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Araştırma Makalesi

Covid-19 Pandemisi Döneminde Türkiye'deki Tıp Fakültesi Öğrencilerinde Uyku Kalitesi

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Özet

COVID-19 pandemisinin bireyler üzerinde fiziksel, sosyal ve psikolojik etkileri olmuştur. Psikolojik etkileri nedeniyle bu süreci ruhsal açıdan inceleme gereği doğmuştur. Yapılan birçok çalışma, kişilerde uyku problemlerinde artış bildirmiştir. Uyku fiziksel sağlıkla ilişkili olduğu kadar bilişsel, psikomotor ve duygusal işlevler için de önemlidir. Tıp fakültesi öğrencilerinde uyku kalitesi ihmal edilmemesi gereken önemli bir kavramdır. Türkiye'deki tıp fakültesi öğrencilerinde pandemi sürecinde uyku kalitesinin belirlenmesidir**.** Çalışmamıza Eylül-Aralık 2020 tarih aralığında 424 Dicle Üniversitesi Tıp Fakültesi öğrencisi dahil edilmiştir. Tarafımızca hazırlanan Sosyodemorafik Veri Formu, Pittsburg Uyku Kalitesi İndeksi (PUKİ), Durumluk-Sürekli Anksiyete Ölçeği (STAI-S;State, STAI-T; Trait) ve Koronavirus Anksiyete Ölçeği (KAS) uygulanmıştır. Ölçek puan ortalamaları PUKİ; 6.77±3.44, STAI-S; 40.69±4.84, STAI-S; 44.97±5.82, KAS; 2.80±4.17 idi. % 72.4'ünün PUKİ puanı 5 ve üstüydü. % 40.8'i pandemi döneminde uykularında kötüleşme bildirmişti. PUKİ puanları, kadınlarda, COVID-19 testi yaptıranlarda, yakını COVID-19 enfeksiyonu geçirenlerde, günden 1 saatten fazla vaktini COVID-19 ile ilgilenerek geçirenlerde, sigara, alkol ve sedatif ilaç kullananlarda, pandemi sürecinde kafein kullanımı artanlarda anlamlı düzeyde yüksek bulundu. PUKİ ile STAI-S ve KAS puanları arasında pozitif korelasyon vardı. Çalışmamızda Türkiye'de ki tıp öğrencilerinde pandemi döneminde uyku kalitelerinin bozulduğu sonucuna ulaştık. Tıp öğrencilerinde uyku kalitesi ele alınması gereken önemli bir konudur. Öğrenciler uyku hijyeni konusunda bilgilendirilmeli, sigara, alkol ve diğer kötü alışkanlıkları bırakma konusunda desteklenmeli öğrencilere psikososyal destek verecek birimler kurulmalıdır.

Anahtar Kelimeler: Tıp öğrencileri, Türkiye, uyku, Covid-19, Pandemi

Sleep Quality of Medical Students In Turkey During The Covid-19 Pandemic

Abstract

The COVID-19 pandemic had physical, social, and psychological effects on individuals. In this process, the psychological effects of the pandemic led to the need to examine the pandemic spiritually. Many studies have reported sleep problems in individuals. Sleep is important for cognitive, psychomotor, and emotional functions as well as physical health. Sleep quality is an important subject that should not be neglected in medical school students. This study aims to evaluate the sleep quality of medical students in Turkey during the pandemic. 424 students studying at Dicle University Medicine Faculty participated in the study between September-December 2020. Sociodemographic data form prepared by us, Pittsburg Sleep Quality Index (PSQI), State-Trait Anxiety Inventory (STAI), Coronavirus Anxiety Scale (CAS) were administered. PSQI scores of the students were 6.77±3.44, STAI-S scores were 40.69±4.84, STAI-T scores were 44.97±5.82, CAS scores were 2.80±4.17. The PSQI score of 72.4% of the students was five and above. 40.8% of the students reported worsening in their sleep. Female gender, having the COVID-19 test or relatives with COVID-19 infection, spending 1 hour or more in a day associated with COVID-19, smoking, using alcohol or sedative medication, and increasing caffeine habits found risk factors for poor sleep quality. PSQI scores were positively correlated with STAI-S and CAS scores. According to our study, medical students had poor sleep quality in the pandemic. We should give more importance to students during and outside the pandemic because they are a risky group for psychological stressors due to young age, student status. Sleep quality in medical students is an important issue that needs to be addressed. Students should be informed about sleep hygiene rules, be supported in giving smoking, alcohol, and other bad habits, and psychosocial support units should be established in universities.

Keywords: Medical students, Turkey, Sleep, Covid-19, Pandemic

INTRODUCTION

The COVID-19 pandemic, which started in China and spread worldwide, had physical, social, and psychological effects on individuals. Due to the pandemic, our country and the whole world have experienced many new experiences. Many public institutions have taken various measures in our country and the world due to the pandemic. Some of these measures include the closure of schools and the transition to the online education system, stopping intercity travels, closing social areas, and declaring a curfew. In this process, the psychological effects of the pandemic led to the need to examine the pandemic spiritually. Many studies conducted in Turkey and abroad have reported that people are affected psychologically and caused deterioration of sleep quality (1-3). Sleep is an important indicator for individuals' health. Insufficient sleep poses a threat to physical health and causes impairment in cognitive, psychomotor, and emotional functions. Medical faculty students are at risk of impaired sleep quality and increased anxiety levels due to reasons such as the difficulty of medical education, excessive responsibilities, and excessive study hours. Many studies reported impaired sleep, poor sleep quality, and increasing anxiety levels in medical students. In the meta-analysis of Rao et al., 52.7% of 25735 medical students had poor sleep quality (4). In the study that Eyübogü et al. conducted with medical faculty students before the pandemic, 36% of the students scored higher than the cut-off value of the sleep quality scale (5). There are few studies reporting deterioration in sleep quality in medical students during the pandemic period in the literature. In the study evaluating the sleep quality of Tunisian medical faculty students during the pandemic process, poor sleep quality was reported at a rate of 72.5%. (6). But there are not enough studies in the literature on the sleep quality of medical students in Turkey. We hope that our study will contribute to the literature on this subject. This study aims to evaluate the sleep quality and the factors that affect sleep quality of medical students in Turkey during the pandemic.

MATERIAL and METHODS

The study involved 424 students studying at Dicle University Faculty of Medicine. The students were informed, and their approvals were received. Sociodemographic data form prepared by us, Pittsburg Sleep Quality Index (PSQI), State-Trait Anxiety Inventory (STAI), Coronavirus Anxiety Scale (CAS) Short Form were administered via Google Forms between September-December 2020. Permission for this study is retrieved from Dicle University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (Date: 16.07.2020; Number: 239). The Helsinki Declaration 2013 principles conducted this study. There is no conflict of interest regarding this article. The preliminary data of this study were used as an oral presentation at the 56th National Psychiatry Congress (18 - 20 December 2020) on 19 December 2020.

Pittsburg Sleep Quality Index (PSQI): PSQI, developed in 1989 by Buysse et al. (7). It consists of seven items evaluating subjective sleep quality, sleep delay, sleep duration, sleep efficiency, sleep disturbance, use of sleeping pills, and impairment in daytime work. Each response is scored between 0 and 3 according to symptom frequency. The global score obtained varies between 0-21, and high values indicate poor sleep quality and high level of sleep disorders. Turkish adaptation was made by Agargün et al. (8).

State-Trait Anxiety Inventory (STAI): STAI was developed to determine state and trait anxiety levels separately (9). STAI includes two separate scales and a total of forty items. In the State Anxiety Scale (STAI-S), the individual is asked to describe how he/she feels at a certain time and under a certain condition. In the Trait Anxiety Scale (STAI-T), the individual is asked to describe how he/she generally feels. It was adapted to Turkish by Öner and Le Compte (10).

Coronavirus Anxiety Scale Short Form: A brief mental health screening scale developed by Lee to describe possible cases of dysfunctional anxiety associated with the COVID-19 crisis (11). The scale consists of 5 questions and one dimension. The score of the scale is calculated by summing the items "0 - never", "1 - Rare, less than a day or two", "2 - A few days", "3 - more than seven days" and "4 - almost every day in the last two weeks". It was adapted to Turkish by Biçer et al (12).

Statistical Method

SPSS 24 program was used for database and statistical analysis. Descriptive statistical data are expressed as mean, standard deviation, frequency and percentage. Kolmogorov - Smirnov test was used to evaluate the distribution of continuous variables. Independent t-test was used in paired comparisons for data with normal distribution, and ANOVA was used for comparing more than two groups. Mann-Whitney U test was used in paired comparisons in non-normal distributions, and Kruskal - Wallis test was used to compare more than two groups. The Wilcoxen test was used to compare paired repeated measures in the dependent groups. The Post-hoc Tukey test was used to identify the group that caused the difference. Relationships between scale scores were evaluated using Pearson correlation analysis in normal distributions and Spearman correlation analysis in non-normal distributions. For statistical significance, $p < 0.05$ was taken.

RESULTS

The average age of the students was 21.78 ± 2.73 (minimum 18, maximum 45). Gender, class, having COVID-19 test and COVID-19 treatment, presence of relative with COVID-19, loss of relatives associated with COVID-19 infection, time spent associated with COVID-19 in a day information of the students are given in Table 1. We asked the students how their sleep quality was before and during the pandemic, and we asked them to choose one of the very good, fairly good, fairly bad, very bad options. 12.5% (n = 53) of the students evaluated their sleep quality very good before the pandemic, 60.8% (n = 258) were fairly good, 21.9% (n=93) were fairly bad, and 4.7% (n=20) very bad. These rates changed during the pandemic period as 5% (n=21) very good, 35.6% (n=151) fairly good, 44.8% (n=190) fairly bad, 14.6% (n = 62) very bad (Figure 1). We evaluate two answers by The Wilcoxen test and found that 40.8% (n = 173) of the students had worsened sleep (Table 2).

Table 1. Features of medical students

	%	N
Gender		
Female	48.8	207
Male	51.2	217
Class		
1	22.6	96
2	15.8	67
3	10.1	43
4	14.6	62
5	20.8	88
6	16.0	68
COVID-19 Test		
No (N=323)	76.2	323
Yes, negative (N=64)	15.1	64
Yes, positive (N=37)	8.7	37
COVID-19 treatment		
Yes	5.4	23
No	94.6	401
Having relatives with COVID-19 infection		
Yes	81.1	344
No	18.9	80
Loss of relatives due to COVID-19 infection		
Yes	23.8	101
No	76.2	323
Time spent associated with COVID-19 in a day		
Less than1 hour	68.4	290
1 hour and more	31.6	134

(%; frequency, N; number)

Among the habits of the students, caffeinated beverages (like coffee, tea, cola, etc.) were the most increased one during the pandemic, whereas smoking came in second. Only a small rate, 2.8% of the students, reported an increase in taking sleep medications. 7,3% of the sample, which accounts for 31 students, mentioned that they increased smoking, but 21 students (5%) mentioned a decline (Figure 2).

Table 2: Change of sleep quality of the students before and during the pandemic

	N	%
Better during pandemic	22	5.2
Worse during pandemic	173	40.8
No change	229	54.0

(%; frequency, N; number)

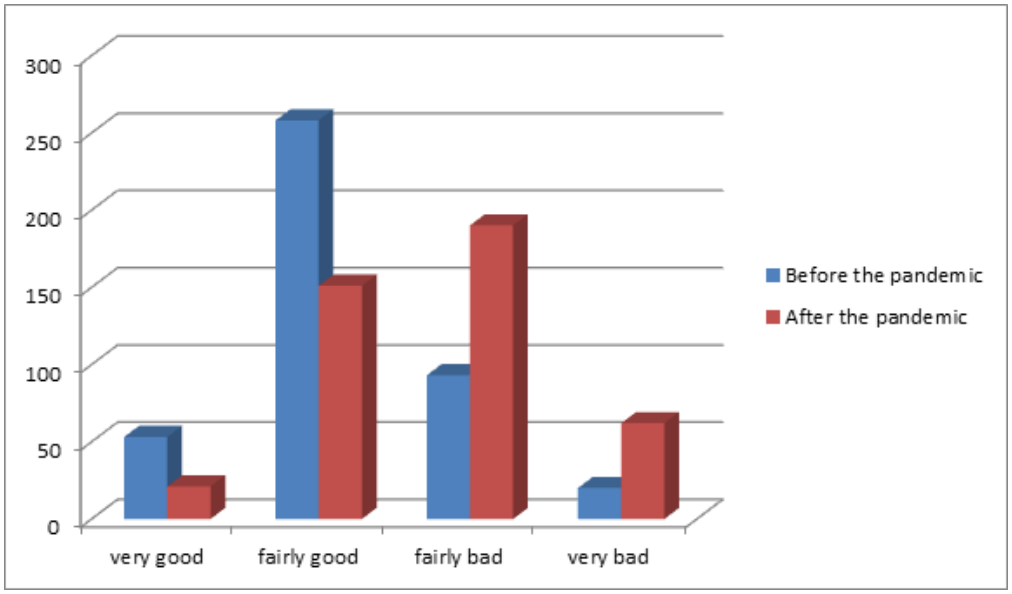

Figure 1. Subjective assessment of sleep quality of the students before and during the pandemic

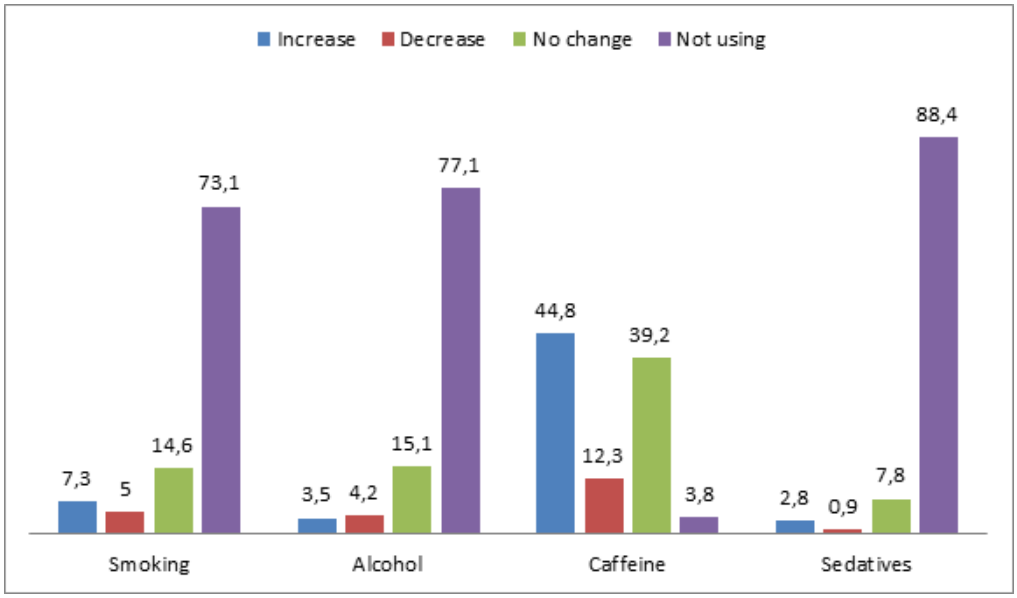

Figure 2. Changes of students's habits before and during the pandemic

PSQI scores were 6.77 ± 3.44, STAI-S scores of the students were 40.69 ± 4.84, STAI-T scores were 44.97 ± 5.82, CAS scores were 2.80 ± 4.17. The PSQI score of 72.4% (n=307) of the students was 5 and above. Total and subscale means of PSQI are given in Table 3.

Table 3. Total and subscale means of PSQI

	PSQI
	Mean±SD
Subjective sleep quality	1.54±0.74
Sleep latency	1.59±0.93
Sleep duration	0.54±0.85
Sleep efficiency	0.30±0.75
Sleep disturbance	1.37±0.68
Use of sleep medication	0.08±0.43
Daytime dysfunction	1.36±0.93
Total PSQI Score	6.77±3.44

(SD; standard deviation, PSOI; Pittsburg Sleep Quality Index)

Table 4. Factors affecting the PSQI

	PSQI	**p**
	Mean±SD	
Gender		
Female (N=207)	7.26±3.66	.004**
Male (N=217)	6.31±3.16	
Class		
1 (N=96)	6,38±2.88	
2 (N=67)	7,36±4.15	
3 (N=43)	6,84±3.16	.640
4 (N=62)	6,87±3.57	
5 (N=88)	6,65±3.05	
6 (N=68)	6,79±3.41	
COVID-19 Test		
No (N=323)	6.41±3.23	
Yes negative (N=64)	8.03±3.63	.004**
Yes positive (N=37)	7.81±4.18	
Having relatives with COVID-19 infection		
Yes (N=344)	6.96±3.50	.021*
No (N=80)	5.98±3.04	
Loss of relatives due to COVID-19		
Yes (N=101)	6.94±3.71	.577
No (N=323)	6.72±3.36	
Time spent associated with COVID-19 in a day		
Less than1 an hour (N=290)	6.17±3.09	.000**
1 hour and more (N=134)	8.09±3.79	
Smoking		
Yes (N=114)	7.48 ± 3.75	.010*
No (N=310)	6.51 ± 3.29	
Alcohol		
Yes (N=97)	7.85 ± 3.72	.000**
No (N=327)	6.46 ± 3.30	
Sedatives		
Yes (N=50)	8.06 ± 4.50	.005**
No (N=374)	6.60 ± 3.25	
Caffeinated beverages		
Increase (N=190)	7.56±3.64	
No change (N=166)	6.19±3.10	.001**
Decrease (N=52)	6.38±3.27	

(N; number, SD; standard deviation, PSOI; Pittsburg Sleep Quality Index)
* p<0,05, ** <0,01

Table 5. Correlation of PSQI scores with STAI and CAS scores

		STAI-S	STAI-T		CAS
PSQI	Pearson Correlation	-.027	.119*	Spearman Correlation	.353**
	P	.577	.014	P	.000

(PSOI; Pittsburg Sleep Quality Index, STAI-S; State-Trait Anxiety Inventory-State, STAI-S; State-Trait Anxiety Inventory-Trait, CAS; Coronavirus Anxiety Scale) * p<0,05, ** <0,01

PSQI scores were statistically significantly higher in women, those who had the COVID-19 test, and relatives with COVID-19 infection, who spent 1 hour or more in a day associated with COVID-19, smokers, alcohol, and sedative medication users. Scores of the students with increased caffeine use were statistically higher than unchanging and decreasing groups. Class and loss of relatives due to COVID-19 infection did not significantly affect PSQI scores (Table 4). PSQI scores were significantly positively correlated with STAI-S and CAS scores (Table 5).

DISCUSSION

This study aims to evaluate the sleep quality of Turkish medical students during the pandemic. While, before the pandemic, 26.6% of the students evaluated their sleep quality as fairly bad or very bad, this rate was 59.4% during the pandemic. These findings, parallel to previous studies, show that medical faculty students also had disturbances in sleep quality before the pandemic (13-15). In the study in which 286 Turkish medical faculty students were evaluated with PSQI, it was found that the sleep quality of the medical students was poor and that their sleep quality scores were significantly correlated with their anxiety scores (5). PSQI scores were five and above in 72.4% of the students. We found that PSQI scores were statistically significantly higher in females, those who had the COVID-19 test, and relatives with COVID-19 infection, who spent 1 hour or more in a day associated with COVID-19, smokers, alcohol, and sedative medication users. Scores of students with increased caffeine use were statistically higher than unchanging and decreasing groups. During the epidemic in China, the sleep quality of 1026 medical students was evaluated with PSQI. When more than 7 points were assessed as poor sleep quality, it was found that 33.2% of the students had poor sleep quality. Females and students who have higher anxiety about the negative effects of COVID-19's on their education are found more likely to have poor sleep quality (16). In a study involving 251 Tunisian medical school students, 72.5% of the students scored above five on the PSQI and were classified as poor sleepers. Gender, year of medical education, using alcohol, and duration of COVID-19 news per day didn't significantly affect PSQI scores. Smokers, those who deem quarantine unbearable and decrease or have no physical activity during quarantine, those with high levels of depression, anxiety, and stress measured by Depression, Anxiety, and Stress Scale-21 (DASS-21) had significantly higher scores on the PSQI (6). In a study conducted with 307 medical students in Italy, the sleep quality of the students was found to be worse than the pre-pandemic period. While the PSQI score

of 58% of the students before the pandemic was five and above, this ratio increased to 73.3% during the pandemic process. Similarly, in our study, the students' PSQI score of 72.4% was five and above (17). Unlike other studies and our study, in a study conducted in India, 760 medical school students were asked to evaluate their sleep before the pandemic and during the period of home confinement, and 91.8% of students reported that they are able to take adequate sleep at home during lockdown period (18). In light of our findings, the scores of the state anxiety scale were borderline high, the trait anxiety scale scores were high. CAS scores were not found high. In studies during the COVID-19 pandemic, female gender, student status, increased social media exposure, and young age were found to be factors that increase psychological stress (19, 20). In a study with 7143 medical students in China, 75% of the students had no anxiety symptoms, while 25% had mild, moderate, or severe anxiety levels. Not living with the family and the infection of a relative were found to be predisposing factors (14). In a study conducted with 323 medical students in Iran, no significant difference was found between anxiety levels before and during the pandemic. However, anxiety levels were found significantly higher in women than men (21). The fact that the pandemic is a medical condition, the medical students can access the correct information from the right sources, their frequent exposure to such situations during their education and their compliance to hygiene rules might be among the reasons why the expected increase in the state anxiety scale was not observed and why CAS scores were low. Studies are supporting that medical students have higher trait anxiety scores than the average population before the pandemic. This situation may be related to the personality traits of medical students (22, 23). The cross-sectional nature of the study can be considered as a limitation of our research. Our sample was from a single university; therefore, it only reflects the results of Dicle University medical students. In our study, self-report scales were used, and a clinician did not evaluate the students. In addition, the absence of a control group is another limitation of the study. As a result, we found that medical students had poor sleep quality during the pandemic. Female gender, having the COVID-19 test or relatives with COVID-19 infection, spending 1 hour or more in a day associated with COVID-19, smoking, using alcohol or sedative medication, and increasing caffeine habits found risk factors for poor sleep quality. It seems that experienced stress during the pandemic and lifestyle changes of young people directly affects sleeping habits. Problems with sleep cause impairments in the professional and social life, cognitive function, and quality of life of the person. In addition, sleep problems affect physical health, suppress the immune system, and predispose to psychiatric disorders (24, 25). For these reasons, sleep quality is very important for medical students. Sleep hygiene education may help to improve the sleep quality of medical students. Sleep hygiene education can be a part of education and can be given seminars about the importance of sleep. Habits such as smoking, using alcohol, and caffeine are changeable factors associated with sleep quality. Students should be informed about the effects of smoking, using alcohol, caffeine, and other habits that affect sleep quality, and medical students should be given guidance and support to give up these habits. For medical students, it may be helpful to establish COVID-related or

general psychological support units in universities.

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All authors were involved in the manuscript and approved the final manuscript.

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