

## ARAŞTIRMA / RESEARCH

# Determination of COVID-19 Fear and Healthy Lifestyle Behaviors in Faculty of Health Sciences Students: A Cross-Sectional

## Sağlık Bilimleri Fakültesi Öğrencilerinde COVID-19 Korkusu ve Sağlıklı Yaşam Biçimi Davranışlarının Belirlenmesi: Kesitsel Bir Çalışma

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### Abstract

**Objective:** Determining COVID-19 fear, healthy lifestyle behaviors, and affecting factors of faculty of health sciences students during the pandemic process, and investigating the relationship between COVID-19 fear and healthy lifestyle behaviors were aimed in the present study.

**Materials and Methods:** This cross-sectional study was carried out with the participation of 687 university students studying at the faculty of health sciences between December 2020 and February 2021. The data were obtained by online survey method using a structured information form, the Healthy Lifestyle Behaviors Scale-II (HLBS-II), and the Fear of COVID-19 Scale.

**Results:** While the participants' mean score of the Fear of COVID-19 scale was  $17.98 \pm 5.49$ ; the HLBS-II mean total score was determined as  $130.43 \pm 20.58$ . The COVID-19 fear was higher in women, those who were following the daily data regarding the pandemic, those who did not smoke, and those who were considering to get the COVID-19 vaccine. Mean scores of HLBS-II were higher in those who followed the daily data of the COVID-19 pandemic, those who were using supplements, and those who adapted to the correct mask use.

**Conclusion:** It was observed that the average HLBS-II scores of university students were moderate and the level of COVID-19 fear was affected by gender, employment status, and smoking. Healthy lifestyle behaviors of the students should be enhanced to deal with the COVID-19 fear.

**Keywords:** COVID-19, fear, healthy lifestyle, risky health behaviors.

### Öz

**Amaç:** Bu çalışmada sağlık bilimleri fakültesi öğrencilerinin pandemi sürecindeki COVID-19 korkusunu, sağlıklı yaşam biçimi davranışlarını ve etkileyen faktörleri belirlemek ve COVID-19 korkusu ve sağlıklı yaşam biçimi davranışları arasındaki ilişkiyi incelemek amaçlandı.

**Gereç ve Yöntem:** Bu kesitsel çalışma, Aralık 2020 ile Şubat 2021 tarihleri arasında sağlık bilimleri fakültesinde öğrenim gören 687 üniversite öğrencisinin katılımıyla gerçekleştirildi. Veriler, yapılandırılmış bir bilgi formu, Sağlıklı Yaşam Tarzı Davranışları Ölçeği-II (HLBS-II) ve COVID-19 Korku Ölçeği kullanılarak çevrimiçi anket yöntemiyle elde edildi.

**Bulgular:** Katılımcıların COVID-19 Korku Ölçeği ortalama puanı  $17,98 \pm 5,49$  iken; HLBS-II ortalama toplam puanı  $130,43 \pm 20,58$  olarak saptandı. Kadınlarda, pandemi ile ilgili günlük verileri takip edenlerde, sigara içmeyenlerde ve COVID-19 aşısı yaptırmayı düşünenlerde COVID-19 korkusu daha yüksekti. HLBS-II puan ortalamaları, COVID-19 pandemisinin günlük verilerini takip edenler, takviye kullananlar ve maskenin doğru kullanımına uyum sağlayanlarda daha yüksek bulundu.

**Sonuç:** Üniversite öğrencilerinin ortalama HLBS-II puanının orta düzeyde olduğu ve COVID-19 korku düzeyinin cinsiyet, çalışma durumu ve sigara kullanımından etkilendiği görüldü. COVID-19 korkusuyla baş edebilmeleri için öğrencilerin sağlıklı yaşam biçimi davranışları güçlendirilmelidir.

**Anahtar Kelimeler:** COVID-19, korku, sağlıklı yaşam tarzı, riskli sağlık davranışları.

## 1. Introduction

The high contagiousness of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pathogen that caused the COVID-19 pandemic has resulted in a large number of people living in isolation conditions and this situation not only affected the physical health of individuals, but also negatively affected the mental health and well-being of individuals of all ages, regardless of exposure to infection (1).

The rapid spread of COVID-19 infection around the world, the increase in the number of infected individuals and high mortality rates, quarantine measures, public debates, information pollution on social media, and lack of information about the prognosis of the disease cause individuals to feel stressed, anxious, and insecure (1,2). This negative effect on individuals may increase the fear and panic felt. In studies conducted in the past epidemic and pandemic periods, it was also observed that individuals exhibit avoidance & safety behaviors while experiencing fear, worry, and anxiety (3-5). In a study conducted in Australia during the COVID-19 pandemic, it was emphasized that the deterioration in the mental health of individuals was associated with negative health behaviors (insufficient physical activity, deteriorated sleep quality, increased alcohol consumption and increased smoking) (6). Healthy lifestyle behaviors include healthy eating, being physically active, coping with stress appropriately, having sufficient interpersonal communication, and being responsible for self health. When these behaviors became a habit, one can maintain and improve their health status (7). In order to achieve a healthy society, university students, the future decision makers, must develop responsibilities complying to their own beliefs, attitudes and approaches regarding their lifestyles during the university period. Determining the healthy lifestyle behaviors of health sciences students may contribute to define the needs regarding this topic (8).

University students may experience mental health problems such as stress, anxiety and fear due to COVID-19 (9). Mental health deterioration may lead to negative health behaviors, as well as deterioration in healthy lifestyle habits such as healthy eating, adequate physical activity, and stress management, which are known to be effective methods in dealing with the fear of COVID-19 (6,10). Therefore, in the present study, determining the COVID-19 fear and healthy lifestyle behaviors in health sciences students during the COVID-19 pandemic was aimed.

## 2. Material and Methods

### 2.1. Study design

This is a cross-sectional study.

### 2.2. Participants and Procedure

Students from 13 departments of a faculty of health sciences at a university in Istanbul were included in the present study. The sample size of the study was calculated as 518 people, out of 3769 students, with a 50% healthy lifestyle ratio and a 4% (95% CI: 46% -54%) margin of error.

Study data were collected between December 2020-February 2021 by using an online survey prepared by the researchers.

The link of the online survey was shared via Whatsapp Messenger by the research assistants of each department. A total of 687 students agreed to participate in the study and provided informed consents. Participants were also informed about the option of withdrawal from the study at any time. Replying every question in the survey was obligatory.

### 2.3. Data Collection

The data were collected by using a structured information form, the Fear of COVID-19 Scale, and the Healthy Lifestyle Behaviors Scale-II (HLBS-II).

#### 2.3.1. Structured Information Form

The structured information form was prepared according to the literature and consisted of 23 questions regarding the sociodemographic characteristics and students' behaviors towards COVID-19 (11-13).

#### 2.3.2. Healthy Lifestyle Behaviors Scale-II

The HLBS-II scale was developed to evaluate the healthy lifestyle behaviors in 1996 by Walker et al. The validity and reliability of the scale in Turkish language were performed by Bahar et al. (2008). The scale consisted of 52 items and six sub-dimensions as; Nutrition (6 items), Health Responsibility (10 items), Physical Activity (5 items), Interpersonal Relationships (7 items), Spiritual Development (13 items), and Stress Management (7 items). HLBS-II was scored in a four-point Likert scale with a minimum score of 52 and a maximum score of 208. Higher scores were interpreted as greater positive health behavior. The reliability coefficient of the scale was 0.890 (14, 15).

#### 2.3.3. Fear of COVID-19 Scale

The Fear of COVID-19 scale was developed by Ahorsu et al. at 2020 (16). The Turkish version of the scale was performed by Akkuzu et al. at 2020 (17). It consisted of seven items and was scored in a five-point Likert scale. The minimum score was 7 points, and the maximum score was 35 points. Higher scores indicated increased level of coronavirus fear. The reliability coefficient of the scale was 0.820.

### 2.4. Statistical Analysis

SPSS 25 was used for the statistical analysis. The normal distribution of the data was checked using the Kolmogorov-Smirnov test. Accordingly, the data were evaluated using descriptive statistics, Kruskal-Wallis variance analysis, Mann-Whitney U test and pairwise comparisons with Bonferroni corrections.

### 2.5 Ethical Issues

Ethical approval was obtained from Uskudar University Non-Interventional Research Ethics Committee with the approval number 61351342/2020-543. Students completed surveys anonymously to protect their privacy.

## 3. Results

The descriptive characteristics were given at Table 1. The average age of the students was  $20.42 \pm 2.09$  years. Majority of the students did not report bad habits (79.5% of them do not smoke and 84.3% of them do not use alcohol). Majority (83.4%) of the students were women, 91.4% were unemployed, and 50.8% of them reported a decrease in

their incomes due to the pandemic. Majority (72.9%) of the students were following the daily data regarding the pandemic. Nearly all students (95.8%) reported that number of their daily handwashing was increased, and 86.3% mentioned that they adapted to the correct mask use (Table 1).

**Table 1. Introductory Characteristics of University Students.**

Variables (n=687)	Mean±SD	Min	Max
<b>Age (year)</b>	20.42±2.09	17	40
<b>Gender</b>	Female	573	83.4
	Male	114	16.6
<b>Body mass index (kg/m<sup>2</sup>)</b>	Thin (<18.5)	119	17.3
	Normal (18.5-24.9)	467	68.0
	Overweight (>25.0)	101	14.7
<b>Sleep time</b>	Less than 6 hours	66	9.6
	6 - 8 hours	430	62.6
	More than 8 hours	191	27.8
<b>Economic income perception</b>	Less than income	202	29.4
	Income is equal to expenses	380	55.3
	More than income	105	15.3
<b>Changing in family income due to COVID-19</b>	Income has increased	13	1.9
	Income has decreased	349	50.8
	No change	325	47.3
<b>Smoking</b>	Yes	89	13.0
	Social drinker	52	7.6
<b>Alcohol</b>	No	546	79.5
	Yes	33	4.8
	Social drinker	75	10.9
<b>Monitoring daily data about COVID-19</b>	No	579	84.3
	Yes	501	72.9
<b>The place where COVID-19 news is followed</b>	Television / Radio	186	27.1
	Newspaper / Magazine / Leaflets	377	33.3
	Internet / Social media	32	2.8
	Scientific Journal / Articles	611	54.0
<b>Social media account</b>	I have	112	9.9
	I have not	648	94.3
<b>The frequency of follow news regarding COVID-19 from the Internet?</b>	Everyday	39	5.7
	A few times a week	250	36.4
	I do not follow	377	54.9
<b>His/her relative's having COVID-19 disease</b>	Yes	60	8.7
	No	393	57.2
<b>Thought of getting COVID-19 vaccine</b>	Yes	294	42.8
	No	361	52.5
<b>Use of nutritional supplements to protect against COVID-19</b>	Yes	326	47.5
	No	284	41.3
<b>The number of hand washing per day during the pandemic period</b>	Increased	403	58.7
	No change	284	41.3
	Often	658	95.8
<b>Complying with the correct use instructions for the mask</b>	Sometimes	29	4.2
	Often	593	86.3
	Rarely	84	12.2
		10	1.5

The Cronbach's alpha value of the Fear of COVID-19 Scale was 0.844. The Cronbach's alpha value of total HLBS-II was 0.931 (Cronbach's alpha scores for; Health Responsibility sub-scale, Physical Activity sub-scale, Nutrition sub-scale, Spiritual Development sub-scale, Interpersonal Relationships sub-scale, and Stress Management sub-scale were 0.803, 0.867, 0.717, 0.808, 0.760, and 0.701, respectively). Mean total score of the Fear of COVID-19 Scale was 17.98±5.49, and mean total HLBS-II score was 130.43±20.58.

The mean total score of the Fear of COVID-19 Scale was higher in women ( $p<0.001$ ), those who were following daily data regarding the pandemic ( $p<0.001$ ), those who were using supplements for protecting themselves from COVID-19 ( $p=0.010$ ), those with an increased number of hand washing in the pandemic ( $p=0.013$ ), and those who were considering to get COVID-19 vaccine ( $p=0.020$ ). Further analysis revealed that non-smokers, those who were following the news regarding the pandemic every day, and those who were using the mask in a correct fashion presented higher COVID-19 fear scores (Table 2).

Mean total score of HLBS-II was higher in those who were following daily data regarding the pandemic ( $p<0.001$ ), those who had a social media account ( $p=0.045$ ), and those who were using supplements for protecting themselves from COVID-19 ( $p<0.001$ ). Further analysis revealed that higher HLBS-II scores were detected in students who were using the mask frequently, who were following the news about COVID-19 every day, and who were sleeping 6-8 hours (Table 3).

Statistically significant differences were detected in various HLBS-II sub-scores according to gender, body mass index, smoking status, and sleep time duration ( $p<0.05$ ).

A positive ( $r = 0.114$ ,  $p = 0.003$ ) and statistically significant weak relationship was found between the total Fear of COVID-19 Scale score and the HLBS-II Health Responsibility sub-dimension score. A negative ( $r = -0.113$ ,  $p = 0.003$ ) and statistically significant weak correlation was detected between the HLBS-II Spiritual Development sub-dimension score and total Fear of COVID-19 Scale score. No other significant relationships were detected (Table 5).

#### 4. Discussion

The immediate threat posed by the COVID-19 pandemic, and the uncertainty of the processes have brought serious fears and concerns (18). Besides, the limitations due to pandemic affected the healthy lifestyle behaviors (19).

The level of COVID-19 fear was significantly higher in women in the present study. Apart from being an infectious disease, the COVID-19 pandemic may also be a powerful stressor, as millions of individuals still experience COVID-19 fear. Exposure to permanent stress is known to be associated with stress-related psychiatric disorders (such as post-traumatic stress disorder, panic disorder, and major depression) which are more common in women (20). This gender effect is also supported by the evidence of gender differences in stress response systems. Women are less prone to social isolation. These differences in stress response systems may be associated with differences in sex hormones and neurobiological differences in women (20-22). Studies

**Table 2. Comparison of University Students' COVID-19 Fear Scores with Introductory Features**

Variables	COVID-19 Fear Scale Total Score Average					
	Mean±SD	Min	Max	Z	p	
<b>Gender</b>	Female	18.43±5.12	7	35	-5.243	.000
	Male	15.75±6.68	7	35		
<b>Monitoring daily data about COVID-19</b>	Yes	18.48±5.41	7	35	-4.186	.000
	No	16.66±5.49	7	35		
<b>Use of nutritional supplements to protect against COVID-19</b>	Yes	18.63±5.82	7	35	-2.589	.010
	No	17.53±5.21	7	35		
<b>The number of hand washing per day in the pandemic</b>	Increased	18.09±5.38	7	35	-2.472	.013
	No change	15.79±7.37	7	35		
<b>Social media account</b>	I have	18.02±5.54	7	35	-0.258	.797
	I have not	17.54±4.77	7	26		
<b>Thought of getting COVID-19 vaccine</b>	Yes	18.40±5.25	7	35	-2.332	.020
	No	17.53±5.72	7	35		
		<b>M±SD</b>	<b>Min</b>	<b>Max</b>	<b>Kwx2</b>	<b>p</b>
<b>Smoking</b>	Yes	16.78±6.49	7	35	7.386	.025
	Social drinker	17.27±5.74	7	30		
	No	18.25±5.27	7	35		
<b>Alcohol</b>	Yes	16.76±5.99	7	30	2.837	.242
	Social drinker	17.47±6.10	7	32		
	No	18.13±5.38	7	35		
<b>The frequency of follow news about COVID-19 from the Internet?</b>	Everyday <sup>a</sup>	19.08±5.88	7	35	26.032	.000
	A few times a week <sup>b</sup>	17.67±4.94	7	35		
	I do not follow <sup>c</sup>	15.47±6.09	7	35		
	Often <sup>a</sup>	18.20±5.36	7	35		
<b>Complying with the correct use instructions for the mask</b>	Sometimes <sup>b</sup>	16.57±5.32	7	32	7.166	.028
	Rarely	17.50±11.36	7	35		

Z=Mann Whitney U Kwx2 = Kruskal Wallis

conducted in Brazil, Israel, Eastern Europe (Russia and Belarus), and Bangladesh also supported that the COVID-19 fear is higher in women (23-26). Another study from China showed that in the first phase of the COVID-19 epidemic, the prevalence and severity of depressive, anxious/fearful, and post-traumatic symptoms increased in women (27).

To minimize the spread speed of a highly contagious diseases such as COVID-19, efforts for developing and enhancing protective behaviors are critical. Frequent mask use in a correct fashion and proper hand-washing was found as the protective measures against COVID-19 infection in the present study. In the first weeks of the COVID-19 outbreak in the United States, it was reported that those who received university-level education performed almost all protective behaviors to a greater extent (29). It is known that in the presence of a known threat, individuals may exhibit protective behaviors to reduce the risk (30, 31). Another study reported that COVID-19 fear was associated to protective behaviors (32). These findings suggest that fear is a topic which should be considered regarding the efforts of enhancing protective behavior.

The positive attitude regarding COVID-19 vaccine was found higher in those who were highly concerned about COVID-19 in the present study. Recent studies from Malaysia and Israel have also reported that the perceived risk regarding the COVID-19 virus were associated to

vaccine acceptance (33). Similar to our findings, higher COVID-19 fear was found to be associated with COVID-19 vaccine acceptance (34). Non-extreme fear and anxiety may increase the motivation of individuals to comply with the measures, thus, the optimal level of COVID-19 fear may have a positive effect.

Due to the uncertainty regarding to the future of COVID-19, increased mental stress, economic problems, and concerns regarding employment status may increase the smoking rate in some populations (36). Significant relationships were determined between increased smoking and alcohol consumption and high psychological distress previously (37). Increased smoking rates were also reported in students with high levels of COVID-19 fear (19). Moreover, the risk of respiratory distress and death by COVID-19 in smokers was found related to increased fear (38). However, non-smokers presented a higher level of COVID-19 fear in the present study. The reason of the low level of COVID-19 fear in the participants who smoke may be related to unhealthy coping strategies in the present study.

Smokers may have a low diet quality and their cholesterol, glycemic biological markers, and adiposity levels may be increased up-to the high-risk category (39). HLBS-II Nutrition sub-scale score of the smokers was lower in the present study. Smoking, which is an ineffective method of coping with stress, may trigger unhealthy nutritional behavior and

**Table 3. Comparison of University Students' Healthy Lifestyle Behaviors Scores with Introductory Features**

Variables	HLBS-II					
	Total Score Average			Z	p	
	Mean±SD	Min	Max			
Gender	Female	130.43±20.42	52	208	-.047	.963
	Male	130.46±21.50	88	208		
Monitoring daily data about COVID-19	Yes	132.37±20.58	52	208	-4.626	.000
	No	125.20±19.72	80	208		
Social media account	I have	130.87±20.25	80	208	-2.000	.045
	I have not	123.15±24.75	52	207		
Thought of getting COVID-19 vaccine	Yes	130.88±20.61	52	208	-1.066	.286
	No	129.93±20.58	81	208		
Use of nutritional supplements to protect against Covid-19	Yes	136.71±20.73	81	208	-6.846	.000
	No	126.01±19.31	52	208		
The number of hand washing per day in the pandemic	Increased	130.50±20.08	80	208	-.851	.395
	No change	128.97±30.31	52	208		
		Mean±SD	Min	Max	Kwχ2	p
Smoking	Yes	128.00±20.89	90	182	1.685	.431
	Social drinker	130.23±25.35	52	197		
	No	130.85±20.04	81	208		
Alcohol	Yes	129.15±21.13	90	172	.492	.782
	Social drinker	131.31±19.03	91	188		
	No	130.39±20.78	52	208		
The frequency of follow news about COVID-19 from the Internet?	Everyday <sup>a</sup>	134.20±21.57	52	208	16.021	.000 a>b,c
	A few times a week <sup>b</sup>	128.14±18.98	80	208		
	I do not follow <sup>c</sup>	129.13±23.92	88	208		
Complying with the correct use instructions for the mask	Often <sup>a</sup>	131.44±20.54	52	208	11.358	0.003 a>b
	Sometimes <sup>b</sup>	123.49±18.69	88	167		
	Rarely	129.20±28.47	108	208		
Sleep time	Less than 6 hours <sup>a</sup>	125.15±19.39	7	35	8.964	.011 b>a
	6-8 hours <sup>b</sup>	132.21±20.77	7	35		
	More than 8 hours <sup>c</sup>	128.25±20.14	7	35		

Z=Mann Whitney U Kwχ2 = Kruskal Wallis

unsuccessful weight management, and may lead to many conditions such as obesity, diabetes, and cardiovascular disease (40).

Weak significant relationships were detected between the Fear of COVID-19 Scale total score and HLBS-II Health Responsibility and Spiritual Development sub-scores in the present study. Fear of COVID-19 which is at a non-abnormal level may enhance the behavior of taking responsibility. Individuals who are spiritually developed and self-actualized, may experience less COVID-19 fear. Unfortunately, best to our knowledge, no other study is existed to compare our findings.

Students with less than six hours of sleeping time presented lower mean scores in HLBS-II and HLBS-II sub-dimensions of Health Responsibility, Stress Management, Interpersonal Relations, and Spiritual Development in the present study. A significant relationship was found between increased sleep quality and displaying healthy lifestyle behaviors during the COVID-19 pandemic in undergraduate students in a multi-center study including seven countries (35).

It was already known that the physical activity levels of the students were low compared to recommended levels prior to COVID-19 pandemic, while lower physical activity levels were observed during the pandemic (41). The HLBS-II Physical Activity sub-scale scores of the overweight individuals were found significantly higher in the present study. Di Renzo et al. (2020) reported that the individuals increased their physical activity for controlling their bodyweight. Thus, overweight students might increase their physical activity levels to control their weights during the pandemic process in the present study. However, another study on lifestyle did not report a significant change in the physical activity levels in students during COVID-19 (42).

Using social media platforms to raise awareness regarding healthy lifestyle behaviors may be effective in pandemics such as COVID-19 (43). The HLBS-II total score was higher in those who were following the news about COVID-19 on the internet every day and who were often using masks in a correct fashion in the present study. Increased consumption of immune-enhancing dietary supplements against the COVID-19 due to increased COVID-19 related news in the internet was also reported (44). The total

Table 4. Comparison of Sub-Scales of Healthy Lifestyle Behaviors with Some Variables in University Students

Variables		Health Responsibility Score					
		Mean±SD	Min	Max	Z	p	
Gender	Female	21.48±4.67	9	36	-1.110	.267	
	Male	20.96±4.76	11	36			
		Physical Activity Score					
		Mean±SD	Min	Max	Z	p	
Gender	Female	17.17±5.07	8	32	-3.811	.000	
	Male	19.26±5.48	8	32			
Body mass index		Mean±SD	Min	Max	Kwχ <sup>2</sup>	p	
		Thin <sup>a</sup>	16.28±4.83	8	32	10.984	.004
		Normal <sup>b</sup>	17.71±5.17	8	32		
Overweight <sup>c</sup>	18.11±5.54	8	32				
		Nutrition Score					
		Mean±SD	Min	Max	Kwχ <sup>2</sup>	p	
Smoking	Yes	20.72±3.82	13	33	9.090	.011	
	Social drinker	21.44±4.70	9	33			
	No	22.14±4.13	13	36			
Sleep time	Less than 6 hours <sup>a</sup>	20.67±3.57	13	29	9.289	.010	
	6-8 hours <sup>b</sup>	22.25±4.25	13	36			
	More than 8 hours <sup>c</sup>	21.56±4.04	9	33			
		Stress Management Score					
		Mean±SD	Min	Max	Kwχ <sup>2</sup>	p	
Sleep time	Less than 6 hours <sup>a</sup>	17.73±3.53	9	26	9.863	b>a	
	6-8 hours <sup>b</sup>	19.23±3.9	10	32			
	More than 8 hours <sup>c</sup>	19.06±3.64	8	30			

Z=Mann Whitney U Kwχ<sup>2</sup> = Kruskal Wallis

score of HLBS-II was also found higher in those who were using dietary supplements in the present study. A study shown that vitamins D and C were the most benefited supplements since the beginning of the pandemic, followed by zinc (45). Along with the boost from the internet and social media, the excessive and unnecessary use of dietary supplements, which are readily available, may lead to unwanted pharmacological consumption (46).

Table 5. The Relationship Between COVID-19 Fear Level and Healthy Lifestyle Behaviors in University Students

	Mean	SD	r
Fear of COVID-19 Scale	17.98	5.49	
Health Responsibility	21.39	4.68	.114*
Physical Activity	17.51	5.19	-.002
Nutrition	21.90	4.15	.051
Spiritual Development	25.26	4.69	-.113*
Interpersonal Relationships	25.30	4.26	.017
Stress Management	19.04	3.81	.018
HLBS-II Total Score	130.43	20.58	.017

r=Spearman Correlation, \*p<.05

## 5. Conclusions

It seems that a majority of university students studying in health sciences in Turkey are suffering from COVID-19 fear. The high COVID-19 fear especially among students who do not work may indicate the role of financial concerns. Psychological support oriented around economical issues with a collaboration of the government and universities, may help university students for alleviating psychological problems related to COVID-19 fear. It is also found that social media is often considered by students as a source of information regarding the COVID-19 pandemic. The correct use of social media should be prioritized. Ensuring the safety of social media by health authorities may enable health professionals to access accurate information. Thus, using internet and social media in this way may be beneficial as educational tools to adopt healthy lifestyle behaviors during the pandemic.

## 6. Contribution to the Field

The present study provided information regarding the COVID-19 pandemic and healthy lifestyle behaviors in health sciences students. The results of the present study may help to develop programs focusing on healthy lifestyle behaviors. Considering that health science students is possible role models for the society, interventions to improve sleep quality, which is another factor affecting healthy lifestyle behaviors, yet to be developed.

## 7. Limitations

This study has several limitations. The sample of the present study only consisted of individuals who have access to internet. Additionally, as no sample selection was performed, the results may vary for different sample groups. Finally, the survey is self-report which may reflect subjective experiences of the individuals.

## Competing interests

The authors report no conflicts of interest.

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## Authorship Contribution

**Concept :** RD, EE, EHK, Mİ, HÇ, MÇ; **Design:** RD, EE, EHK, MÇ; **Supervision:** RD, MÇ; **Data Collection/Processing:** RD, EE, EHK, Mİ, HÇ, MÇ; **Analysis/Interpretation:** EHK, RD; **Literature Review:** EE, EHK, Mİ, HÇ; **Manuscript Writing:** RD, EE, EHK, Mİ, HÇ, MÇ; **Critical Review:** RD, EE, EHK, Mİ, HÇ, MÇ.

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