Apuntes Universitarios, 2022: 12 (3), julio-setiembre
ISSN: 2304-033https://doi.org/10.17162/au.v12i3.1132

¿Los tipos de personalidad de los estudiantes de ciencias del deporte afectan su miedo al coronavirus?

Do sports science students' personality types affect their fear of coronavirus?

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Recibido: 20 de diciembre de 2021 **Aceptado:** 08 de abril de 2022

Resumen
El objetivo del presente estudio es revelar cómo los tipos de personalidad de los estudiantes de ciencias del deporte han afectado su miedo a la COVID-19 en términos de algunas variables. Participaron en el estudio 272 estudiantes de pregrado (115 mujeres, 157 hombres) que continuaron sus estudios en ciencias del deporte. En el estudio se utilizaron la "Escala de Miedo del Coronavirus-19" y la "Escala de Personalidad de Cinco Factores". Los datos obtenidos fueron analizados con el programa informático estadístico Jamovi 2.0.0. De acuerdo con los hallazgos, las puntuaciones totales de la COVID-19 de los estudiantes tienen una relación positiva con el tipo de personalidad de "Autorregulación" y una relación negativa con el tipo de personalidad "neurótica". Como resultado, los temores por el coronavirus se ven afectados por los tipos de personalidad de los estudiantes, el género, el tabaquismo y el hecho de que alguien en la familia contraiga COVID-19.

Palabras clave: COVID-19, miedo, tipo de personalidad, estudiantes, ciencias del deporte

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Abstract
The aim of the study is to reveal how the personality types of Sports Science students have affected their fear of COVID-19 in terms of some variables. 272 undergraduate students (female: 115, male: 157) who continued their studies in Sports Sciences participated in the study. In the study The 'Coronavirus-19 Fear Scale' and The 'Five Factor Personality Scale' was used. The obtained data were analyzed with the Jamovi 2.0.0 statistical software program. According to the findings, students' coronavirus total scores have a positive relationship with the 'Self-Regulation' personality type and a negative relationship with the 'Neurotic' personality type. As a result, coronavirus fears are affected by students' personality types, gender, smoking and the fact that someone in the family has COVID-19.

Keywords; COVID-19, fear, personality type, students, sports sciences

Introduction

The COVID-19 (Coronavirus disease) pandemic, which has affected the whole world, first appeared in the city of Wuhan, China in early December 2019, as the severe acute respiratory syndrome of Coronavirus 2 (SARS-CoV-2) (Huang et al., 2020). World Health Organization declared on 31 January 2020 that COVID-19 is an epidemic of international concern in public health and declared a state of emergency on 11 March 2020 (Ghebreyesus, 2020). In order to prevent the spread of the COVID-19 pandemic in our country, as in the whole world, measures have been taken to prevent the epidemic with the transition of universities to distance education, curfew, partial quarantine practices, social distance, mask use, and cleaning rules. Participation in physical activity or sports, which is an essential component of maintaining a healthy lifestyle (Hull et al., 2020); social areas, fitness centres, and public parks were negatively affected due to the closure of the COVID-19 pandemic measures (Heffernan & Jae, 2020). Due to COVID-19, the young population has shown a sedentary lifestyle during the quarantine period, their susceptibility to depression has increased and their quality of life has been adversely affected (Cihan & Pirinççi, 2020).

Within the scope of the measures taken with the declaration of a pandemic, the disruption of the flow of daily routine, the fear of being infected, the inability to know how to protect oneself and one's environment, the uncertainty in many areas, and not feeling safe in the living environment revealed the psychological effect of the epidemic as well as the

physiological effect (Cucinotta & Vanelli, 2020). Epidemics, especially pandemics, for which there is no definite information about the treatment like COVID-19, increase the fear, anxiety, and anxiety levels of societies due to the uncertainty they carry (Doğan & Düzel, 2020). The reason for the fear and stress experienced due to the COVID-19 epidemic can be explained as the usual reactions of the disease to an extraordinary situation encountered for the first time (Sümer, 2020). Anxiety, the feeling of not being able to cope, depression, anxiety and uneasiness about getting harmed of oneself and loved ones, and changes in rituals are also observed during epidemics (Oflaz, 2008). The main concern of individuals in the epidemic mostly includes their suspicions that they, their families, and loved ones will contract the disease. Fear is described as unpleasant warnings that make the person feel insecure and threaten the person's life and environment. Increases and changes in the number of positive cases and loss of life reveal the fear which is the psychological aspect of the COVID-19 epidemic (Pakpour & Griffiths, 2020).

Due to human transmission of the virus in the COVID-19 epidemic, reactions such as fear of entering crowded environments like shopping malls, markets, etc., fear of entering environments with a high risk of encountering infected people like hospitals, and anxiety about approaching people have arisen (Doğan & Düzel, 2020). Fear is the basic defence mechanism for survival and biological preparation processes are needed to respond to threatening events, but if fear becomes uncontrollable, results that threaten the mental health of individuals may begin to occur (Mercanlıoğlu et al., 2021). The fear of COVID-19 may not be seen in the same trait in everyone, this may be because not everyone has the same personality traits. Personality is all of the features that the individual is born with or acquired later and distinguishes one from others (Soba et al., 2019). Some studies have explored personality's health behaviours such as social distancing and hygiene (Abdelrahman, 2020) and adherence to restrictions (Zajenkowski et al., 2020) but have not addressed the influence of personality traits. In this context, the aim of this study is to reveal how the personality type of SS students affects their fear of COVID-19 in terms of some variables.

Methodology

Research Design

The model of this research is the “correlational, screening model”. In the correlational model, it is tried to determine whether the variables change together and how this happens if they do not change (Karasar, 2011).

Participants

272 (female:115, male:157) undergraduate students continuing their education in Sports Sciences participated in the research. The participants' mean age is (22.95±4.78), height average (172.06±8.63), weight average (66.06±12.66), and BMI average (22.30±3.73). 42.28% of the participants are from the department of Coaching, 25.73% from Sports Management, 22.42% from Physical Education and Sports Teaching, and 9.55% from Recreation students**.**

Instruments

Coronavirus-19 Fear Scale. This scale was developed by Ahorsu et al. (2020) in 2020 and consists of 7 items, all of which are collected in one dimension. Artan et al. (2021) conducted the validity and reliability study. Each item in the scale was designed in a 5-point Likert type. There is no reverse-scored item on the scale. Rising scores on the scale indicate that the participant's level of fear about COVID-19 has increased. The item-factor loads of the original scale were between 0.66 and 0.74; adjusted item-total correlations varied between 0.47 and 0.56 and these were found to be within the acceptable range. The Cronbach's Alpha internal consistency coefficient of the original scale was found to be 0.82. In this study, the Cronbach's Alpha internal consistency coefficient of the scale was found to be 0.68.

5-Factor Personality Traits Scale. Five-Factor Personality Scale: A ten-item scale developed by Gosling et al. and based on the five-factor model of personality was used (Gosling et al., 2003). The five-factor personality scale is preferred because it integrates personality structures, examines the correlation between personality traits and behaviours, and limits personality to five sub-factors (Tutar, 2016). A five-interval Likert-type scale was used for the answers to the statements in the scales. It has been demonstrated that the five-

factor personality scale, which is the most comprehensive definition of personality, consists of five sub-dimensions and includes two items for each sub-dimension, is a valid and reliable measurement tool in Turkish culture and can be used to measure personality by adapting it to Turkish culture (Atak, 2013). The Cronbach's Alpha reliability coefficient of all five-factor personality scales (Openness to Experience; 0.89, Dovishness; 0.87, Neuroticism; 0.89, Self-control; 0.87, and Extroversion; 0.88) indicates acceptable reliability of the scale. In this study, the McDonald's ω reliability coefficient of the scale was 0.31; 0.62 for the extroversion sub-dimension, 0.60 for the dovishness sub-dimension, 0.65 for the self-control sub-dimension, 0.63 for the neurotic sub-dimension, and 0.63 for the openness to experience sub-dimension.

Statistical analysis

The obtained data were analysed in Jamovi 2.0.0 statistical software program with 95% confidence interval and 5% margin of error. Mean ($\bar{x}$), standard deviation (sd), frequency (f) and percentage values (%) were used to determine the descriptive statistics of the participants. Since the data did not show normal distribution in the study, Mann Whitney U test was used for pairwise comparisons, Regression analysis was used for comparisons of more than two variables, and Spearman's rho correlation test was used for the relationship.

Ethical criteria

The ethical permissions required for the study were obtained by the decision of Karamanoğlu Mehmetbey University Scientific Research and Publication Ethics Committee dated 07/09/2021 dated 123.

Results

The percentage and frequency values of the descriptive statistics of the participants are given in Table 1. The mean and standard deviation values of the COVID-19 fear scores of the participants and their personality type characteristics are given in Table 2. Table 3 shows the test results of the participants related to their coronavirus fears. In Table 4, the test results of the relationship between the participants' Coronavirus fear scores and personality types are given. In Table 5, the Coronavirus fear scores of the participants gave the Man

Whitney U test results. Finally, in table 6, the results of the personality type regression test of the participants are given.

Table 1
Percentage and frequency values of the descriptive statistics of the participants

		Yes		No	
	N	**f**	**%**	**f**	**%**
Smoking		81	29.78	191	70.22
Chronic disease		11	4.04	261	95.96
COVID-19 disease	272	58	21.32	214	78.68
COVID-19-DF		119	43.75	153	56.25
Switch to face-to-face education?		205	75.37	67	24.63

DF: disease in any of their families

When Table 1 is examined, it has been observed that 70.22% of the participants did not smoke, 95.96% did not have a chronic disease, 78.68% did not have COVID-19 disease, 56.25% did not have COVID-19 disease in any of their families, and 75.37% of the participants wanted to switch to face-to-face education.

Table 2
Min, max, item mean and standard deviation values of the participants

	N	**Mean**	**Std. Dev.**	**İtem Ave.**	**Min**	**Max**
Extroversion	272	5.75	1.06	5.75	2	10
Dovishness	272	6.93	1.48	6.93	2	10
Self-control	272	6.34	1.17	6.33	2	10
Neurotic	272	7.06	1.28	7.06	4	10
Openness to experience	272	6.48	1.29	6.48	2	10
Personality types score	272	32.56	3.35	32.6	20	48
COVID-19 fear score averages	272	13.65	6.01	13.7	7	35

When Table 2 is examined, the personality types mean scores of the participants are respectively; neurotic personality type averages (7.06±1.28), dovishness personality type averages (6.93±1.48), openness to experience personality type averages (6.48±1.29), self-control personality type averages (6.34±1.17) and extroversion personality type averages (5.75±1.06) values. The total score averages of the participants' personality types are (32.56±3.35) and the COVID-19 fear score averages (13.65±6.01).

Table 3
Participants' fears of Coronavirus and descriptive variables Pearson Correlation test results

		Gender	**Smoking**	**COVID-19-DF**
Score of Coronavirus fear	r	.-251	.146	.129
	p	0.0001***	0.01*	0.032*

*p<0.05, ***p<0.001, *DF: disease in any of their families*

When Table 3 is examined, there is a statistically significant negative correlation between the participants' total score of Coronavirus fear and gender (r=-.251, p<0.001). There is a statistically significant positive high correlation between the participants' total score of fear of Coronavirus and smoking (r=.146, p<0.05). There is a statistically significant positive high correlation between the participants' total Coronavirus score and their family members having COVID-19 (r=.129, p<0.05).

Table 4
Coronavirus Fear and Personality Types of Participants Pearson Correlation test results

		Extroversion	**Dovishness**	**Self-control**	**Neuroticism**	**Open to experience**
Coronavirus fear	r	-.011	.062	.123	-.141	-.062
	p	0.85	0.30	0.04*	0.01*	0.30

*p<0.05

When Table 4 is examined, there is a statistically significant positive high correlation between the participants' total score of Coronavirus fear and self-control personality type

(r=.123, p<0.05). There is a statistically significant and negative high correlation between the participants' total score of Coronavirus fear and Neuroticism personality type (r=-.141, p<0.05). There is no statistically significant relationship between the participants' total score of Coronavirus fear and personality types of extroversion, dovishness, and openness to experience (p>0.05).

Table 5
Participants' Coronavirus Fear scores and Man Whitney U test results

		N	Mean	Median	Std.Dev.	U	P
Gender	Women	115	14.9	14.0	5.29	6382	0.00***
	Man	157	12.8	11.0	6.34		
Smoking	Yes	81	12.7	11.0	6.29	6314	0.016*
	No	191	14.1	13.0	5.85		
COVID-19- DF	Yes	119	12.8	11.0	5.69	7733	0.033*
	No	153	14.3	14.0	6.18		

*p<0.05, ***p<0.001, *DF: disease in any of their families*

When Table 5 is examined, the Coronavirus fear scores of women (14.9±5.29) according to gender variable are statistically significant compared to the averages of men (12.8±6.34) (p<0.001). According to the smoking variable of the participants, the Coronavirus fear scores of the non-smokers (12.7±6.29) are statistically significant compared to the averages of the smokers (14.1±5.85) (p<0.05). According to the variable of having COVID-19 in the family of the participants, the Coronavirus fear scores of those who have not had the disease in their family (14.3±6.18) are statistically significant compared to the averages of those who have had the disease in their families (12.8±5.69) (p<0.05).

Table 6
Personality types of the participants Regression test results

	Predictor	Estimate	SE	t	p	R^2
Openness to experience	Intercept [a]	6.29312	0.23	27.463		
	Gender				0.02*	0.0217
	Men- Women	0.37782	0.16	2.369		
Dovishness	Intercept [a]	6.75159	0.24	28.634		
	COVID-19-DF				0.04*	0.0159
	No– Yes	0.37871	0.18	2.081		
Neuroticism	Intercept [a]	7.1917	0.20	35.27		
	Smoking				0.04*	0.0252
	Yes- No	0.3535	0.17	2.08		

*p<0.05, *DF: disease in any of their families*

When Table 6 is examined, it is seen that openness to experience personality type is statistically significantly affected by men (0.37782) compared to women ($p<0.05$, $R^2=0.0217$). In the comparison of the family status of the participants with COVID-19 disease, it is seen that the dovishness personality type is statistically significantly affected at a rate (0.37871) of those who have not had COVID-19 disease in their family compared to those who have had the disease ($p<0.05$, $R^2=0.0159$). In the comparison of the smoking use of the participants, it is seen that smokers have a statistically significant effect on the neuroticism personality type compared to the non-smokers (0.3535) (($p<0.05$, $R^2=0.0252$).

Discussion

The following results were obtained in the study in which the relationship between the fears of Coronavirus and personality types of Sports Science students during the COVID-19 pandemic was investigated. In our study, it was determined that the highest average in the personality type scores of the students was in the 'Neurotic' personality type, and the lowest average was in the “Extroversion” personality type. The Coronavirus total scores of the students have a positive relationship with the 'Self-Regulation' personality type and a negative relationship with the “Neurotic” personality type.

During the COVID-19 epidemic, many factors such as the adoption of protective behaviours, psychological and physiological well-being are affected by individual differences such as personality (Yiğitol & Büyükmumcu, 2021). Individuals with a highly neurotic personality type tend to perceive events as highly threatening and generally have limited problem-solving, self-control, and perceived competence (Ebstrup et al., 2011). It has been found that neuroticism significantly predicts fear of COVID-19, and people with high neuroticism scores tend to experience higher levels of fear (Günaydın, 2021). A recent COVID-19 study also reported that people with high neuroticism experienced more adverse effects in their daily lives during the pandemic (Kroencke et al., 2020). Neuroticism also emerges as the most relevant predictor of health behaviours (Aschwanden et al., 2019; Emilsson et al., 2020).

It has been observed that people with high neuroticism experience more chronic negative emotions, give intense reactions especially to negative events, and rely more on emotion-focused coping strategies than problem-focused coping strategies (Carver & Connor-Smith, 2010; Luhmann & Bayram, 2009). In a study by Blagov (2020), individuals with low extroversion and high neurotic personality types were found to comply with hygiene and social distance rules. In other similar studies, they concluded that compliance with social distance rules is associated with a high neurotic personality type (Abdelrahman, 2020; Nofal et al., 2020). The results of these studies support our results.

It suggests that people with high self-control may be sensitive to threats, so threatening environments such as COVID-19 can be a motivating factor for action. The COVID-19 pandemic has presented individuals with many self-control conflicts; people staying at home and not gathering at social events have led to unconventional behaviours such as maintaining social distance with people and wearing masks in public. It can be said that following these guidelines is related to the self-control personality type. Recent research shows that adherence to epidemic-related health behaviours requires self-control (Wolff et al., 2020) and is often associated with negative and deterrent experiences (Brooks et al., 2020).

Studies have also shown that self-control is positively associated with indicators of following careful rules such as social distance, hand washing, and stocking up (Carvalho et

al., 2020; Garbe et al., 2020). However, extroverts are known to seek opportunities for social stimulation and relating to others (Carvalho et al., 2020). It, therefore, suggests that it may be difficult for extroverts to take preventive COVID-19 measures. In our study, it can be said that those with lower extroversion are compatible with COVID-19 containment measures. In addition, the fact that students have the highest average in the "Neurotic" personality type in our study can be explained by the fact that the COVID-19 epidemic process makes individuals more vulnerable to psychological distress (Taylor, 2019). These results support the result of our study.

In this study, it has been determined that the students' total scores on the Coronavirus are at a moderate level and that there is a relationship between this fear and the gender of the students, smoking and having a family history of COVID-19 disease. Women are more afraid of the Coronavirus than men, non-smokers than smokers, and those who do not have a family history of COVID-19 are more afraid of Coronavirus than those who do. It can be said that during the pandemic, women are more afraid of the COVID-19 pandemic than men (Alsharawy et al., 2021; Altundağ, 2021). It is stated that the mean COVID-19 fear score is related to gender (Karataş & Uzun, 2021), the COVID-19 fear score increase in women (83.5%) is higher than men (35%) (Cerda and Garcia, 2021), and that women are more dependent on the isolation rules (Kowalczuk & Gebski, 2021). There are also similar studies in which women report more emotional distress and negative thoughts about COVID-19 than men (Kaçoğlu et al., 2021; Liu et al., 2020; Park et al., 2020; Wang et al., 2020). Women report greater affect intensity and may experience negative emotions such as fear. The results of these studies are in line with the result of our study that the Coronavirus fear scores were higher in women.

It is known that healthy individuals have a fear of coming into contact with people who have COVID-19 disease (Lin et al., 2020). During the pandemic period, chronic disease status and the possibility of transmission in the family have become a predictor of fear (Cerda & Garcia, 2021). In the study of Gencer, (2020); it has been observed that the participants experienced a moderate level of fear of Coronavirus, women's fear of Coronavirus was higher than men; according to the presence of a chronic disease, there was no significant difference in the level of fear of COVID-19 of the participants. In the study of Duman, (2020); it has

been reported that students are moderately afraid of Coronavirus. In addition, the fear levels of the students who lost a relative due to the Coronavirus were found to be significantly higher than the students who did not experience loss.

In another similar study, it was concluded that university students whose relatives had the disease had a high level of anxiety (Cao et al., 2020). In another study, it was reported that there is a significant relationship between health anxiety and COVID-19 anxiety (Jungmann & Witthöft, 2020). In another similar study, a relationship was found between the fear of catching COVID-19 and the fact that individuals are in a certain risk group (Mertens et al., 2020). There are studies indicating that fear of getting sick is related to the perceived risk for your loved ones, health anxiety, and fear of being infected (Mertens et al., 2020; Özdin & Özdin, 2020). In the study of Bakioglu et al. (2020), it was determined that the COVID-19 fear scores of women were significantly higher than men, and those with the chronic disease compared to those with no chronic disease. These results support the relationship between fears of Coronavirus and the family history of COVID-19 in our study.

COVID-19 pandemic may sensitize people to the importance of health and enable them to exhibit healthier behaviours (Lopez-Bueno et al., 2020). In a recent study, it has been found that current smoking is associated with increased disease severity in COVID-19 patients, and they are twice as likely to be under threat than non-smokers (Reddy et al., 2020; Zhao et al., 2020). Özçelik and Kara (2020) found that the rate of patients who applied to the smoking cessation clinic due to the impact of the COVID-19 epidemic (Corona phobia), and the rate of patients who quit or reduced smoking due to the fear of getting sick were 15%, 67.5% of the patients did not change, and the rate of patients whose smoking increased was 17.5%. In the study by Grogan et al. (2020), it has been observed that smokers have reduced or quit smoking due to health concerns in response to the potential threat of COVID-19. In our study, the relationship between fear of Coronavirus and smokers may predict that there may be a change in cigarette use with the increase in the level of fear of the students.

For the other hand, students who do not have a family history of COVID-19 have a more 'dovishness' personality type than students who have had the disease. Students who smoke have more 'Neurotic' personality type than students who do not smoke. Openness to experience and neuroticism are generally associated with taking precautions (Liu et al.,

2021). Individuals who are open to experiences are described as intelligent, creative, knowledgeable, cultured, researcher, dreamer, enlightened, independent, broad-minded (Somer, 1998). An individual who is open to experience is open-minded, has less fear, and has a high sense of curiosity, which is associated with less depression and anxiety (Li et al., 2021). Individuals with high neuroticism tend to be physically inactive, drink more alcohol (Sutin et al., 2016; Wilson & Dishman, 2015), and smoke more (Hakulinen et al., 2015; Terracciano & Costa, 2004). It has been concluded that higher use of health services in individuals with high neurotic personality type (Cuijpers et al., 2010) and some preventive screenings are associated with this condition (Aschwanden et al., 2019).

For the other hand, in a 10-year longitudinal study of US adults, they observed that personality factors, and smoking; high levels of neuroticism, and openness to experience were associated with a lifetime smoking history (Zvolensky et al., 2015). In the study of Bogg and Milad (2020), lower neuroticism and openness to experience were associated with greater adherence to COVID-19 guidelines. In the study of Rettew et al. (2021), university students' openness to experience personality type was positively associated with anxiety related to COVID-19. According to the results of the study, it was stated that people who are extremely open to experiences may be more open to being risky in terms of socio-health during the pandemic period and may think more about the possible threats of the virus. In the study of Nikčević et al. (2021), it has been concluded that there is a positive link between openness to experience and COVID-19 anxiety syndrome. These results contain similar results to the results of our study.

Some people are temperamentally more docile and flexible than other people (Topçu, 2017). While individuals who grow up in cold climates have a harder and duller temperament, people in hot climates have a quicker emotional attitude and are soft-tempered (Bozkurt, 2006). Lakuta (2019) has stated in his study that high levels of dovishness are uniquely predictive of higher social anxiety symptoms. When the literature was examined, a limited number of studies were found in which the fear of COVID-19 was associated with the dovishness personality type. We think that this situation is due to the fact that the majority of the student group in our study live in the Mediterranean region of Turkey, which has a

warm climate. In addition, it can be thought that students who do not have COVID-19 disease in their families may experience anxiety as well as fear.

Limitations of the study

In the scope of this study, other factors affecting personality type (individual/team sports) were not mentioned. The determination of the personality type of the participants is based on the result of the 5-factor personality type scale. The clinic was not determined by a psychologist or a specialist.

Conclusion

As a result, students' fear of COVID-19 is affected by the variables of personality type, gender, smoking and having a family member with COVID-19. Considering the age group of the students, it is believed that witnessing an epidemic such as Covid-19 for the first time, which concerns not only themselves, but also their families and the whole world, affects the outcome. It is a question mark to what extent this situation will affect the fear of COVID-19 that will occur in every student and their future lives besides their daily life.

In this respect, future studies can also investigate the changing lives of students during the COVID-19 pandemic, the strategies they developed to cope with their fears of COVID-19, whether their spiritual beliefs affect fear and whether they experience personality changes. In addition, it can be investigated to what extent the sports branches of the students are related to their personality types and the positive or negative effects of being involved in sports on the fear of COVID-19. The fact that the geographies in which the participants grew up are different suggests that the personality types of the students may also be different.

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