

The Effect of Anxiety of Catching Coronavirus on Adherence of Mediterranean Diet and Sleep Quality in Female National Basketball Players of Different Age Groups

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ABSTRACT

Purpose: This study's objective is to look at how the anxiety of catching coronavirus affected the food and sleep habits of female Turkish national basketball players.

Methods: 54 basketball players from the U16, U18, and U20 age divisions of the Turkish women's national team took part in this research. The Athlete's Anxiety to Catch the Novel Coronavirus (Covid-19) Scale (AACNCS), the Mediterranean Diet Adherence Scale, and the Pittsburgh Sleep Quality Index are all included in the questionnaire.

Results: The participants' average age was 16.48 ± 1.50 , with a range of 14 to 20. It was determined that 51.9% (n=28) of the participants were not compatible with the Mediterranean diet, and 75.9% (n=41) had good sleep quality. Although there was no association between the athletes' overall anxiety level and their diet quality, there was a statistically significant but small positive correlation between the AACNCS sub-dimension of "Socialization Anxiety" and diet quality ($r=0.344$; $p=0.011$; $p<0.05$). The athletes' sleep quality and the total AACNCS sub-dimensions showed a weak but significant positive connection ($r=0.358$; $p=0.008$; $p<0.05$).

Conclusion: The athletes who are taking part in the trial to catch Covid-19 may have poorer sleep and better diets as their anxiety levels rise. On this subject, more research is required.

Keywords: Anxiety, Athlete, Covid-19, Diet Quality, Sleep Quality

Farklı Yaş Gruplarındaki Kadın Milli Basketbolcularında Koronavirüse Yakalanma Kaygısının Akdeniz Diyetine Uyum ve Uyku Kalitesine Etkisi

ÖZET

Amaç: Bu çalışmanın amacı; kadın Türk milli basketbolcuların koronavirüse yakalanma kaygılarının diyet ve uyku kalitesine etkisini incelemektir.

Gereç ve Yöntem: Çalışma U16, U18 ve U20 Türk kadın milli takım basketbolcusu olan 54 birey ile yürütülmüştür. Onam formunu okuyarak çalışmaya gönüllü katılım sağlayan sporculara anket formları araştırmacı tarafından yüz yüze uygulanmıştır. Anket; demografik bilgileri, Akdeniz Diyeti Bağlılık Ölçeği'ni, Sporcuların Yeni Tip Koronavirüse (Covid-19) Yakalanma Kaygısı Ölçeği'ni (SYTKYKÖ) ve Pittsburgh Uyku Kalitesi İndeksi'ni içermektedir.

Bulgular: Katılımcıların yaşları 14 ile 20 arasında değişmekte olup ortalaması $16,48 \pm 1,50$ 'dir. Katılımcıların %51,9'unun (n=28) Akdeniz diyetine uyumlu olmadığı, %75,9'unun (n=41) uyku kalitesinin iyi olduğu saptanmıştır. Sporcuların toplam kaygı düzeyiyle diyet kalitesi arasında ilişki saptanmamasına karşın; SYTKYKÖ alt boyutu olan "Sosyalleşme Kaygısı" ile diyet kalitesi arasında zayıf ancak istatistiksel olarak anlamlı ilişkiye ulaşılmıştır ($r=0,344$; $p=0,011$; $p<0,05$). Sporcuların uyku kalitesi ile SYTKYKÖ alt boyutları toplamları arasında zayıf ancak istatistiksel olarak anlamlı ilişkiye ulaşılmıştır ($r=0,358$; $p=0,008$; $p<0,05$).

Sonuç: Çalışmaya katılan sporcuların Covid-19'a yakalanma kaygısı arttıkça uyku kalitesi azalabilmekte ve diyet kaliteleri artabilmektedir. Bu konuyla ilgili daha kapsamlı ileri çalışmalara ihtiyaç bulunmaktadır.

Anahtar kelimeler: Covid-19, Diyet Kalitesi, Kaygı, Uyku Kalitesi, Sporcu

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Received: 21 March 2023

Accepted: 26 June 2023

The Covid-19 pandemic had an impact on the world of sports as it has on all other fields due to the postponing of scheduled sporting events (1). It was announced shortly after that Turkey's sporting events would be played without spectators for a period that all handball, volleyball, basketball, football, and other leagues would be postponed as part of the steps taken to combat the pandemic. Even though the Covid-19 severe pandemic has stopped because to increased vaccination rates and its impacts have lessened, endemic cases and the sporadic use of masks persist, and the pandemic's social repercussions are still felt today.

It has been found that the unpredictability of the pandemic, the cancellation of leagues, the economy, and changes in training regimens have an impact on elite, semi-elite, and recreational athletes' psychological and physical well-being (2). The athletes are reportedly under strain and their physical and emotional recuperation is slowed by taking a break from the leagues for a period before restarting them quickly (3). A consensus statement from the International Olympic Committee (IOC) highlighted the prevalence of mental health issues, such as eating disorders among professional athletes, anxiety, and depression, and the necessity of taking these issues seriously (4). Also noticed is the fact that female athletes report higher levels of anxiousness than male athletes (5). A more sophisticated comprehension of psychology particular to female athletes will be crucial as more women participate in sports at all levels of skill and competitiveness to support their athletic success, injury recovery, and general health and wellness. The social, physical, and mental challenges brought on by the pandemic may put more pressure on athletes, and significant changes to lifestyle, particularly in eating and sleeping patterns, may have an impact on both their health and performance.

In the development, progression, and treatment of mental diseases, nutrition, exercise, and sleep are thought to play a significant influence (6). There are studies showing that insufficient sleep duration and sleep quality are associated with anxiety in athletes, but it has been stated that more comprehensive studies are needed due to the bidirectional relationship (7). However, although there is no study directly examining the effects of the Mediterranean diet on athlete anxiety, it was shown in a systematic review that unhealthy diet negatively affects mental health (8); in another review, increased adherence to the Mediterranean diet improved sleep quality; it has been shown to reduce depression and anxiety (9). While there are studies in the literature examining the effects

of adherence to the Mediterranean diet on mental health and sleep quality in the general population, to our knowledge, there is no study examining the effects of catching coronavirus or any type of anxiety on Mediterranean diet adherence and sleep quality.

This study sought to ascertain the impact of national female athletes' worries about catching the novel coronavirus (Covid-19) during the ongoing pandemic on diet and sleep quality, which are directly related to the athletes' performance output.

METHODS

Turkish women's basketball players from the U16, U18, and U21 age groups make up the research's population. Necessary information was given to the participants about the research, and as a result, 57 female national basketball players were voluntarily included in the research. 54 female national basketball players made up the study's sample, but 3 participants were dropped from it since they didn't entirely fill out the questionnaires.

The "Athlete's Anxiety to Catch the Novel Coronavirus (Covid-19) Scale (AACNCS)" created by Demir et al. (10) was utilized to measure the athletes' levels of anxiety. 16 questions on the scale are related to socialization anxiety (SA) and individual anxiety (IA). The lowest possible score on the AACNCS scale, which measures the total score, is 16, and the maximum possible score is 80. The scale is a five-point likert kind with 16 components.

The "Mediterranean Diet Adherence Scale" (MEDAS), which was created by H. Schröder et al. (11) and validated in Turkish by Pehlivanoglu et al. (12) in 2020, was used. A survey called the MEDAS asks 14 questions about the participants' use of foods. The survey's findings reveal whether the respondent practices a Mediterranean-style diet.

The athletes' sleep quality was assessed using the "Pittsburgh Sleep Quality Index" (PSQI). PSQI is a index which has been developed by Buysse., et al. (13) and validated in Turkish by Ağargün et al. (14). A 19-item self-report index called the PSQI measures how much and how well a person sleeps over the course of a month. Each element is scored between 0 and 3. The overall score is between 0 and 21. "Poor sleep quality" is indicated by a total score higher than 5.

Analysis of Datas

The statistical analysis was performed using the NCSS (Number Cruncher Statistical System) 2007. The following statistical tests were applied: Shapiro-Wilk, Mann-Whitney U, Kruskal-Wallis, and Pearson correlation analysis. The threshold for statistical significance was set at 0.05.

RESULTS

Table 1 shows the relationships between the AACNCS scores and age and BMI. A statistically significant weak correlation was found between the "Individual Anxiety" sub-dimension scores of the participants in the AACNCS and BMI measurements ($r=0.314$; $p=0.021$; $p<0.05$).

Table 1. The relationship between the AACNCS and age and BMI

		AACNCS		
		Individual Anxiety	Socialization Anxiety	Total
Age	r	-0,096	0,066	-0,046
	p	0,490	0,637	0,740
BMI	r	0,314	0,349	0,349
	p	0,021*	0,010*	0,010*

r: Pearson Correlation Test
* $p<0,05$

Table 2 shows the relationship between PSQI and age and BMI. A statistically significant moderate correlation was found between the PSQI and BMI values, with a positive direction ($r=0.425$; $p=0.001$; $p<0.05$). This shows that as BMI increases, sleep quality decreases.

Table 2. The relationship between PSQI and age and BMI

		PSQI	
		r	p
Age	r	-0,248	
	p	0,070	
BMI	r	0,425	
	p	0,001*	

r: Pearson Correlation Test
* $p<0,05$

Table 3 shows the relationships between AACNCS, MEDAS and PSQI. A statistically significant, very weak correlation was found between the MEDAS and the "Socialization

Anxiety", which is the sub-dimension of the AACNCS ($r=0.344$; $p=0.011$; $p<0.05$).

Table 3. The relationship between AACNCS, MEDAS and PSQI

		AACNCS		
		Individual Anxiety	Socialization Anxiety	Anxiety Scale Total Score
MEDAS	r	-0,077	0,344	-0,176
	p	0,582	0,011*	0,202
PSQI	r	0,324	0,351	0,358
	p	0,017*	0,009*	0,008*

There was a weak positive correlation between PSQI and "Individual Anxiety", which is the sub-dimension of AACNCS ($r=0.324$; $p=0.017$; $p<0.05$). A statistically significant weak positive correlation was found between the PSQI and "Socialization Anxiety", which is the sub-dimension of the AACNCS ($r=0.351$; $p=0.009$; $p<0.05$).

A statistically significant weak correlation was found between the totals of the PSQI and the AACNCS sub-dimensions ($r=0.358$; $p=0.008$; $p<0.05$). Therefore, the increase in the anxiety of the athletes about catching the coronavirus deteriorates the sleep quality.

DISCUSSION AND CONCLUSION

It is evident that the most recent Covid-19 quarantine period has negative effects on people's mental health and behavior in addition to their physical health (15). Although prior studies has revealed that a large disaster's longer-lasting psychological effects outweigh its physical effects on people, spending on mental health has often lagged behind (16). Our study is the first to look at the connection between athletes' anxiety about catching coronavirus and the quality of their diet and sleep, despite the fact that there have been recent studies on anxiety, sleep disorders/quality, and dietary practices induced by the Covid-19 pandemic. In our study, we found that as athletes' anxiety about catching coronavirus increased, sleep quality deteriorated, but it was not in a significant relationship with diet quality. In terms of anxiety level and sleep quality, these findings are consistent with the initial premise we put forth.

The majority of athletes exhibit higher symptoms of anxiety, stress, and depression, according to studies conducted during the pandemic. This could be explained by the athletes' shorter and less frequent training sessions during the pandemic. Excessive training load reduction may have negative effects on psychosocial engagement, according to studies (17). Studies also suggest that the combination of social isolation and loneliness with this drop in physical activity can result in an aggravation of depressive symptoms (18). In a study that looked at how the Covid-19 pandemic affected athletes' mental health, it was discovered that athletes had fewer symptoms of anxiety and depression than the non-athlete control group (19). Another study indicated that while adolescent athletes' depression levels were greater, their levels of anxiety and post-traumatic stress disorder were much lower than those of the non-athlete controls (20). Curfews and the delay of sporting events necessitate social withdrawal, but sports organizations and coaches should concentrate on preserving the training schedule and developing possibilities to safeguard mental health, even if they must do so from a distance.

In one of the research evaluating the association between age and the pandemic's anxiety problems, it was found that adolescents in the 12- to 18-year-old age range are more likely to admit to having anxiety and depressive symptoms (21). Another study found that individuals under the age of 18 had a higher risk of psychological discomfort compared to participants in other age groups (22). The AACNCS "Individual Anxiety," "Socialization Anxiety," sub-dimension scores, and the total scores from the scale do not demonstrate a statistically significant link with the age of the athletes taking part in our study ($p>0.05$). Since the age range was narrow in our study (14-20 years), the relationship between age and anxiety about catching coronavirus may not have been significant and should be supported by studies with wide age ranges.

For athletes to maintain their mental health, increase physical performance, and prevent overtraining, they need to get enough sleep—enough sleep that is adequate in terms of duration, timing, and quality. Numerous studies have assessed how much weariness and sleeplessness athletes experience during the pandemic, and they have all found that these issues have risen (23-27). According to Pillay L. et al., female athletes more frequently express a lack of motivation and energy than male athletes (25). Similar to our study, in Mon-Lopez et al.'s study, athletes' sleep quality suffers throughout the pandemic time. (23). In our study, when the relationship between

"Socialization Anxiety" and "Individual Anxiety", which are the sub-dimensions of the AACNCS, and sleep quality is examined, when both anxiety levels of the athletes increase, their sleep quality decreases significantly ($r=0.351$; $p=0.009$; $p<0.05$). In contrast, despite the fact that Facer-Childs E.R. et al. demonstrated a rise in the amount of time spent in bed and total sleep time during the pandemic, the athletes also reported feeling sleepy all day (24). The delay in going to bed during the pandemic process had a negative impact on the athletes' mental health, according to the same study. All of these data point to the urgent need to take into account how Covid-19 and other quarantines may affect athletes and to create plans for improving sleep in this group.

People's eating habits have been impacted by the Covid-19 pandemic. People consumed more calories during quarantine than they did before, and the quality of the items they ate decreased, according to a study done with university students in Spain (28). Interestingly, some adolescents shown a trend toward a healthier diet with quarantine and a notable increase in the frequency of consuming vegetables, fruits, and legumes (29). However, there was no statistically significant correlation between athletes' anxiety levels regarding catching coronavirus and their diet quality in our study. The pandemic's lack of research on dietary habits in athletes limits the elaboration of the discussion.

As a result, it was found in this study that athletes' sleep quality may suffer and their dietary quality may worsen as their anxiety of catching the coronavirus grows. It should be taken into account that in Covid-19 and related pandemics, athletes' mental health may suffer in line with the findings of this study. In addition to maintaining mental health, it may be recommended to get counseling from experts for sleep and diet quality, and to follow the athletes closely by their families, trainers and health team in this process.

DECLARATIONS

Funding

No financial support was received from any person or organization during the study.

Conflict of Interest

No potential conflict of interest was reported by the author(s).

Ethics Approval

The study was approved by Acibadem University and Acibadem Healthcare Institutions Medical Research Ethics Committee, report number of 2022-17/03 (11 November 2022).

Availability of Data and Material

The dataset of this study are available from the corresponding author on a reasonable request.

Author Contributions

Study design: DS, EÖ; Data collection: YAE; Data analysis: DS; manuscript preparation: EÖ, YAE.

Acknowledgement

We thank all the athletes who participated in the study.

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