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Health Anxiety and Sleep Quality of Nurses and Midwives in Pandemic

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ABSTRACT

The aim of the study is to determine the health anxiety and sleep quality of nurses and midwives during the pandemic. The study sample comprised 126 nurses and midwives working in a district state hospital between February and June 2021. Data were collected using the Health Anxiety Scale and the Pittsburgh Sleep Quality Index. The data were evaluated using the SPSS 21 program. The mean age of the participants was 33.00±8.72, with 40.5% being over 40 years old. A majority, 88.1%, were female, 76.2% were married, and 69% were university graduates. There was a significant relationship between the working time of the nurses and midwives participating in the research and their colleagues' COVID-19 test positivity, as well as the Health Anxiety Scale. Educational status, marital status, length of work in the profession, and the department they work in showed statistically significant differences in the average scores obtained from the Pittsburgh Sleep Quality Index. A moderately significant relationship in the positive direction was found between the total mean scores of the Health Anxiety Inventory of the nurses and midwives and the Pittsburgh Sleep Quality Index (r= .559, p<0.001). In our study, it was determined that healthcare workers experienced health anxiety and sleep problems during the pandemic, with certain variables having a more significant impact on this situation. Considering the influencing variables in this process, it is recommended that nurses and midwives receive psychosocial support.

Pandemide Hemşire ve Ebelerin Sağlık Anksiyetesi ve Uyku Kalitesi

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ÖZET

Araştırmanın amacı, pandemide hemşire ve ebelerin sağlık anksiyetesi ve uyku kalitesini belirlemektir. Çalışma örneklemini, Şubat-Haziran 2021 tarihleri arasında bir ilçe devlet hastanesinde çalışan 126 hemşire ve ebe oluşturmuştur. Veriler, Sağlık Anksiyetesi Ölçeği ve Pittsburgh Uyku Kalitesi İndeksi kullanılarak toplanmıştır. Verilerin değerlendirmesinde SPSS 21 programı kullanılmıştır. Katılımcıların yaş ortalaması 33.00±8.72, %40.5'inin 40 yaş üzeri, %88.1'inin kadın, %76.2'sinin evli, %69'unun üniversite mezunu olduğu görülmektedir. Araştırmaya katılan hemşire ve ebelerin meslekteki çalışma süresi ve iş arkadaşında COVID-19 testi pozitif çıkma durumu ile Sağlık anksiyetesi ölçeği arasında anlamlı ilişki olduğu bulunmaktadır. Eğitim durumu, medeni durum, meslekteki çalışma süresi ve çalıştığı bölüm ile Pittsburgh Uyku Kalitesi İndeksinden aldıkları puan ortalamalarındaki farkın istatistiksel olarak anlamlı olduğu görülmektedir. Hemşire ve ebelerin Sağlık Kaygısı Envanteri toplam puan ortalamaları ile Pittsburgh Uyku Kalitesi İndeksi arasında pozitif yönde orta düzeyde anlamlı bir ilişki olduğu belirlendi (r= .559, p<0.001). Çalışmamızda sağlık çalışanlarının pandemide sağlık anksiyetesi uyku problemleri yaşadığı ve bazı değişkenlerin bu duruma daha çok etki ettiği bulunmuştur. Bu süreçte etkileyen değişkenler göz önüne alınarak hemşire ve ebelerin psikososyal açıdan desteklenmesi önerilmektedir.

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INTRODUCTION

The 2019 Coronavirus (COVID-19) emerged in the city of Wuhan, Hubei province of China, in early December 2019 (Zhu et al., 2020). The World Health Organization classified the COVID-19 outbreak as an "international public health emergency" on January 30 and defined it as a global epidemic on March 11, owing to the occurrence of COVID-19 cases in 113 countries outside of China, where the initial outbreak originated, and the subsequent spread and severity of the virus. Studies on COVID-19 in our country commenced on January 10. The first meeting of the Scientific Advisory Board of the Ministry of Health was held on January 22, 2022. The first COVID-19 case in Turkey was reported on March 11 following neighboring countries such as Europe and Iran (Yücel & Görmez, 2020).

The COVID-19 pandemic, with its profound impact on health services globally, continues to be a source of concern. The psychological toll on healthcare workers has been severe, significantly affecting their mental health as they grapple with increased risk of exposure, overwhelming workloads, and constant changes in their usual work environment during this process (Shanafelt et al., 2020). In 2020, declared by the World Health Organization as the "Year of the Nurse and Midwife," the nursing profession gained heightened global attention due to the challenges posed by the COVID-19 pandemic. Throughout history, nurses have sought to articulate the significance of their profession, its purpose, and indispensability. The year 2020 marked a turning point, as nurses began to assert themselves as a "Nurses Leading Voice in World Health" (International Council of Nurses, 2020). Nurses and midwives have been at the forefront, playing a crucial role in patient care during the COVID-19 cases (Choi et al., 2020; Jackson et al., 2020; She et al., 2020; Smith et al., 2020). In this process, the fundamental concept of "care," which is the core purpose of nursing, has gained prominence, particularly with a surge in the number of infected patients in a very short time and a heightened need for intensive care (Hachisu & Suzuki, 2018; Pedrazza et al., 2018).

Nurses and midwives, integral members of the healthcare team, operate in sensitive areas that demand attention and bear witness to negative life events (Ergün et al., 2016). Health anxiety, a psychological phenomenon, manifests with the belief that an individual is under significant threat to their health, subsequently triggering both physical and emotional anxiety symptoms (Özdelikara et al., 2018). A correlation exists between nurses' stress levels and sleep quality (Xiao et al., 2020). Adequate sleep is essential for daily functioning, and prolonged sleep disturbance can lead to severe complications related to human physiology (Krupa & Ozga, 2019). Nurses and midwives encounter heightened stress attributed to role ambiguities, heavy workloads, and the demands of shift work (Ergün et al., 2016; Faraji et al., 2019). It is believed that these challenges are exacerbated during the COVID-19 pandemic. In a study, it was revealed that following the onset of the COVID-19 pandemic, 36.3% of nurses engaged in reading books on mental health, 50.4% participated in activities to enhance coping through social media, and 17.5% sought professional psychological support (Kang et al., 2020).

Each day, they contend with patients suspected or confirmed to have a virus that is currently wreaking havoc. The core focus of our research was to demonstrate the extent of insomnia severity among healthcare professionals (Krupa & Ozga, 2019). Elevated levels of stress and anxiety are recognized to adversely impact sleep quality and give rise to psychological issues, as individuals undergoing stress often struggle to initiate sleep and frequently awaken during their sleep. The literature indicates a robust connection between nurses' stress levels and sleep quality (Xiao et al., 2020). For this reason, the goal is to assess the health anxiety and sleep quality experienced by nurses and midwives during the COVID-19 pandemic. To achieve this, answers were sought for the following questions:

1- Do the mean scores of the Health Anxiety Inventory and Pittsburgh Sleep Quality Index differ significantly among nurses and midwives based on their descriptive characteristics?

2- Is there a correlation between the Health Anxiety Inventory and the Pittsburgh Sleep Quality Index for nurses and midwives?

METHOD

Research Design

This study was a descriptive correlational research conducted between February and June 2021.

Study Group

The study population comprised nurses and midwives employed in a district hospital (n: 146). Sample selection was not randomized, and a sample of 126 nurses and midwives meeting the inclusion criteria was established. Data for the research were gathered through statements provided by the participants. Those nurses and midwives who chose not to partake in the study, did not respond to all interview questions, submitted incomplete forms, or withdrew from participation were excluded from the study

Research Instruments and Processes

The research data included a personal information form containing participant details, created by the researchers through a literature review. Additionally, data were collected using the Health Anxiety Scale and the Pittsburgh Sleep Quality Index.

Personal Information Form: The Personal Information Form, consisting of 10 questions, was developed by the researchers following a literature review (Kang et al., 2020; Li et al., 2020; Özdelikara et al., 2018). The form covers socio-demographic characteristics of nurses and midwives, including age, gender, marital status, having children, educational background, occupation, years of experience in the profession, department of work, previous positive test for COVID-19, and exposure to colleagues with COVID-19.

Health Anxiety Scale: The Health Anxiety Scale, developed by Salkovskis et al. in 2002, underwent a Turkish validity and reliability study conducted by Aydemir et al. in 2013. Comprising 18 items, the scale is scored between 0-3 for each item, where a higher score signifies a greater level of health anxiety. The internal consistency coefficient (Cronbach's alpha) for the scale was established as 0.91 in the study by Aydemir et al. in 2013. In the current study, the Cronbach's alpha value for the scale was determined to be 0.92.

Pittsburgh Sleep Quality Index (PUKI): The Pittsburgh Sleep Quality Index (PUKI), developed by Buysse et al. (1989), underwent adaptation into Turkish by Agargün et al. (1996). Comprising 19 items, the 18 scored questions within the scale encompass 7 components: Subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency, Sleep Disorder, Sleeping Drug Use, and Daytime Dysfunction. Each component is rated on a scale of 0-3 points. The total score, derived from the sum of the 7 components, ranges from 0 to 21. A total score exceeding 5 indicates "poor sleep quality." The Cronbach's alpha internal consistency coefficient for the scale was established as 0.83 in the original study by Buysse et al. (1989). In the present study, the Cronbach's alpha value for the scale was determined to be 0.72.

Data Analysis

The study data were analyzed using descriptive statistics, including arithmetic mean, median, standard deviation, and percentage distributions. For comparisons of mean values between groups, normality of the data was initially assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests. Continuous variables were analyzed using Student's t-test and Mann-Whitney U test, while Fisher Exact test and Pearson Chi-Square test were employed for categorical variables when comparing baseline data between the two groups. Comparison of mean values among more than two independent groups was

conducted using ANOVA and Kruskal-Wallis tests. In the comparison of repeated measures among independent groups, a T-test was employed when parametric assumptions were met, and the Wilcoxon test was used when they were not. Additionally, an intention-to-treat analysis was performed to account for missing data and prevent bias in the study. Data analysis was carried out using SPSS 21 software, and a significance level of $p<0.05$ was considered statistically significant. Furthermore, correlation analysis was executed to examine the correlation between the scales during follow-up periods.

RESULTS

When evaluating the distribution of nurses and midwives participating in the study based on their personal characteristics, the average age was 33.00±8.72. Notably, 40.5% of the participants were over 40 years old, 88.1% were women, 76.2% were married, and 78.6% had children. Furthermore, 69% of the participants held a university degree. In terms of professional characteristics, 61.9% were nurses, 50% had a work experience exceeding 10 years, 33.3% worked in the emergency department, and another 33.3% worked in the polyclinic. The study also indicated that 11.9% of participants had previously tested positive for COVID-19, while 59.5% reported colleagues with positive COVID-19 tests (Table 1).

Table 1

Socio-Demographic Characteristics of Nurses and Midwives (n=126)

Variable	n	(%)
Age (Years) ($\bar{X}$±SS)	33.00±8.72	
< 30	39	31.0
30-40	36	28.5
> 40	51	40.5
Gender		
Female	111	88.1
Male	15	11.9
Marital Status		
Married	96	76.2
Single	30	23.8
Children		
Yes	99	78.6
No	27	21.4
Education		
Health School	12	9.5
Associate degree	21	16.7
License	87	69.0
Postgraduate	6	4.8
Profession		
Nurse	78	61.9
Midwife	48	38.1
Working time in the profession		
Less than 5 years	36	28.6
5-10 years	27	21.4
More than 10 years	63	50.0
Depertment of work		
Emergency	42	33.3
Policlinic	42	33.3
Clinic	39	31.0
Intensive care	3	2.4
Previously positive test for COVID-19		
Yes	15	11.9
No	111	88.1
Those who had a colleague with COVID-19		
Yes	75	59.5
No	51	40.5

A significant relationship was observed between the working time of the participating nurses and midwives and the occurrence of a positive COVID-19 test in their colleagues, as well as with the Health Anxiety Scale. Additionally, there were significant associations between educational status, professional status, marital status, length of work in the profession, department, and the mean scores on the Pittsburgh Sleep Quality Index for nurses and midwives ($p<0.05$) (Table 2).

Table 2

Comparison of Descriptive Characteristics and the Health Anxiety Inventory and Pittsburgh Sleep Quality Index Mean Score of Nurses and Midwives (N=126).

Variable	Health Anxiety Inventory Mean ± SD	Pittsburgh Sleep Quality Index Mean ± SD
Age (Years)		
< 30	1.72±*0.34*	13.15±*2.53*
30-40	1.86±*0.59*	14.16±*1.93*
> 40	1.97±*0.47*	13.70±*1.23*
p	[b]*0.055*	[b]*0.421*
Gender		
Female	1.88±*0.50*	13.78±*1.68*
Male	1.72±*0.34*	12.80±*3.23*
p	[a]*0.110*	[a]*1.000*
Marital Status		
Married	*1.90±0.54*	*13.96±1.77*
Single	1.76±*0.25*	12.70±*2.23*
p	[a]0.395	[a]**0.007**
Children		
Yes	1.88±*0.53*	13.90±*1.74*
No	1.84±*0.32*	12.77±*2.43*
p	[a]0.912	[a]0.063
Education		
Health School	1.56±*0.35*	12.50±*1.73*
Associate degree	1.70±*0.38*	14.57±*1.43*
License	1.95±*0.51*	13.62±*2.01*
Postgraduate	1.69±*0.27*	13.50±*1.64*
p	[b]0.067	[b]**0.014**
Profession		
Nurse	1.84±*0.44*	13.30±*2.13*
Midwife	1.90±*0.55*	14.25±*1.40*
p	[a]0.838	[a]**0.002**
Working time in the profession		
Less than 5 years	1.71±*0.34*	13.08±*2.60*
5-10 years	1.76±*0.50*	14.55±*1.52*
More than 10 years	1.99±*0.51*	13.61±*1.50*
p	[b]**0.014**	[b]**0.035**
Depertment of work		
Intensive care	1.77±*0.55*	13.84±*1.85*
Clinic	1.94±*0.40*	13.00±*2.38*
Emergency	1.88±*0.50*	13.92±*1.11*
p	[b]0.176	[b]**0.002**
Previously positive test for COVID-19		
Yes	1.85±*0.69*	14.60±*3.50*
No	1.86±*0.45*	13.54±*1.61*
p	[a]0.812	[a]0.145
Those who had a colleague with COVID-19		
Yes	1.95±*0.51*	13.48±*2.20*
No	1.74±*0.41*	13.94±*1.44*
p	[a]**0.008**	[a]0.252

[a] *Man Witney U testi* [b] *Kruskal Wallis Test*

Table 3 reveals a moderately significant positive relationship between the total mean scores of the Health Anxiety Inventory for nurses and midwives and the Pittsburgh Sleep Quality Index (r= .559, p<0.001).

Table 3
Correlation Between the Health Anxiety Inventory and Pittsburgh Sleep Quality Index of Nurses and Midwives

SCALES	**Pittsburgh Sleep Quality Index**
	r
Health Anxiety Inventory	.559***

r=Pearson Correlation, *p<0.05, **p<0.01, ***p<0.001

DISCUSSION

In addition to exerting strong negative effects on physical health, frontline healthcare workers involved in the direct diagnosis, treatment, and care of patients with COVID-19 have been associated with an increased risk of experiencing symptoms of depression, anxiety, insomnia, and distress (Lai et al., 2020). This study aims to assess the health anxiety and sleep quality experienced by nurses and midwives working on the front lines during the COVID-19 pandemic process.

April-May 2021, encompassing our data collection period, marked a time of stringent measures in the battle against the pandemic. Subsequent to May, a phased return to normalcy commenced with the widespread administration of the COVID-19 vaccine throughout Turkey (Ministry of Interior, 2021). Upon evaluating the mean scores obtained from the scales in our study, it became evident that the Health Anxiety score and the Sleep Quality Index surpassed the average levels.

In a study conducted in the pre-pandemic literature, participants' sleep quality was reported to be at a moderate level. Interestingly, the same study observed that the sleep quality of participants aged 20-25 was significantly poorer (p<0.05), and as age increased, sleep quality improved (Çetinol & Özvurmaz, 2018). Another study evaluating the anxiety levels of nurses found that 68.4% of the nurses experienced moderate depressive symptoms, and 51.9% experienced moderate anxiety symptoms (Zengin & Gumus, 2019).

When examining studies conducted on the same subject during the pandemic, Galehdar et al. (2020) found in their data analysis that environmental pollution and the increased risk of nurses contracting infections during sleep led to reduced rest during night shifts and, in some cases, complete sleep deprivation, resulting in sleep disorders. Numerous studies, including ours, indicate a significant prevalence of mental disorders among healthcare professionals during the pandemic, such as depression (50.4%), high anxiety (44.6%), insomnia (34%), and stress (Lai et al., 2020; Pappa et al., 2020). These findings suggest that midwives and nurses may have experienced anxiety and sleep problems even before the pandemic, but the intensity of these problems heightened during the pandemic.

In our study, a comparison of sociodemographic data and the mean scores obtained from the health anxiety scale revealed that the health anxiety score averages of midwives and nurses who have been working for more than 10 years and those whose colleagues tested positive for COVID-19 were statistically higher. This aligns with the findings of Li et al. (2020), who also identified a significant relationship between working hours and health anxiety. However, in contrast to our study, Havlioğlu and Demir (2020) did not find a significant relationship between working hours and anxiety levels in their research. It is speculated that the discrepancy in results may be attributed to differences in the sample groups across studies.

The COVID-19 outbreak has led to heightened stress and increased uncertainty for healthcare workers, who often face traumatic events and witness patient deaths (Vagni et al., 2020). Studies focusing on the anxieties experienced during patient care in the fight against COVID-19 indicate that healthcare professionals endure elevated levels of depression, anxiety, insomnia, and restlessness (Lai et al., 2020; Ornell et al., 2020). Contracting the COVID-19 virus has been identified as a factor that heightens anxiety levels. Additionally, concerns about colleagues testing positive for COVID-19 contribute to increased health anxieties.

In our study, a comparison of sociodemographic data and the mean scores obtained from the Pittsburgh Sleep Quality Index revealed that the sleep index mean scores of midwives and nurses who participated in the research were statistically higher among those who were married, had a university-level education, worked as midwives, had 5-10 years of professional experience, and worked in intensive care and emergency services. A parallel finding was observed in a study on the general public, where there was a statistically significant difference between education level and sleep problems (Zhao et al., 2021).

Galehdar et al. (2020) noted in their data analysis that healthcare workers, including nurses, faced challenges in establishing close contact with their family members due to the fear of being potential carriers of the virus. Nurses expressed ongoing fear and anxiety about the possibility of transmitting the virus to their families when returning home from work. For instance, one participant, a mother of a four-year-old child, shared her concerns, stating, "... I am more worried about my daughter, my daughter is only four years old ... I am very stressed; I can't let anyone take her from me. This is so hard…." Given these findings, it is suggested that married individuals may experience insomnia problems due to concerns for the well-being of their families. In a study evaluating the relationship between sleep quality and working hours, contrary to our study, Zhao et al. (2020) reported that no significant relationship was found.

The observed difference in sleep quality between midwives and nurses in our study compared to Zhao et al. (2020) could be attributed to sociodemographic variations within the sample groups. Midwives typically work during the daytime, especially in family physicians and health homes. However, during the pandemic, midwives were compelled to stay on duty and work in different units, leading to an increase in their already substantial responsibilities (Bay & Atas, 2021). This heightened workload is believed to contribute to more sleep problems among midwives compared to nurses. In a study by Kıraner et al. (2020), individuals working in intensive care units faced challenges such as not taking a shower after work, avoiding staying in their own homes due to the risk of contamination, and having to return to work without adequate rest. Consequently, it is suggested that units like intensive care and emergency may experience more insomnia due to limited opportunities for rest.

Emotions such as fear, unhappiness, hopelessness, and helplessness, arising from uncertainty and illness, create intense strain. Naturally, all these negative emotions have a detrimental impact on the sleep quality of individuals (Xiao et al., 2020). In our study, correlation analysis revealed a moderately significant positive relationship between health anxiety and the sleep quality index. This finding aligns with a cross-sectional study conducted among 180 medical professionals in Wuhan, involved in the management of COVID-19, which reported poor sleep quality and high stress-related symptoms during a 1-month observation period (Ho et al., 2020). Numerous studies in the literature consistently demonstrate that an increase in stress levels has a direct adverse effect on sleep quality, reinforcing the findings of our research (Çıtak & Pakdemir, 2020; Zhao et al., 2021).

LIMITATIONS

This study is subject to two limitations. Firstly, the cross-sectional nature of our study precludes establishing causal relationships between variables. Secondly, our study did not encompass all nurses and midwives involved in providing care for patients with COVID-19, potentially impacting the generalizability of our findings.

CONCLUSION

Taking into account all these results, it becomes evident that the pandemic has a detrimental impact on the mental health and sleep quality of healthcare workers. Furthermore, significant relationships have been identified between working time and the occurrence of a colleague testing positive for COVID-19 with the health anxiety scale. Additionally, marital status, education status, working time, and the specific unit where one works have shown associations with the sleep quality index. These findings collectively underscore the multifaceted challenges healthcare workers face during the pandemic, affecting both their psychological well-being and sleep patterns. Considering the possibility of future pandemic processes, it is deemed crucial to incorporate preparatory initiatives aimed at boosting the workforce of healthcare professionals. This involves increasing their education levels, fortifying social support systems, and enhancing professional knowledge and skills for potential future pandemics. Providing opportunities to disseminate the findings of studies conducted in this field and sharing employees' experiences regarding the process can be instrumental in raising awareness among healthcare professionals. Moreover, it is advisable for all healthcare professionals to seek assistance from psychologists available 24/7, who can evaluate their well-being and assist them in coping with potential stress and depression during such pandemic scenarios.

Ethical Approval

This study adhered to the principles of the Helsinki Declaration. Ethical approval was granted by Burdur Mehmet Akif Ersoy University's Non-invasive Clinical Trials Ethics Committee on August 20, 2020 (Approval Number: GO 2020/190). The study's objective was clearly communicated to the participants, assuring them of their right to refuse participation or withdraw from the study at any point without facing repercussions. All scales utilized in the study underwent validity and reliability studies, and permission to use these scales was obtained through email correspondence with the original authors.

Conflict of Interest

No conflict of interest.

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Author Contributions

Design: NT, SUY, Data collection or processing: NT, SUY, Analysis or interpretation: NT, Literature search: NT, SUY, Writing: NT, SUY

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