Psychometric comparison of four different inventories. *JMIR Ment Health.* 2020;7(12):e24507. <https://doi.org/10.2196/24507>
82. Bekaroğlu E, Yılmaz T. COVID-19 ve Psikolojik Etkileri: Klinik Psikoloji Perspektifinden Bir Derleme. [COVID-19 and Psychological Effects: A Review in Clinical Psychology Perspective]. *Nesne J*, 2020;8(18), 573-584. (In Turkish). <https://doi.org/10.7816/nesne-08-18-14>
83. Brown E, Gray R, Lo Monaco S, O'Donoghue B, Nelson B, Thompson A, et al. The potential impact of COVID-19 on psychosis: A rapid review of contemporary epidemic and pandemic research. *Schizophr Res.* 2020;222:79–87. <https://doi.org/10.1016/j.schres.2020.05.005>
84. Demir A, Çifçi F. COVID-19 Pandemi Sürecinde Egzersizin Lise Öğrencilerinin Psikolojik Sağlık Düzeylerine Etkisinin İncelenmesi. [Investigation of The Effect of Exercise on High School Students' Psychological Resilience Levels in COVID-19 Pandemic]. *Ank Üniv Beden Eğit ve Spor Yüksek Spormetre Beden Eğit ve Spor Bilim Derg.* 2020;18(3):169–79. (In Turkish). <https://doi.org/10.33689/spormetre.739918>
85. Graupensperger S, Benson AJ, Kilmer JR, Evans MB. Social (Un)distancing: Teammate interactions, athletic identity, and mental health of student-athletes during the COVID-19 pandemic. *J Adolesc Health.* 2020;67(5):662–70. <https://doi.org/10.1016/j.jadohealth.2020.08.001>
86. Lardone A, Sorrentino P, Giancamilli F, Palombi T, Simper T, Mandolesi L, et al. Psychosocial variables and quality of life during the COVID-19 lockdown: a correlational study on a convenience sample of young Italians. *Peer J.* 2020;8(e10611):e10611. <https://doi.org/10.7717/peerj.10611>
87. Slimani M, Paravlic A, Mbarek F, Bragazzi NL, Tod D. The relationship between physical activity and quality of life during the confinement induced by COVID-19 outbreak: A pilot study in Tunisia. *Front Psychol.* 2020;11:1882. <https://doi.org/10.3389/fpsyg.2020.01882>
88. Werneck AO, Silva DR, Malta DC, Souza-Júnior PRB, Azevedo LO, Barros MBA, et al. Physical inactivity and elevated TV-viewing reported changes during the COVID-19 pandemic are associated with mental health: A survey with 43,995 Brazilian adults. *J Psychosom Res.* 2021;140(110292):110292. <https://doi.org/10.1016/j.jpsychores.2020.110292>
89. Timpka T. Sports health during the SARS-CoV-2 pandemic. *Sports Med.* 2020;50(8):1413–6. <https://doi.org/10.1007/s40279-020-01288-7>

Information about the authors:

Celil Kaçođlu; (Corresponding Author); <https://orcid.org/0000-0002-1817-5234>; ckacoglu@eskisehir.edu.tr; Department of Coaching Education, Sport Sciences Faculty, Eskiřehir Technical University; Eskiřehir, Turkey.

Halil O. obanođlu; <https://orcid.org/0000-0002-1305-9496>; orbay.cobanoglu@alanya.edu.tr; Department of Coaching Education, Sport Sciences Faculty, Alanya Alaaddin Keykubat University; Alanya/Antalya, Turkey.

Emre řahin; <https://orcid.org/0000-0002-5251-5095>; Emresahinn93@hotmail.com; Department of Coaching Education, Sport Sciences Faculty, Eskiřehir Technical University; Eskiřehir, Turkey.

Cite this article as:

Kaçođlu C, obanođlu HO, řahin E. An investigation of fear of COVID-19 status in university student athletes from different sports associated with contact. *Physical Education of Students*, 2021;25(2):117–128.
<https://doi.org/10.15561/20755279.2021.0207>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited
<http://creativecommons.org/licenses/by/4.0/deed.en>

Received: 03.03.2021

Accepted: 03.04.2021; Published: 30.04.2021