INVESTIGATION OF THE RELATIONSHIP BETWEEN ATHLETES' ANXIETY ABOUT CATCHING CORONAVIRUS (COVID-19) AND THEIR ATTITUDES TOWARDS NUTRITION

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ABSTRACT

The emergence of the Covid-19 pandemic in China, it has become an important public health problem globally, causing many organizations to be canceled, education and workplace restrictions, and curfews to be declared. This study aims to determine the relationship between the anxiety of catching Covid-19 in athletes and their attitudes towards nutrition. The study group consists of 227 athletes studying in the field of sports sciences. To determine the demographic information of the athletes in the research, "Personal Information Form", "Scale of Athletes' Anxiety of catching New Type Coronavirus (Covid-19)" and "Attitude Scale towards Healthy Eating" were used. In the analysis of the data, distribution characteristics were determined and the suitability of parametric tests was reviewed, independent sample t-test, ANOVA test, Pearson correlation analysis, and simple linear regression analysis were used to determine the relationship between variables. It is seen that those who have sufficient knowledge about Covid-19 have higher average scores on knowledge about nutrition, positive nutrition, and nutrition than those who do not have sufficient knowledge. It has been determined that there are negative significant relationships between the individual anxiety, socialization anxiety, and total anxiety of catching Covid-19 of the athletes and their attitudes towards nutrition detected.

Keywords: Anxiety, Athlete, Covid-19, Nutrition

INTRODUCTION

From the past to the present, it has been observed that there have been many different pandemics that have negatively affected societies and reached international dimensions, causing significant health problems [1]. The latest of these epidemics is the Covid-19 pandemic, which has recently emerged and has become a global public health problem.

The Covid virus, which emerged in Wuhan, China in December 2019, has started to spread all over the world over time. Due to the high rate of transmission of the Covid virus, a pandemic was declared by the World Health Organization on March 11 and the world took action [2]. With the onset of this mobility, fear and anxiety began to affect individuals [3]. With the unpredictability of how long the pandemic process will continue and the continuation of high death rates, governments have taken some measures to control the spread of the virus [4, 5]. Social distance, use of masks, travel restrictions, stopping sports

organizations, declaring curfews are among the measures taken [6, 7]. Postponing the Tokyo Olympics, which is one of the most important sports organizations, can be shown as an example of many negative effects on athletes [8]. Such negativities have left individuals in the field of sports faced with various negative emotional states such as anxiety [9]. Anxiety is the uncertainty of the individual's perspective towards the future and the uneasiness, worry, fear, etc. experienced due to different reasons. It is a mental or psychological state resulting from negative emotional states [10-12]. In addition to the radical decisions taken in the field of sports during the Covid epidemic, athletes, coaches, managers, etc. The statements of the stakeholders and the news of various deaths negatively affect the level of anxiety in the sports world. However, it is known that individuals engaged in sports activities are both physically and mentally healthier [13]. In addition, it is stated that regular physical activity causes positive effects on the psychology of individuals and is an important factor in preventing negative emotional states such as anxiety [14, 15].

The precautions are taken due to the virus cause individuals' eating habits to change and weight gain [16]. Although the World Health Organization and the Ministry of Health emphasize adequate and balanced nutrition to prevent sensitivity and long-term complications that may occur due to Covid, individuals' preference for ready-made and long-term non-perishable products during the pandemic causes the consumption of unhealthy foods to increase and the increase in fat mass may become permanent [17, 18]. It is seen that athletes are among the groups most affected by this process. Weight control is difficult because these individuals do sports regularly, consume high-calorie foods, and are used to losing calories in training [19-21].

It is known that it is important to determine the anxiety levels of individuals who do active sports about catching Covid, and this level of anxiety triggers many negative habits along with the changes in the attitudes of individuals towards nutrition [9]. This study, it was aimed to examine the relationship of the Covid-19 pandemic between the anxiety of catching Covid-19 in athletes and their attitudes towards nutrition.

MATERIALS AND METHODS
An "Ethics Committee Report" dated 14.07.2021 and decision number 2021/21-23 was received from Dokuz Eylül University Non-Interventional Research Ethics Committee for the realization of the study.

Model of the Research
The relational survey model, which is one of the quantitative research types, was used in the research.

Research Group
The study group of the research consisted of 227 (144 male, 83 female) university students selected by simple random method studying in the field of sports sciences.

In the study, the scales were sent to university students who were doing sports due to the Covid 19 pandemic, via "Google Forms", and the data were collected voluntarily by adding the explanations that the information they provided would not be used outside the study.

Data Collection Tools
In the study, the "Personal Information Form", "Athletes' Anxiety of Catching New Types of Coronavirus (Covid-19) Scale-AACNTC" and "Attitude Scale to Healthy Eating" created by the researchers to determine the demographic characteristics of the athletes (gender, knowledge level about covid, height, weight) -ASHE" is used.
Athletes' Anxiety of catching New Type Coronavirus (Covid-19) Scale- AACNTC: It is a 5-point Likert-type scale consisting of 16 items and 2 sub-dimensions developed by Tekkurşun Demir, Cicioğlu, and İlhan (2020) [9]. "Attitude Scale Towards Healthy Eating-ASTHE": It is a 5-point Likert-type scale consisting of 21 items and 4 sub-dimensions developed by Tekkurşun Demir and Cicioğlu (2019) [22].
When the reliability analyzes of the scales and their sub-dimensions were examined in this study, the values for AACNTC were between (α: 0.86) and (α: 0.90); It is seen that the values for ASTHE vary between (α: 0.70) and (α: 0.84). It is stated that Cronbach's Alpha values above α: 0.70 are sufficient for the reliability of the scale [23, 24].

Analysis of Data
In the research, descriptive analyzes were included to determine the demographic characteristics of the athletes and to examine their distribution to the groups. Afterward, normality analyses and homogeneity tests were applied to determine the suitability of the data for parametric analysis. As a

Table 1: Demographic characteristics of athletes

Variable	Group	Frequency (n)	Percent (%)
Gender	Women	83	36.6
	Men	144	63.4
Sufficient Information About Covid	Women	187	82.4
	Men	40	17.6
BMI	Weak	20	8.8
	Normal	186	81.9
	Fat	21	9.3

Body mass index: BMI

result of the analysis, it is seen that the skewness values vary between -.743 and .012, and the kurtosis values vary between -.737 and .187. As a result, Independent Sample t-Test for pairwise group comparisons; In the comparisons of more than two groups and in cases where homogeneity was achieved, One-Factor Analysis of Variance (One Way Anova) was applied, and in cases where homogeneity could not be achieved, the Welch test was applied. In the research, all analyzes were made with the IBM SPSS 25 program and the data were evaluated at the p< .05 level.

RESULTS

63.4% of the athletes participating in the research are male and 36.6% are female; It was determined that 82.4% had sufficient information about covid, while 17.6% did not have enough information. Finally, it was determined that 81.9% of the athletes were normal, 9.3% were overweight and 8.8% were underweight.

In the analysis performed to compare the total and subdimension mean scores of AASCNTC and ASTHE according to the gender of the athletes, it is seen that there is no statistically significant difference in the total and subdimension mean scores of the scales according to the gender of the athletes (p>.05). As a result of the analysis made in data the mean score of those who have sufficient knowledge about Covid in the NI subdimension is significantly higher than the mean score of those who do not have enough information. The mean score of those who have sufficient knowledge in the PN subdimension is significantly higher than the mean score of those who do not have enough information, and the total score of ASTHE. It is seen that the mean score of those who have sufficient knowledge about the subject is significantly higher than the mean score of those who do not (p<.05). However, it was determined that there

Table 2: Comparison of AACNTC and ASTHE Status of Athletes by Gender

Variable	Group	n	$\overline{X}$	Ss	t	p
Individual Anxiety	Women	83	41.07	10.86	1.591	.114
	Men	144	38.82	9.05		
Socialization Anxiety	Women	83	16.86	5.97	.548	.585
	Men	144	16.43	5.18		
AASCNTC Total	Women	83	57.93	15.35	1.348	.180
	Men	144	55.26	12.59		
NI	Women	83	22.62	2.81	1.582	.115
	Men	144	21.98	3.00		
EN	Women	83	17.78	5.33	-1.397	.165
	Men	144	18.75	4.43		
PN	Women	83	19.80	3.94	-.288	.774
	Men	144	19.95	3.44		
M	Women	83	20.18	4.11	.975	.331
	Men	144	19.61	4.22		
ASTHE Total	Women	83	80.39	10.74	.063	.950
	Men	144	80.30	10.40		

p<.05* *AASCNTC: Athletes' Anxiety Scale for Catching New Type of Coronavirus (Covid-19),* **NI:** *Nutrition Information*, **EN:** *Emotion to Nutrition,* **PN:** *Positive Nutrition,* **M:** *Malnutrition,* **ASTHE:** *Attitude Scale Towards Healthy Eating*

Table 3: Comparison of AASCNTC and ASTHE Situations According to Athletes Having Sufficient Knowledge About Covid

Variable	Sufficient Information	n	$\overline{X}$	Ss	t	p
Individual Anxiety	Yes	187	39.11	10.00	-1.771	.078
	No	40	42.12	8.42		
Socialization Anxiety	Yes	187	16.32	5.68	-1.942	.056
	No	40	17.85	4.20		
AASCNTC Total	Yes	187	55.44	14.15	-1.910	.057
	No	40	59.97	10.69		
NI	Yes	187	22.56	2.89	3.953	**.000***
	No	40	20.00	2.66		
EN	Yes	187	18.66	4.81	1.859	.064
	No	40	17.12	4.53		
PN	Yes	187	20.22	3.62	3.029	**.003***
	No	40	18.35	3.24		
M	Yes	187	20.03	4.12	1.627	.105
	No	40	18.85	4.36		
ASTHE Total	Yes	187	81.49	10.50	4.140	**.000***
	No	40	74.92	8.78		

p<.05* ***AASCNTC:*** *Athletes' Anxiety Scale for Catching New Type of Coronavirus (Covid-19),* ***ASTHE:*** *Attitude Scale Towards Healthy Eating*

was no statistically significant difference between the mean scores of the groups in the total and sub-dimensions of AASCNTC and the sub-dimensions of EN and M (p>.05).

As a result of the test performed in Table 4, it was determined that there were statistically significant differences in the individual anxiety sub-dimension, sub-dimension, and total ASTHE score averages according to the BMI groups (p<.05). According to the Bonferroni result, it was determined that the averages of underweight individuals in the Individual anxiety subdimension were higher than the averages of those with a normal weight. The averages of those who were underweight in the M subdimension were higher than the averages of those who were overweight, and that the averages of the normal-weighted subjects were higher than the averages of the overweight subjects in the ASTHE Total score. As a result of the comparison of socialization anxiety, AASCNTC Total, EN, and PN sub-dimensions, and BMI groups, it is seen that there is no statistically significant difference between the averages of the groups (p>.05).

WELCH test was used instead of ANOVA analysis since homogeneity of variances could not be achieved in comparing NI subdimension averages according to BMI of athletes. As a result of the analysis, it was determined that there was no statistically significant difference between the groups (p>.05).

Pearson Correlation analysis was carried out to determine the relationship between the total and sub-dimensions of the athletes' AASCNTC and ASTHE. According to the results of the analysis, it was observed that there were negative and low-level significant relationships between individual anxiety and ASTHE, between socialization anxiety and ASTHE, and between AASCNTC Total and ASTHE. It was determined that if there is an increase in the AASCNTC total and sub-dimensions, there will be a decrease in ASTHE.

As a result of the regression analysis, when the significance level corresponding to the F value was examined, it was determined that the model was statistically significant (F: 12.273, p<.05). When the beta, t, and p values of the independent variable (AASCNTC) were examined, it was determined that AASCNTC had a significant effect on the level of ASTHE (t: -3.503, p<.05). According to this result, it is seen that AASCNTC explains 5.2% of the change in AASCNTC. In addition, it has been determined that a one-unit increase in the AASCNTC levels of the athletes will cause a decrease of -.227 in the ASTHE (β: .-227).

DISCUSSION

The main findings of this study; our data showed that much anxiety level as the athletes has been knowledge about covid 19 than unknowledged

Table 4: Comparison of AASCNTC and ASTHE by BMI of Athletes

Variable	BMI	n	$\bar{X}$	Ss	F	p	Bonferroni
Individual Anxiety	Weak (a)	20	44.95	7.85			
	Normal (b)	186	39.10	10.12	3.289	**.039***	**a>b**
	Fat (c)	21	39.42	6.76			
Socialization Anxiety	Weak (a)	20	17.90	4.65			
	Normal (b)	186	16.45	5.58	.625	.536	-
	Fat (c)	21	16.57	5.24			
AASCNTC Total	Weak (a)	20	62.85	11.28			
	Normal (b)	186	55.55	14.17	2.598	.077	-
	Fat (c)	21	56.00	9.67			
EN	Weak (a)	20	19.60	4.47			
	Normal (b)	186	18.37	4.83	1.062	.348	-
	Fat (c)	21	17.42	4.68			
PN	Weak (a)	20	18.30	4.69			
	Normal (b)	186	20.10	3.48	2.365	.096	-
	Fat (c)	21	19.57	3.48			
M	Weak (a)	20	20.75	4.45			
	Normal (b)	186	20.06	3.98	6.755	**.001***	**a>c**
	Fat (c)	21	16.76	4.57			
ASTHE Total	Weak (a)	20	81.10	10.09			
	Normal (b)	186	80.85	10.48	2.990	**.052***	**b>c**
	Fat (c)	21	75.04	10.06			
Variable	BMI	n	$\bar{X}$	Ss	Welch/F	p	Tamhane's
NI	Weak (a)	20	22.45	3.81			
	Normal (b)	186	22.30	2.88	1.511	.236	-
	Fat (c)	21	21.28	2.51			

p<.05* **AASCNTC:** *Athletes' Anxiety Scale for Catching New Type of Coronavirus (Covid-19),* **ASTHE:** *Attitude Scale Towards Healthy Eating*

athletes group. Additionally female athletes have more anxiety scores than male athletes.

It is seen that most of the athletes have sufficient knowledge about Covid. In the study conducted by Seçer and Tozoğlu (2021), it is seen that most of the athletes have enough information about the virus [25]. Although there is no significant difference when

Table 5: The Relationship Between AASCNTC and ASTHE

Variable		SBTİÖ
Individual Anxiety	r	-.193
	p	**.004***
Socialization Anxiety	r	-.224
	p	**.001***
AASCNTC Total	r	-.227
	p	**.001***

p<.05* **AASCNTC:** *Athletes' Anxiety Scale for Catching New Type of Coronavirus (Covid-19),* **ASTHE:** *Attitude Scale Towards Healthy Eating*

comparing the anxiety of the athletes about catching the virus according to their status of having sufficient knowledge about Covid, it has been determined that those who do not know about the virus have more anxiety about catching the virus. It is thought that this result is caused by the fact that individuals who do not have sufficient knowledge about the subject do not know how to protect themselves from the virus. When comparing the attitudes of the athletes towards healthy nutrition according to their status of having sufficient knowledge, it is seen that the average score of those who have sufficient knowledge is high. In the study conducted by Mor, Acar, and Arslanoğlu (2020), it is stated that regular nutrition programs are very important in keeping athletes healthy and preventing poor performance [26]. In addition to the measures taken by governments during the Covid pandemic period, there are also measures that people should take [27]. All individuals make an effort

Table 6: Regression Analysis to Determine the Effect of AASCNTC on ASTHE

Variable	B	Standard Mistake	β	t	p	F	Model (p)	R²	Durbin Watson
(Constant)	90.153	2.883		31.271	.000*	12.273	.001*	.052	2.122
AASCNTC	-.174	.050	-.227	-3.503	.001*				

AASCNTC: Athletes' Anxiety Scale for Catching New Type of Coronavirus (Covid-19), ASTHE: Attitude Scale Towards Healthy Eating

to combat the negative situation brought about by this process.

Batu reported that (2020) the anxiety of swimming athletes catching Covid, it was determined that the anxiety levels of female athletes were higher than male athletes [28]. In the study, it was seen that there was no significant difference in the anxiety scores of the athletes when comparing the anxiety of catching Covid by gender, but the average score of women was higher than that of men. Individuals who do sports regularly [29], active athletes during the pandemic period [30], amateur and professional athletes [31], elite athletes, and sedentary people [9], it is seen that similar results have emerged in different studies. When the ASTHE status of the athletes according to their genders was compared, it was determined that there was no statistically significant difference in the total and subdimension mean scores. Although it is known that the Covid pandemic also affects children and young people, the fact that the number of cases is low and that people who show symptoms recover in a short time supports the absence of a significant difference [32].

In the comparison of the anxiety of catching Covid according to BMI, it was determined that the anxiety of catching the virus in the individual anxiety subdimension was statistically significantly higher than those of normal weight. Although there was no significant difference in the socialization anxiety subdimension and the total score, it was determined that underweight people had a higher level of anxiety about catching the virus than other overweight people. Aman and Masood stated tahat (2020), it is stated that the risk of contracting Covid 19 is higher in individuals with weak immunity [33]. Even in short periods, small changes in body weight may become permanent and may also cause weight gain [34]. This result seems to support the results of our study.

The increase in the time spent at home and inactivity during the measures taken has increased the level of anxiety in all individuals, including athletes [35]. Increasing the level of anxiety, suspension of sports organizations, etc. factors cause changes in the diet. In our study, statistically significant differences were observed in the mean scores of the individual anxiety

sub-dimension, M sub-dimension, and ASTHE when the students' BMI and their sub-dimensions were compared with their total and subdimension scores.

As a result of the comparison of AASCNTC total, EN, and PN sub-dimensions and BMI groups, it is seen that there is no statistically significant difference between the mean scores of socialization anxiety. It is known that active athletes are more social with their participation in sports activities [36, 37]. Studies in the literature show that individuals who do active sports have higher socialization scores [38-40]. It can be considered normal to have low socialization anxiety in people who do sports during the pandemic period.

CONCLUSION

When the results of the research are examined, in the AASCNTC and ASTHE of the athletes, females have higher anxiety of catching covid than males according to gender, in the BMI sub-dimension, underweight and overweight people have higher anxiety levels than athletes with normal body weight is seen. These results show that being physically active reduces the anxiety level of catching covid and is a preventive factor against possible psychological traumas. In addition, it has been determined that the level of fear of catching Covid-19 of athletes is an important predictor of their attitudes towards nutrition. We think that these results can be used as a reference value for future studies on athletes.

Based on the results of the research, it is suggested that researchers make different sports activities or resistance exercises and examine the change in the level of anxiety along with the changes in the body structure of the individuals in this process. On the other hand, it is recommended to apply psychological support programs to individuals in this process, to have activities that strengthen their mental structures against such crises, and to reinforce these activities through sportive activities, if possible. It is suggested that the similar research topic should be repeated in the new variant periods of the virus, and the results of the research should be compared with the existing conditions, and the acceptability and compatibility of these situations in terms of psychology should be checked with anxiety experimental or longitudinal

studies. Finally, after the disappearance of the virus or the crisis, a re-examination can be made to control the anxiety situation, and some psychological support can be provided by controlling whether this situation continues as learned helplessness in individuals.

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