AN ANALYSIS ON SLEEP QUALITY OF THE HEALTHCARE PROFESSIONALS DURING THE COVID- 19 PANDEMIC

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ABSTRACT

Introduction*: The aim of the study was to examine the sleep quality of healthcare professionals affected by the challenges they face during the pandemic.*

Materials and methods*: An online survey was applied to the health care professionals who served in clinics and the departments established for pandemic and in pediatric/adult emergency rooms during the Covid-19 outbreak. Pittsburgh Sleep Quality Index (PSQI) and online survey consisting of demographic information were used to evaluate the healthcare professionals' sleep quality. SPSS 23.0 was used for statistical analysis.*

Results*: 153 healthcare professionals were included in the study. 67.3% of them (n=103) were female and 32.7% (n=50) were male. The average PSQI of the participants was 10,61±6,35. It was10.22±6,31 for males, and 10.81±6,39 for females. Most of the participants (76.5%) (n=117) received the score above 5 points demonstrating bad sleep quality. No statistically significant relationship was found between the variables and the sleep quality. However the average PSQI was found to be higher than the level expected.*

Conclusion*: It is known that sleep disorders is a common problem among the healthcare professionals working in busy and risky areas. It is clear that difficult working conditions and accordingly anxiety and depression can have a significant effect on sleep quality. Therefore, healthcare professionals will work more productively and willingly by decreasing the workload and arranging the working hours alternately during periods like pandemic when the workload is high and risky.*

Keywords*: COVID-19, sleep, healthcare professionals.*

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Introduction

Corona viruses are single-stranded and enveloped viruses. SARS-COV2 is a new type of corona virus that belongs to Betacoronavirus, a member of the family Coronaviridae. The new coronavirus called SARS-COV2 (Severe Acute Respiratory Syndrome Coronavirus 2) associated with pneumonia, was first identified in December 2019 in Wuhan City, Hubei Province of China. The virus has spread across China and all over the world in the following weeks. (1). The World Health Organization (WHO) declared pandemic on January 30, 2020 and called this outbreak as COVID-19 on February 12, 2020[(1)]. The first confirmed coronavirus case was announced in Turkey on March 11, 2020. The disease is transmitted through droplets and also transmitted through the respiratory secretion of asymptomatic people. The COVID-19 pandemic is an internationally concerning community health condition and it poses difficulty against psychological strength[(2)].

There is a significant relationship between the psychological stress prevalence level and poor sleep quality[(3)].

Sleep quality is an important indicator of health. Good sleep quality does not only help the health care professionals work more efficiently to treat patients, but also maintains optimal immune function to prevent infection. Therefore, sleep quality is an important indicator of health[4].

The healthcare professionals may show signs of stress, anxiety, and depression, in cases such as high risk of infection during outbreaks, and accordingly not being able to contact their families, and while working intensively. This can cause insomnia and sleep quality disorders[5].

The aim of the study was to evaluate the quality of sleep of the healthcare professionals during the pandemic.

Materials and methods

The study which was conducted on May 2020 was an analytical cross-sectional study. The online survey was carried out after receiving the consent of the healthcare professionals serving during the COVID-19 outbreak included in the study. The approval of the study was obtained from Gazi University Ethics Committee with the decision numbered 05, dated 09.05.2020 and research code 2020-279.

Pittsburgh Sleep Quality Index: PSQI has been developed by Buysse et. al[6] and adapted into Turkish by Ağargün et. al[7]. PSQI is a 19-item self-report questionnaire assessing sleep quality and disorder over a 1-month time interval. It consists of 24 questions. 19 of them are self-report questions and 5 are the ones to be answered by the spouse or the roommate. The scored 18 questions consist of 7 components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, sleep medication use and, daytime dysfunction due to sleepiness. Each component is weighted on a 0–3 interval scale. The total score is calculated by totaling the seven component scores. Overall score ranges from 0 to 21. Overall score above 5 indicates poor sleep quality[8].

The data obtained were evaluated using SPSS 23.0 statistical program. The possible effects of the factors considered together were analyzed by means of factorial Anova test. The characteristics of the study group were revealed by using descriptive analysis (number, percentage, average and standard deviation) The data were evaluated by using analysis methods such as Mann-Whitney-U test and Pearson's chi-squared test. If the p-value is less than 0.05, they are accepted statistically significant.

Results

153 healthcare professionals participated in our study. 67.3% of them (103) were female and 32.7% (50) were male. The mean age was33,4±5,7 and it was30,5±6 for men and 32,7±5,4 for women. Sociodemographic information are shown in Table 1.

	Male n(%)	Female n(%)	Total n(%)
Profession			
Research assistant	12(24)	43(41,7)	55(35,9)
Attending physician	3(6)	13(12,6)	16(10,5)
Lecturer Doctor	7(14)	11(10,7)	18(11,8)
Minor Resident	16(32)	21(20,4)	37(24,2)
Minor Specialist	12(24)	14(13,6)	26(17,0)
Nurse	0(0)	1(1)	1(0,7)
Schedule			
Only daytime	14(28)	30(29,1)	44(28,8)
Only nighttime	0(0)	2(1,9)	2(1,3)
Night and day shift	10(20)	22(21,4)	32(20,9)
Shift (1-5 shifts a month)	4(8)	14(13,6)	18(11,8)
Shift (6-7 shifts a month)	13(26)	14(13,6)	27(17,6)
Shift (more than 7 shifts a month)	6(12)	11(10,7)	17(11,1)
Other	3(6)	10(9,7)	13(8,5)
Are you happy with your working schedule?			
Yes	28(56)	69(67)	97(63,4)
No	16(32)	14(13,6)	30(19,6)
Indecisive	6(12)	20(19,4)	26(17,0)
Chronic disease			
Yes	8(16)	19(18,4)	27(17,6)
No	42(84)	84(81,6)	126(82,4)
Chronic medication use			
Yes	3(6)	16(15,5)	19(12,4)
No	47(94)	87(84,5)	134(87,6)
Method of falling asleep			
Watching TV	16(32)	24(23,3)	40(26,1)
Reading a book	12(24)	30(29,1)	42(27,5)
Meditation/ praying	2(4)	5(4,9)	7(4,6)
Working out	0(0)	3(2,9)	3(2,0)
Drinking herbal tea	1(2)	11(10,7)	12(7,8)
Other	19(38)	30(29,1)	49(32,0)
Sleep duration	Average	Average	Average
Before COVID	6,7 hours	6,9 hours	6,8 hours
After COVID	6,8 hours	7,1 hours	7,0 hours

Table 1: Sociodemographic information of the participants.

No statistically significant relationship was found between the variables and PSQI. The average sleep quality score was found high and accepted as the indicator of poor sleep quality. No statistically significant relationship was found between PSQI score and gender and age; and there was no statistical difference between variables with respect to gender. The average PSQI of the participants was 10,61±6,35; this value was 10,22±6,31 for males, and 10,81±6,39 for females. Most of the participants (76,5%) (n=117) received a score above 5 points indicating bad sleep quality. (Table 2). The average PSQI of groups are shown in Table 3.

PSQI score	Male n(%)	Female n(%)	Total n(%)
0-5 score	12(24)	24(23,3)	36(23,5)
Above 5 score	38(76)	79(76,7)	117(76,5)

Table 2: Number and percentage of PSQI score range.

	Male	Female	Total	p
Profession				
Research assistant	10,58±4,96	10,49±6,40	10,51±6,07	
Attending physcian	10,00±6,55	10,77±6,85	10,63±6,59	
Lecturer Doctor	9,00±6,63	11,00±7,29	10,22±6,91	0,722
Minor Resident	12,13±7,22	10,38±6,36	11,14±6,71	
Minor Specialist	8,08±6,20	12,43±6,08	10,42±6,40	
Nurse	Ø	9,00(n=1)	9,00(n=1)	
Schedule				
Only daytime	10,21±6,27	10,60±7,38	10,48±6,98	
Only nighttime	Ø	13,50±0,70(n=2)	13,50±0,70(n=2)	
Night and day shift	9,20±6,71	11,09±6,02	10,50±6,20	
Shift (1-5 shifts a month)	10,25±7,71	10,25±7,71	11,72±6,93	
Shift (6-7 shifts a month)	12,85±6,094	10,50±6,02	11,63±6,05	0,183
Shift (more than 7 shifs a month)	6,83±5,26	10,45±5,26	9,18±5,39	
Other	9,00±7,00	9,20±6,39	9,15±6,23	
Are you happy with your working hours?				
Yes	9,54±6,49	11,06±6,37	10,62±6,41	
No	11,00±5,92	9,79±6,84	10,43±6,28	0,299
Indecisive	11,33±7,17	10,65±6,36	10,81±6,41	
Chronic disease				
Yes	11,50±6,07	9,95±6,81	10,41±6,53	0,405
No	9,98±6,39	11,00±6,30	10,66±6,33	
Chronic medication use				
Yes	12,00±5,56	11,19±6,97	11,32±6,64	0,703
No	10,11±6,39	10,74±6,31	10,51±6,32	
Method of falling asleep				
Watching TV	11,38±6,58	11,33±6,23	11,35±6,29	
Reading a book	10,75±6,04	10,47±6,81	10,55±6,53	
Meditation/ praying	9,00±0,00	11,80±7,25	11,00±6,08	
Doing sports	Ø	11,33±7,50(n=3)	11,33±7,50(n=3)	0,142
Drinking herbal tea	2,00(n=1)	11,27±6,51	10,50±6,76	
Other	10,27±6,80	10,33±6,28	10,00±6,37	

Table 3: Average PSQI scores.

Discussion

The working environment conditions are important for all occupational groups for a proper operation of the personnel and the relevant department[9]. However, it is clear that the working conditions of the risky occupational groups will become harder in risky periods. Improving the healthcare professionals' working conditions already being hard, during the outbreak or disasters, is particularly important for public health. As in many studies, the study conducted by Günaydın on nurses have revealed a significant relationship between sleep quality and working schedule[10]. Our study focusing on the COVID-19 pandemic did not find any statistically significant relationship between the sleep quality and working schedule. It is believed that it is because there are a lot of differences between working schedules.

Sleep, one of the most important component of life quality of the employee, is affected by several factors and working conditions are one of these factors. Due to risky and difficult working conditions, healthcare professionals' shifts and schedules should become flexible as much as possible, and it should be ensured that they go through the disaster / pandemic period with minor damage physically and mentally. The aim should be to minimize the sleep disorder defined as circadian rhythm caused by environmental and social conditions[11].

Many studies found a significant relationship between the presence of chronic disease and the increase in the number of chronically used drugs and decrease in sleep quality. However, a relationship regarding the effect of chronic disease and the use of medication was not found in the present study[12].

The present study have not revealed a relationship between falling asleep methods and sleep quality. However a study conducted on difficulty in falling asleep has found a statistically significant relationship causing a decrease in sleep quality[13].

In the study conducted on 180 healthcare professionals in China during the COVID-19 outbreak, the overall average score of PSQI was 8.5[14], while the overall average of PSQI score was 5.2[15]) in China, which consisted of 95 intern nurses working during the pandemic. In another study conducted on 60 healthcare professionals working in the pandemic hospital during the outbreak, the overall average PSQI score was found as 16. In our study, consistent with the literature, average PSQI score was found 10.5, and the sleep quality of healthcare professionals working during the COVID-19 outbreak was found to be poor. This has revealed that healthcare professionals fighting against the outbreak on the front line are under enormous stress physiologically and psychologically. Thus, working conditions should be improved and psychological support should be provided.

Conclusion

Sleep quality is one of the most important components of life quality and is affected by several factors. Physical and psychological variables may play a key role and many factors including genetic structure and occupation may affect the sleep. The physical and psychological exhaustion of employees in occupations at high risk during the periods such as natural disasters and pandemic is believed to decrease the sleep quality and accordingly the life quality. The most notable example is the situation experienced by healthcare professionals during the COVID-19 pandemic. It is important to increase the sleep quality by optimizing the working conditions especially for this occupational group both for the healthcare workers and their patients.

References

1) Zu ZY, Jiang MD, Xu PP, Chen W, Ni QQ, Lu GM, Zhang LJ.Coronavirus Disease 2019 (COVID-19): A Perspective from China.Radiology. 2020; 21: 200490.
2) Cuiyan Wang, Riyu Pan, Xiaoyang Wan, Yilin Tan, Linkang Xu, Cyrus S. Ho, and Roger C. Ho. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int J Environ Res Public Health. 2020 Mar; 17(5): 1729.
3) Almojali AI, Almalki SA, Alothman AS, Masuadi EM, Alaqeel MKThe prevalence and association of stress with sleep quality among medical students. J Epidemiol Glob Health. 2017; 7(3): 169-174
4) Lange T, Dimitrov S, Born J. Effects of sleep and circadian rhythm on the human immune system. Ann NY Acad Sci. 2010; 1193: 48-59.
5) Yao H, Chen JH, Xu YF. Patients with mental health disorders in the COVID-19 epidemic. Lancet Psychiatry. 2020; 7(4): e21.
6) Buysse DJ, Reynolds CF, Monk TH. The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry Res. 1989; 28: 193-213.
7) Ağargün MY, Kara H, Anlar O. Pittsburgh Uyku Kalitesi İndeksi'nin Geçerliği ve Güvenirliği. Turk Psikiyatri Derg. 1996; 7: 107-11.
8) Şenol V, Soyuer F, Pekşen Akça R, Argün M. The Sleep Quality in Adolescents and the Factors that Affect It. Kocatepe Med J. 2012; 13: 93-102.
9) Bayazıt Hayta A. Çalışma Ortamı Koşullarının İşletme Verimliliği Üzerine Etkisi. Gazi Üniversitesi Ticaret ve Turizm Eğitim Fakültesi Dergisi. 2007; (1): 41-21.
10) Akıncı E, Orhan FÖ. Circadian Rhythm Sleep Disorders Current Approaches in Psychiatry 2016;8(2):178-189.
11) Günaydın N. The Quality of Sleep and Effects on General Mental Health of Nurses Who Works in a State Hospital. Journal of Psychiatric Nursing 2014; 5(1): 33-40.
12) Fidancı i, İşcan G. Aile sağlığı merkezine başvuran yaşlılarda uyku kalitesinin, kronik hastalık ve ilaç kullanımı ile ilişkisinin değerlendirilmesi. Ankara eğitim ve araştirma hastanesi tıp dergisi. 2016; 49(3): 147-142.
13) Sari ÖY, Üner S, Büyükakkuş B, Bostanci EÖ, Çeliksöz AH, Budak M. Bir üniversitenin yurtta kalan öğrencilerinde uyku kalitesi ve etkileyen bazı faktörler. TAF Preventive Medicine Bulletin. 2015; 14(2): 93-100. doi:10.5455/pmb1-1408013434.
14) Xiao H, Zhang Y, Kong D, Li S, Yang N. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China. Med Sci Monit. 2020 Mar 5; 26: e923549.
15) Sheng X, Liu F, Zhou J, Liao R. Psychological status and sleep quality of nursing interns during the outbreak of COVID-19. Nan Fang Yi Ke Da Xue Xue Bao. 2020 Mar 30; 40(3): 346-350

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