Araştırma Sunumu | Research Article

Examination of Coronavirus Anxiety and Sleep Quality of Nurses During Covid-19 Pandemic /

Covid-19 Pandemisinde Hemşirelerin Koronavirüs Kaygısının ve Uyku Kalitesinin İncelenmesi

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Gönderim Tarihi | Received: 23.06.2022, Kabul Tarihi | Accepted: 17.02.2023, Yayım Tarihi | Date of Issue: 31.03.2024

Atıf | Reference: "AKÇA, K., ÖZCAN, M. and GÜLHAN GÜNER, S. (2024). Examination of Coronavirus Anxiety and Sleep Quality of Nurses During Covid-19 Pandemic. Health Academy Kastamonu (HAK), 9(1), s.120-133. DOI: https://www.doi.org/ 10.25279/sak.1134959"

Öz

Giriş: Hemşireler, pandemi döneminde hastalarla uzun süre temasta bulunan, iletişim kuran ve aktif rol oynayan sağlık profesyonelleridir. Pandemi sürecinde hemşirelerin kaygı düzeylerinin ve uyku kalitesinin değerlendirilmesi gerekmektedir. Amaç: Bu çalışma, COVID-19 pandemisinde hemşirelerin koronavirüs kaygısının ve uyku kalitesinin incelenmesi amacıyla yapıldı. Gereç ve Yöntemler: Tanımlayıcı ve kesitsel tipte yapılmış olan bu çalışma 384 hemşire ile tamamlandı. Verilerin toplanmasında "Tanıtıcı Bilgiler Formu", "Koronavirüs Kaygı Ölçeği" ve "Pittsburgh Uyku Kalite İndeksi (PUKİ)" kullanıldı. Elde edilen verilerin analizinde sayı, yüzdelik dağılımlar, ortalama ve standart sapma, Mann Whitney U testi, Kruskal Wallis, Dunn testi ve Spearman korelasyon testi yapıldı. Bulgular: Araştırma kapsamına alınan hemşirelerin Koronavirüs kaygı ölçeği toplam puan ortalamaları 3.14± 3.85 (min: 0, max: 20) olup, PUKİ toplam puan ortalaması 13.29±2.57 (min: 7, max: 20)'dir. Ayrıca Koronavirüs Kaygı Ölçeği ile PUKİ arasında pozitif yönde anlamlı bir ilişki vardır ($p<0.001$, $r=0.318$). Sonuç ve Öneriler: Katılımcıların COVID-19 ile ilgili kaygı düzeyinin düşük olduğu ve uyku kalitesinin kötü olduğu saptanmıştır. COVID-19 pandemisi sürecinde hemşirelerin, koronavirüs kaygısını azaltmak ve uyku kalitesini artırmak için sürdürülebilir fiziksel ve psikolojik girişimlerle güçlendirilmesi gerekmektedir.

Anahtar kelimeler: Anksiyete, COVID-19, Hemşire, Uyku kalitesi

Abstract

Introduction: Nurses are health professionals who are in contact with patients for a long time, communicate and play an active role during the pandemic period. It is necessary to evaluate the anxiety levels and sleep quality of nurses during the pandemic process. Aim: This study was carried out to examine the coronavirus anxiety and quality of sleep of nurses during the COVID-19 pandemic. Materials and Methods: This descriptive and cross-sectional study was completed with 384 nurses. We collected data using the "Introductory Information Form", "Coronavirus Anxiety Scale" and "Pittsburgh Sleep Quality Index (PSQI)". The analysis of the obtained data included numbers, percentile distributions, mean and standard deviation, Mann Whitney U test, Kruskal Wallis, Dunn test and Spearman correlation test. Results: The total Coronavirus anxiety scale score of the nurses included in the study is 3.14 ± 3.85 (min: 0, max: 20), and the total point average of PSQI is 13.29±2.57 (min: 7, max: 20). There is also a positive significant relationship between the coronavirus anxiety scale and PSQI ($p<0.001$, $r=0.318$). Conclusion and Suggestions: Participants were found to have poor sleep

quality and with low levels of anxiety about COVID-19. Nurses should be strengthened through sustainable physical and psychological initiatives in order to reduce coronavirus anxiety and improve sleep quality in the COVID-19 pandemic.

Keywords: Anxiety, COVID-19, Nurse, Sleep quality

1. Introduction

COVID-19 first appeared in Wuhan, China, in December 2019. COVID-19, declared by the World Health Organization (WHO) as a pandemic, is a highly infectious disease that causes severe pneumonia (World Health Organization 2021; Dirgar et al, 2021; Shereen et al.,2020; Huang et al.,2020; She et al., 2020). According to WHO data, approximately 537 million cases and more than 6 million deaths occurred (World Health Organization, 2022). In Turkey, the first COVID-19 case was detected on March 11, 2020 (Ministry of Health, 2020). According to the Ministry of Health data of June 2022, more than 15 million cases and more than 98,000 deaths have been reported (Ministry of Health, n.d.).

COVID-19 is a complex, constantly evolving, and changing disease worldwide. The occupational health and safety organization evaluates health professionals at a very high and high-risk group from the perspective of COVID-19 (United States Department of Labor, 2021). Accordingly, especially the persons who perform aerosol-producing processes (intubation, cough induction, bronchoscopy, mouth-throat-nose examination, ophthalmological examinations, central catheter placement, nebulizer use, cardiopulmonary resuscitation, oxygen therapy, non-invasive ventilation, dental examinations with some procedures, invasive sample collection procedures), laboratory workers, physicians, nurses and auxiliary health workers have been defined as risk groups (Turkish Thoracic Society, 2021). In addition to all these, the COVID-19 pandemic has affected all aspects of life and has caused people several anxieties and concerns. In particular, people will lose their loved ones/closed ones, and there will be food shortages, inability to access health institutions, unemployment, infection at any moment, fear of passing the virus to someone else, all increase the level of anxiety (Biçer et al., 2020; Harper et al., 2021; Pakpour & Griffiths, 2020).

Individuals are concerned when uncertain about any situation or incident and cannot foresee the outcome. High levels of anxiety can cause some cognitive and psychosomatic symptoms in individuals. Symptoms include palpitations, sweating, muscle fatigue, headache, difficulty falling asleep, frequent awakening, nightmares, and insomnia. Sleep is one of the people's basic needs, and it is important in all stages of life to maintain health and quality of life (Eller et al., 2006).

Sleep quality is when an individual feels fit and ready for a new day after waking up. Good sleep quality protects our cognitive and physical health and improves our quality of life (İlhan Algın et al., 2016). At the same time, good sleep quality is especially important to protect against various infections and strengthen the immune system (Besedovsky et al., 2019). Anxiety and depression are inevitable due to the pandemic's increased morbidity and mortality rate. The literature also emphasizes that the sleep quality of individuals are negatively affected (Huang & Zhao, 2020). The increase in the number of uncertainties and cases/deaths resulting from COVID-19 has further increased the level of concern for health professionals at risk (Kasapoğlu, 2020; Lai et al., 2020; Huang et al.,2020). An examination of the work carried out during the COVID-19 pandemic revealed a significant level of anxiety and insomnia in health professionals (Du et al., 2020; Gao et al., 2020; Huang et al., 2020; Huang & Zhao, 2020; Lai et al., 2020). The health professionals who are in contact with the patients for a long time and communicate, and play an active role are the nurses during the pandemic. From the outset of the pandemic, nurses are more anxious than other health professionals when the literature is reviewed (Hacimusalar et al., 2020).

Inadequate sleep, which is important for a healthy life during a pandemic, increases anxiety and unfavorable expectations. It is believed that the level of anxiety and sleep quality of the nurses, who have actively participated in the pandemic, will be affected depending on COVID-19. In this context, we launched this study to examine nurses' coronavirus anxiety and sleep quality during the COVID-19 pandemic.

Accordingly, the following questions were answered:

-What is the level of coronavirus anxiety among nurses?

-What is the sleep quality of nurses during the pandemic?

-What are the variables that affect the sleep quality of nurses?

-Are there any relationship between coronavirus levels of anxiety and sleep quality in nurses?

2. Material and Method

2.1. Type of Research

The research is of the defining and sectional type.

2.2. Universe and Sample of Research

The data were collected from December 2020 to April 2021. The research universe was formed by 198,103 nurses working in hospitals in Turkey during the COVID-19 pandemic (Ministry of Health, 2021). In the G*Power analysis program, An a priori power analysis revealed calculations of the confidence interval of 95 percent and the error margin of 0.05, showing that 384 people were needed to determine the sample size of the study. Then a post hoc power calculation was conducted by analyzing the z value coming from the Mann Whitney U test. The achieved effect size was 0.28, suggesting a power of 0.75. Nurses were selected based on a simple random sampling method, and the entire sample was achieved.

2.3. Data collection tools

We collected data using the "Introductory Information Form", "Coronavirus Anxiety Scale" and "Pittsburgh Sleep Quality Index".

Introductory Information Form: This form, prepared in line with the literature by the researchers, consists of eight questions questioning the sociodemographic characteristics of nurses (Akkuzu et al., 2020; Yeşil Bayülgen et al., 2021).

Coronavirus Anxiety Scale (CAS): Developed by Lee (2020), this scale is a five-point Likert type consisting of five items (Lee, 2020). Akkuzu et al. (2020) conducted validity-reliability runs of scale in the Turkish language. Scale items are scored from 0-4, and scale scores are calculated from total points (Akkuzu et al., 2020). In the original scale, the alpha coefficient of Cronbach was 0.93 and calculated as 0.81 in the Turkish validity-reliability study of the scale. For this study, the alpha coefficient Cronbach was calculated as 0.88.

Pittsburgh Sleep Quality Index (PSQI): Pittsburgh Sleep Quality Index, developed by Buysse et al. (1989) and the Turkish validity and reliability had worked on by Agargün et al. (1996). Assessing sleep quality over the last month, the PSQI contains 24 questions. Of these, 19 are self-reporting questions,

and the individual is answered, the spouse or a roommate answers the five questions, and these five answers are not included in the scoring. A total score of 0-21 points, below five, means that sleep quality is good. For this study, the alpha coefficient Cronbach was calculated as 0.84.

2.4. Data collection

The forms were sent to the nurses using online methods (Google Forms Program). The informed consent page was opened after the form link sent to the participants was clicked. After the approval was received, the form questions could be displayed. Each participant's online form response time was approximately 20-25 minutes.

2.5. Data evaluation

Data was analyzed electronically in the Statistical Package for Social Sciences (SPSS) 23.0 program. Number, percentage distributions, average, and standard deviation were used to analyze the obtained data. Suitability of the data to the normal distribution was established using the Kolmogrov-Smirnov test. The Mann-Whitney U test was used to compare the variables that do not have a normal distribution in two groups, and the Kruskal Wallis test was used to compare more than two groups. In addition, post hoc analysis was performed in comparisons of more than two groups, and Dunn test were used. Spearman correlation test was used to determine the relationship between nonparametric data. The correlation values were rated as 0–0.2 = very weak, 0.2–0.4 = weak, 0.4–0.6 = moderate and 0.6–0.8 = strong and 0.6–0.8= very strong. A value of $p < 0.05$ was considered statistically significant (Karabulut et al., 2020).

Ethical aspects of research

Written permission from the Department of Ethics of Human Research at Erzincan Binali Yıldırım University (No: 2020/08-09) was obtained. Permission was obtained from the authors, who performed the validity and reliability of the scale, via e-mail.

3. Results

Table 1. Descriptive Characteristics of the Participants (n=384)

Features	N	%
Age (years)		
21-30	238	62.0
31-40	107	27.8
41-50	39	10.2
Gender		
Male	65	16.9
Female	319	83.1
Marital status		
Single	193	50.3
Married	191	49.7
Income level		
Income is less than expense	121	31.5
Income equal expense	201	52.3
Income is more than expense	62	16.1
Education		
Medical vocational high school	40	10.4
Associate degree	52	13.5
Bachelor's degree	262	68.2
Master's and doctoral degrees	30	7.9
Chronic disease status		

Yes	70	18.2
No	314	81.8
Work schedules		
Daytime only	110	28.6
Night work only	15	3.9
Work day and night	259	67.4
Total duration of work in the profession (years)		
<10 years	286	74.5
≥10 years	98	25.5

62% of the participants are in the 21-30 age groups. Of the nurses, 83.1% are female, 49.7% are married, 68.2% are undergraduate, and 52.3% have equal income expenses. The rate of nurses with chronic diseases is 18.2%. In addition, 67.4% of nurses work day or night. The number of nurses with ten years of employment in the profession is 74.5%.

Table 2. Total Scores of Participants from the CAS and PSQI, and Inter-Scale Relationship (n=384)

Scale	Minimum	Maximum	X ± S.D.	r	p
Total score on CAS	0	20	3.14 ± 3.85	0.318	<0.001
Total score on PSQI	7	20	13.29± 2.57		

*S.D: Standard deviation

The total Coronavirus Anxiety Scale score of the nurses included in the study is 3.14 ± 3.85 (min: 0, max: 20), and the total point average of PSQI is 13.29 ±2.57 (min: 7, max: 20). During the COVID-19 pandemic, the correlation studies between anxiety and sleep quality were very limited in number. Studies are examinations that generally determine the correlation and relationship between students' fear and anxiety levels and sleep quality. This study shows a positive correlation between nurses' anxiety levels and sleeps quality. Similarly, studies in the literature demonstrate a correlation between sleep quality and level of anxiety. In a study conducted by Roy et al. in India, 12% of the participants reported having sleep problems due to anxiety (Roy et al., 2020). They reported no correlation between anxiety problems and sleep quality, unlike the studies conducted by Huang and Zhao (Huang & Zhao, 2020). The social isolation of nurses in hospitals, the physical environment, the possibility of infection, the reduction of social interactions, and developments experienced during COVID-19 around the world may increase the level of anxiety and reduce the quality of sleep. This may be a side effect of the feeling of anxiety. There also was a weak positive association between participants' Coronavirus anxiety scale and PSQI scores ($p<0.001$, $r=0.318$) (Table 2).

As demonstrated by studies reporting similar observations earlier, a positive correlation was found between anxiety and the sleep quality of health personnel. This study aimed to assess anxiety and sleep quality using two separate scales more accurately, and a meaningful correlation was found between the two. As a result, a positive correlation was found between CAS total score and PSQI total score. This means a reduction in sleep quality. Studies that examined the relationship between COVID-19 sleep quality and COVID-19 anxiety have been reported with similar findings (Salehi et al., 2020; Rodríguez-Hidalgo et al., 2020). The literature reports a positive relationship between sleep quality and anxiety. This research finding supports this phenomenon.

Table 3. Comparison of CAS and PSQI Total Points with Certain Characteristics of the Participants (n=384)

	CAS		PSQI	
Features	**Mean Rank**	**Test statistic p value**	**Mean Rank**	**Test statistic p value**
Age (years)				
21-30	183.23	KW=4.902	204.0	KW=6.783
31-40	204.34	p= 0.086	172.85	p = 0.034*
41-50	216.58		176.24	
Gender				
Male	158.40	MWU= 8151	193.11	MWU=10328
Female	199.45	p = 0.006*	192.38	p = 0.961
Marital status				
Single	177.94	MWU=15627,5	207.90	MWU=15460
Married	207.18	p = 0.009*	176.94	p = 0.006*
Income level				
Income is less than expense	211.66	KW=5.783	230.11	KW=21.706
Income equal expense	185.75	p = 0.055	179.53	p < 0.001*
Income is more than expense	176.99		161.15	
Education				
Medical vocational high school	167.91	KW=9.288	235.24	KW=12.424
Associate degree	172.73	p = 0.026*	177.88	p = 0.006*
Bachelor's degree	203.89		194.29	
Master's and doctoral degrees	160.10		145.18	
Chronic disease status				
Yes	220.66	MWU=9019.0	199.46	MWU=10503
No	186.22	p = 0.017*	190.95	p = 0.561
Work schedules				
Daytime only	178.23	KW=4.977	158.57	KW=16.154
Night work only	156.57	p = 0.083	170.30	p < 0.001*
Work day and night	200.64		208.20	
Total duration of work in the profession (years)				
<10 years	189.90	MWU=13270	204.23	MWU=10660
≥10 years	200.09	p = 0.424	158.28	p < 0.001*

*p<.05, MWU: Mann Whitney U test, KW: Kruskal Wallis test

Table 3 shows a comparison of the respondents' certain attributes along with the CAS and the PSQI total scores.

There was a statistically significant difference between the total score of the CAS, and the participants' gender, marital status, and educational status and the presence of chronic diseases ($p<0.05$). It was determined that the significant difference in gender, marital status, and the presence of chronic diseases, which were the binary variables, resulted from the female participants, the married participants, and those with chronic diseases, respectively. In addition, a statistically significant difference was determined between the educational status, which had more than two variables, and the CAS ($p= 0.026$). In the post hoc analysis, it was determined that the significant difference between the educational status and the CAS resulted from the groups with undergraduate and graduate education levels ($p= 0.037$).

There was a statistically significant difference between the total score obtained by the nurses from the PSQI and their age, marital status, income level, educational status, work schedules, and total duration of work in the profession ($p<0.05$). It was determined that the significant difference in marital status and total duration of work, which were the binary variables, resulted from the single participants and those who worked in the nursing profession for less than 10 years, respectively. Post hoc analysis was also performed for descriptive features with more than two variables. It was determined that the significant difference between the age variable and the PSQI resulted from the participants in the 21-30 and 31-40 age groups ($p= 0.047$). It was determined that the significant difference between the income status and the PSQI resulted from those whose income was less than expenses and whose income was more than

expenses ($p<0.001$) and from those whose income was less than expenses and whose income was equal to expenses ($p<0.001$). It was found out that the significant difference between the educational status and the PSQI resulted from the groups with health vocational high school and graduate education level ($p= 0.005$). It was found that the significant difference between the way of working and the PSQI resulted from the participants working both day and night and the participants working only during the day ($p<0.001$).

4. Discussion

This study's findings, which were carried out to examine the coronavirus anxiety and sleep quality of nurses during the COVID-19 pandemic, were discussed in line with the literature.

The nurses included in the study identified the positive, meaningful relationship between COVID-19 anxiety and sleep quality. Participants were found to have low COVID-19 anxiety levels but poor sleep quality. In parallel with the result of our study, a study carried out by Hoşgör et al. (2020) on health personel states that the anxiety level related to COVID-19 is low (Hoşgör et al., 2020). Unlike the results of our study, there are studies in the literature that indicate a high level of anxiety among healthcare workers. (Li et al., 2020; Yeşil Bayülgen et al., 2021). The level of anxiety data of the nurses related to COVID-19 obtained from our study differs from the literature. This is because the nurses keep up with daily information regarding COVID-19 and try to implement the necessary measures in this context. However, more descriptive and experimental work is needed in this area.

The survey findings revealed a significant difference between COVID-19 anxiety and gender. The anxiety levels of female nurses COVID-19 were found higher than that of male nurses. There are several studies in the literature that stress that the significant difference between gender and COVID-19 anxiety is due to women (Havlioğlu & Demir, 2020; Talo Yıldırım et al., 2020; Li et al., 2020; Lai et al., 2020; Polat & Coşkun, 2020; Alper Ay & İçen, 2021; Labrague & De Los Santos,2021; Çakmak & Öztürk 2021; Arpacıoğlu et al., 2021; Mora-Magaña et al., 2022). In this context, our study resembles the extracted point mentioning a significant difference between COVID-19 anxiety and female gender in national and international literature. It can be said that this result can be observed because women have responsibilities at both home and work, they have a role of spouse, mother and son, they strive to protect their loved ones/relatives from COVID-19 and the majority of the nursing profession is made up of women.

In this study, we observed a statistically significant difference between COVID-19 anxiety and marital status. It is fair to say that married nurses have higher anxiety due to the pandemic. A study by Li et al. has shown a significant relationship between anxiety and marital status (Li et al., 2020). A study conducted in parallel with the results of our study highlights that married nurses have a higher level of anxiety than single ones (Labrague & De Los Santos, 2021). Another study has also found that anxiety is high among married health workers (Ersoy et al., 2020). This is mainly attributable to married health workers' concerns about communicating COVID-19 with their spouses or children living in the same environment as hospitals.

In this study, it was observed that there was a statistically significant difference between the educational status of the respondents and COVID-19 anxiety. In contrast to our findings, a study by Yeşil Bayülgen et al. (2021) found no significant difference between educational status and COVID-19 anxiety. Kayaoğlu et al. (2021) demonstrated that while there is no meaningful relationship between the educational status of nurses and situational anxiety, a significant difference occurs between persistent levels of anxiety. Our study indicates that Bachelor's Degree nurses are more concerned about COVID-19. This is thought to be due to individual differences.

Our study revealed a significant difference between the COVID-19 anxiety of nurses and the chronic disease state. Nurses with chronic disease were found to have a higher level of anxiety about COVID-19 compared with those without chronic disease. Talo Yıldırım et al. (2020) states that with chronic diseases have higher health concerns than those without chronic diseases who healthcare professionals at a COVID-9 pandemi study conducted on healthcare professionals. Individuals with chronic disease are expected to have more severe symptoms of COVID-19 than those with health conditions, and the idea of receiving treatment in intensive care may increase their level of COVID-19 anxiety.

In this study, no significant difference was detected between the COVID-19 anxiety of the nurses and the age, monthly income level, educational status, mode of work and total duration of work. On the contrary, our findings reveal overlapping points with the ones belonging to Labrague and De Los Santos (2021) in terms of age, Alper Ay and İçen (2021) in terms of monthly income level, Havlioğlu and Demir (2020) in terms of education level, Yeşil Bayülgen et al. (2021) in terms of total working time in the profession.

Akıncı and Başar (2021), which are in line with the research findings in terms of sleep quality, found that health personnel had lost significant sleep quality during the COVID-19 pandemic. Similarly, a study by Tasdemir Yigitoglu et al. (2021) found that most of the participants have poor sleep quality. A study by Xiao et al. (2020) concludes that health care personnel have poor quality sleep. Şayık et al. (2021) meta-analysis has shown that medical personnel working during the COVID-19 pandemic have poor sleep quality. Our research on sleep quality is consistent with national and international literature.

According to the data obtained, a significant difference was found between the nurses' sleep quality and age variables included in the study. It is observed that the sleep quality of nurses in the 21-30 age group is worse than that of other age groups. Similar to the results of our study, Akıncı and Başar (2021) have found that sleep quality is poor in the group with an average age. This is thought to be due to the limited duration of clinical experience of young nurses, especially in the early years of their profession, their excessive work in intensive areas and during night shifts, and the time duration of adjusting to the clinic.

Our study has determined the statistical significance between nurses' sleep quality and marital status. This can be interpreted as the quality of sleep of single people being worse than married ones. A study by Karagozoglu and Bingöl (2008) has shown that single nurses have worse sleep quality.

A significant difference was found between the nurses' income level and sleep quality included in the study. The nurses' sleep quality was worse, stating that their income was less than an expense. A study investigating the sleep quality of nurses has shown similarities with our study. It has been detected that there is a statistically significant difference between the sleep quality overall scores of nurses based on the income level of the nurses and that the total PSQI point average of the nurses with less income than the income expense is higher than or equal to income expense (Doğan et al., 2019). Therefore, the adverse living conditions caused by low-income levels affect sleep quality.

In this study, it was observed that there was a statistically significant difference between education and sleep quality. Contrary to our findings, studies on education status and sleep quality have not found any significant difference between education and sleep quality (Akıncı & Başar, 2021; Demirtürk Selçuk & Demirbağ, 2021; Wang et al., 2020; Çetinol & Özvurmaz, 2018). The findings of our study indicate that health high school graduates have poorer sleep quality. This is associated with the fact that people who graduated from health vocational high school start working at an early age.

In this study, a significant difference was detected between the work schedules of nurses and sleep quality. It has been observed that this difference is worse for nurses working with a day-to-night shift

system than for nurses working with only day shifts or working only at night. This finding is similar to that of Günaydın (2014). It can be associated with disrupting the sleep-wake rhythm in nurses who work with a shift system that changes during the day and night and causes circadian rhythm disorders (Akıncı & Orhan, 2016).

Our study determined that the participants' total duration of work in the profession and their sleep quality are significant. It has been established that the quality of sleep of nurses who have worked for less than ten years in the profession is worse. Tasdemir Yigitoglu et al. (2021) report that health personnel with 1-5 years' experience have poor sleep quality. Zhang et al. (2020) found a significant relationship between their total score and working year.

Our study did not find any significant difference between the sleep quality of nurses and gender, educational status or chronic disease status. Therefore, our findings are Wang et al. (2020) eflecting gender and educational status and have consequences that overlap with Akıncı & Başar (2021) on chronic disease status.

5. Conclusion and Suggestions

As a result, it has been concluded that COVID-19 anxiety levels were low, and sleep quality was poor in nurses working at the hospital during the pandemic. Furthermore, it was detected that anxiety is affected by gender, marital status, education and chronic disease state; however, sleep quality is affected by age, marital status, income level, education, work schedules and total duration of work in the profession.

Nursing is a professional group that stays with the patients for a long time. Poor sleep quality is expected in nurses with an intensive day and night shift system. Therefore, it was determined that the nurses' knowledge of COVID-19 during the pandemic has reduced anxiety. More interventional studies should be conducted in different studies to improve nurses' sleep quality with larger sample groups.

Nurses should be strengthened through sustainable physical and psychological initiatives to reduce coronavirus anxiety and improve sleep quality in the COVID-19 pandemic. Notably, in future studies on this subject, in order to increase nurses' sleep quality and reduce the anxiety of COVID-19 programs, their effectiveness should be evaluated.

Research Limits

The limitation of this study; coronavirus anxiety and sleep quality were evaluated using scales only. Therefore, the data obtained as a result of the study is limited to the self-statements of participants in the online platform and cannot be generalized.

Declerations:

This article was not produced from the thesis study. It was not presented as a verbal /poster presentation at any meeting. Acknowledgements**:** We thank the nurses participating in the study. Ethical aspects of research**:** Written permission from the Department of Ethics of Human Research at Erzincan Binali Yıldırım University (No: 2020/08-09) was obtained. Permission was obtained from the authors, who performed the validity and reliability of the scale, via e-mail. Author contributions: Idea: KA, MÖ, SGG; Design: KA, MÖ, SGG; Inspection: KA, MÖ, SGG; Resources: KA, MÖ, SGG; Materials: KA, MÖ, SGG; Data collection and / or interpretation: KA, MÖ, SGG; Literature research: KA, MÖ, SGG; Writing: KA, MÖ, SGG; Critical review: KA, MÖ, SGG.

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