DETERMINING THE FACTORS AFFECTING INSOMNIA OF NURSES WORKING IN INTENSIVE CARE UNITS AND THE SEVERITY OF INSOMNIA

YOĞUN BAKIM HEMŞİRELERİNİN UYKUSUZLUĞUNU ETKİLEYEN FAKTÖRLERİN VE UYKUSUZLUK ŞİDDETİNİN BELİRLENMESİ

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ABSTRACT

Purpose: The study was conducted to examine the factors which affect the insomnia of nurses working in the intensive care unit of a university hospital, and to determinate insomnia severity.

Methods: Although there are few studies evaluating nurses' insomnia, it is an important issue worldwide. The research was conducted with a cross-sectional and descriptive design with 149 nurses working in the Intensive Care Units of a university hospital. The data were collected with Data Collection Form and Insomnia Severity Index with face-to-face interview method. Descriptive methods and Chi-Square Test were used for statistical analyses, and $p<0.05$ value was considered to be statistically significant.

Results: It was determined that the mean age of the participants was 31.04±5.93, 54.4% worked at surgical Intensive Care Units, many of them had a weekly working duration of 40-48 hours, and 62.4% worked in shifts. It was also determined that 75.2% of the nurses experienced insomnia. The difference between gender, weekly working duration, working style, sleep onset latency, sleeping duration and insomnia severity status was found to be statistically significant ($p<0.05$). No statistically significant differences were detected between nurses' smoking status, drinking alcohol status, drinking coffee status, daytime coffee consumption, evening coffee consumption, tea drinking status, daytime tea consumption, evening tea consumption, sports and doing sports frequency, and insomnia severity ($p>0.05$).

Conclusions: It can be argued that the majority of nurses who participated in the study experienced insomnia and moderate insomnia, and this result may pose a threat for nursing care in Intensive Care Units.

Keywords: Insomnia, Insomnia Severity Index, Intensive Care Unit Nurses.

ÖZET

Amaç: Araştırma bir üniversite hastanesinin yoğun bakım ünitesinde çalışan hemşirelerin uykusuzluğunu etkileyen faktörleri ve uykusuzluk şiddetini belirlemek amacıyla yapıldı.

Materyal ve Metod: Hemşirelerin uykusuzluğunu değerlendiren az sayıda çalışma olmakla birlikte uykusuzluk, Dünya çapında önemli bir sorundur. Araştırma, bir üniversite hastanesindeki Yoğun Bakım Ünitelerinde çalışan 149 hemşire ile kesitsel ve tanımlayıcı tipte bir çalışmadır. Veriler; veri toplama formu ve Uykusuzluk Şiddeti İndeksi (UŞİ) kullanılarak yüz-yüze görüşme yöntemi ile toplandı. İstatistiksel analizler için tanımlayıcı yöntemler ve Ki-Kare Testi kullanıldı ve $p<0.05$ değeri istatistiksel olarak anlamlı kabul edildi.

Bulgular: Katılımcıların yaş ortalamasının 31.04±5.93 olduğu, %54.4'ünün cerrahi yoğun bakım ünitelerinde çalıştığı, büyük çoğunluğunun haftalık çalışma süresinin 40-48 saat arası değiştiği ve %62.4'ünün vardiya şeklinde çalıştığı belirlendi. Ayrıca hemşirelerin %75.2'nin uykusuzluk yaşadıkları belirlendi. Çalışmada; cinsiyet, haftalık çalışma süresi ve çalışma şekli, uykuya dalma süreleri ve uyuma saati ile uykusuzluk şiddeti durumları arasındaki farkın istatistiksel olarak anlamlı olduğu saptandı ($p<0.05$). Hemşirelerin; sigara içme, alkol kullanma, kahve içme, gündüz kahve tüketimi, akşam kahve tüketimi, çay içme, gündüz çay tüketimi, akşam çay tüketimi, spor yapma ve spor yapma sıklığı ile uykusuzluk şiddeti durumları arasında istatistiksel olarak anlamlı fark bulunmadı ($p>0.05$).

Sonuç: Araştırmaya katılan hemşirelerin büyük bir kısmının uykusuzluk ve orta seviyede uykusuzluk yaşadığı, bu sonucun Yoğun Bakım Ünitelerinde hemşirelik bakımı için bir tehdit oluşturabileceği söylenebilir.

Anahtar kelimeler: Uykusuzluk, Uykusuzluk Şiddeti İndeksi, Yoğun Bakım Hemşireleri.

INTRODUCTION

Insomnia is a clinically common complaint and is difficult to evaluate (Bastien et al. 2001; Veldi et al. 2005). Regardless of its appearance, it is experienced as a serious health problem affecting the quality of life deteriorating the structure and prognosis of the accompanying disorders. Insomnia may negatively affect school or business success, social life, marriage and other relationships, in short, quality of life in individuals (Yetkin and Aydin 2014).

Age, gender, diseases, physical activities, emotional state, lifestyles, working conditions, alcohol and stimulants, consumption of tea or coffee, certain medications can be listed as spiritual and physiological factors among the factors that affect insomnia (Karatay et al. 2016).

It is a common belief that nurses have to maintain working styles, which do not agree with their natural biological rhythms, which can affect sleep quality as a stressor, create insomnia in people, decrease the satisfaction of employees from their work, decrease working performance and quality of patient care and treatment services, increase the risk of patient safety and medical mistakes, and be reflected on quality of life negatively (Karakaş et al. 2017; Abdalkader and Hayajneh 2008). For nurses, working in Intensive Care Units (ICU) causes poor performance, fatigue, and insomnia during the day. Also, insomnia is more visible because nurses work in shifts in ICU (Havlioğlu et al. 2020; Axelsson et al. 2004). Working in shifts deteriorates the sleep-wake cycle, and causes various social problems along with physical, psychological, and social problems (Axelsson et al. 2004; Shao et al. 2010; Karakaş et al. 2017; Abdalkader and Hayajneh 2008). It is inevitable that nurses, especially in ICU, be physically and spiritually have full well-being, and that this will be given necessary importance to maintain this well-being (Karakaş et al. 2017).

Very few studies were detected investigating the insomnia of nurses, and it was concluded that there are inadequate studies conducted on insomnia, especially in Intensive Care Unit employee nurses, and that literature is improved in this regard. The present study was conducted to examine the factors that affect the insomnia of nurses who work at the ICU of a university hospital, and to determine insomnia severity.

MATERIALS AND METHODS

Type, Location and Time of the Study

This cross-sectional and descriptive study was conducted with nurses who worked at the ICU of a university hospital in Gaziantep between January 01 and February 20, 2018.

Universe and Sampling of the Study

The universe of the study consisted of 237 nurses who worked at the ICU of the hospital between the specified dates, and the sampling consisted of 149 nurses who represented 62.86% of the universe, and who volunteered to participate in the study.

Data Collection Tools

The study data were collected with the Data Collection Form and Insomnia Severity Index (ISI), which consisted of the questions on the descriptive characteristics of participants and questions to determine habits that might affect insomnia status. The Turkish validity and reliability study of the ISI, which was developed by Morin in 1993 (Morin 1993), was conducted by Boysan et al. in 2010 (Boysan et al. 2010) and its internal consistency coefficient (Cronbach Alpha) was found to be 0.79. This index was developed to determine the degree of insomnia symptoms as a self-reporting tool, and can be used by a clinician or another person (for example, spouse) to evaluate insomnia. It is a 5-Point Likert-type scale that consists of 7 items. Each question is scored between 0 and 4, and the total score of the scale varies between 0 and 28. In this scale, a score of 0-7 is interpreted as insignificant insomnia, 8-14 as insomnia, 15-21 as moderate insomnia, and 22-28 as severe insomnia (Altınöz and Demir 2017). The Cronbach Alpha value was calculated as 0.74 for this study.

Collection of the Data

The data were collected between the specified dates, two days a week, outside shift change times, during day and night hours. After the necessary explanations were given to intensive care employees by the researchers on the study, oral/written consents were obtained, and the data collection forms were given. The completed forms were collected back by the researchers on the same day. A total of 172 data collection forms were given in the study, and 151 were received back. A total of 149 health workers, who completed the data collection forms, were included in the study.

Ethical Aspect of Study

To conduct the study, permission was obtained from Hasan Kalyoncu University, Health Sciences Faculty, Ethics Committee (Ethics Committee Decision No:2017/13), from the administration of the university hospital (Study Permission Number:91786782/663.09/E), and written consents were obtained from the participants.

Analysis of the Data

The data were evaluated with IBM SPSS 22. In the representation of the descriptive data, frequencies (number-n, percentage-%), arithmetic mean values, and standard deviation values were used. Total scores of ISI were calculated and averaged. The Chi-Square Test was used for statistical comparisons. $p < 0.05$ was accepted as the indicator of statistical significance.

RESULTS

When the descriptive and working characteristics of the participants are examined, it was found that the mean age was 31.04±5.93, more than half were between the ages of 21 and 30, 52.3% were women, 57.7% were married, and many of them were residents within the city. It was also found that 54.4% of the participants worked in surgical ICU, 27.5% worked in their profession for 10 years or more, 48.3% worked in ICU for more than 5 years, many of them had a weekly working time of 40-48 hours, and 62.4% worked in shifts (Table 1).

Table 1. Distribution of the Descriptive and Study Characteristics of Participants (N=149)

Descriptive and Study Characteristics		n	%
Age (Years)	21 - 30	80	53.7
	31 - 40	60	40.3
	41 - 50	9	6.0
Gender	Female	78	52.3
	Male	71	47.7
Marital Status	Married	86	57.7
	Single	63	42.3
Residence	City	133	89.3
	District	14	9.4
	Village	2	1.3
Intensive care unit worked at	NICU**, CIC***	23	15.4
	Internal Intensive Care Units	45	30.2
	Surgical Intensive Care Units	81	54.4
Professional years	4 years and less	59	39.6
	5-9 years	49	32.9
	10 years and above	41	27.5
Duration of Working at Intensive Care	Less than 1	26	17.5
	1 - 4 years	51	34.2
	5 years and above	72	48.3
Weekly Working Duration	40-48 hours	109	73.2
	49 hours and above	40	26.8
Working Style	Always daytime	35	23.5
	Always night time	21	14.1
	Shifts	93	62.4

*Standard Deviation **Neonatal Intensive Care Unit ***Children's Intensive Care

When the distribution of habits that affected the insomnia of nurses is examined in Table 2, it was found that 40.3% smoked, 10.7% used alcohol, 67.1% drank coffee, 90.6% drank tea, 39.6% did sports, and 11.4% did sports 3-4 days a week. When the distribution of the ISI scores of nurses was examined, it was found that 24.8% experienced insignificant insomnia, 52.3% experienced insomnia, 22.2% experienced moderate insomnia, and 0.7% experienced severe insomnia.

Table 2. Distribution of the Habits of the Nurses that Affect Insomnia and Insomnia Severity Index Scores (N=149)

Habits		n	%
Smoking Status	Yes	60	40.3
	No	89	59.7
Alcohol Use Status	Yes	16	10.7
	No	133	89.3
Drinking Coffee Status	Yes	100	67.1
	No	49	32.9
Daytime Coffee Consumption Amount	None	66	44.3
	1 cup	42	28.2
	2 cups	31	20.8
	3 cups and above	10	6.7
Evening Coffee Consumption Amount	None	91	61.1
	1 cups	36	24.2
	2 cups	16	10.7
	3 cups and above	6	4.0
Drinking Tea Status	Yes	135	90.6
	No	14	9.4
Daytime Tea Consumption Amount	None	19	12.8
	2 cups and less	46	30.9
	3-5 cups	66	44.3
	6-9 cups	8	5.4
	10 cups and above	10	6.7
Evening Tea Consumption Amount	None	53	35.6
	2 cups and less	33	22.1
	3-5 cups	47	31.5
	6-9 cups	10	6.7
	10 cups and above	6	4.0
Doing Sports Status	Yes	59	39.6
	No	90	60.4
Doing Sports Frequency	Now	90	60.4
	1-2 days a week	42	28.2
	3-4 days a week	17	11.4
Insomnia Severity Index Scores	Insignificant Insomnia	37	24.8
	Insomnia	78	52.3
	Moderate Insomnia	33	22.2
	Severe Insomnia	1	0.7

When the descriptive and working characteristics of the participants and their insomnia severity scores were examined in Table 3, no statistically significant differences were detected between age, marital status, place of residence, working durations in their professions, working times in ICU, the intensive care unit worked and insomnia severity (p>0.05). The rates of female nurses who experienced insomnia and moderate insomnia severity were higher than those of men, and the difference between gender and insomnia severity was statistically significant (p<0.05). Statistically significant differences were detected at higher rates between weekly working durations and insomnia severity of nurses who worked 49 hours and above a week (p<0.05). It was also found that nurses who worked in shifts experienced higher rates of insomnia and the difference between their working style and the severity of insomnia was at statistically significant levels (p<0.05).

Table 3. Comparison of the Descriptive and Study Characteristics of Participants and Insomnia Severity Situations (N=149)

Descriptive and Study Characteristics		Insignificant Insomnia	Insomnia	Moderate/Severe Insomnia	Total	χ^2, p
		n (%)	n (%)	n (%)	n (%)	
Age (Years)	21 - 30	14 (9.4)	45 (30.2)	21 (14.1)	80 (53.7)	5.942
	31 - 40	19 (12.8)	29 (19.5)	12 (8.1)	60 (40.3)	0.204
	41 - 50	4 (2.7)	4 (2.7)	1 (0.7)	9 (6.0)	
Gender	Female	13 (8.7)	44 (29.5)	21 (14.1)	78 (52.3)	6.119
	Male	24 (16.1)	34 (22.8)	13 (8.7)	71 (47.7)	0.047
Marital Status	Married	25 (16.8)	46 (30.9)	15 (10.1)	86 (57.7)	4.098
	Single	12 (8.1)	32 (21.5)	19 (12.8)	63 (42.3)	0.129
Residence	City	31 (20.8)	71 (47.7)	31 (20.8)	133 (89.3)	
	District	6 (4.0)	5 (3.4)	3 (2.0)	14 (9.4)	4.570
	Village	0 (0.0)	2 (1.3)	0 (0.0)	2 (1.3)	0.334
Intensive care unit worked at	NICU and CIC	7 (4.7)	10 (6.7)	6 (4.0)	23 (15.4)	
	Internal Intensive Care Units	12 (8.1)	21 (14.1)	12 (8.1)	45 (30.2)	11.398 0.495
	Surgical Intensive Care Units	18 (12.1)	47 (31.5)	16 (10.7)	81 (54.4)	
Professional years	4 years and less	10 (6.7)	31 (20.8)	18 (12.1)	59 (39.6)	5.039
	5-9 years	15 (10.1)	25 (16.8)	9 (6.0)	49 (32.9)	0.283
	10 years and above	12 (8.1)	22 (14.8)	7 (4.7)	41 (27.5)	
Duration of Working at Intensive Care	Less than 1 years	6 (4.0)	13 (8.7)	7 (4.7)	26 (17.4)	2.558
	1 - 4 years	10 (6.7)	27 (18.1)	14 (9.4)	51 (34.2)	0.634
	5 years and above	21 (14.1)	38 (25.5)	13 (8.7)	72 (48.3)	
Weekly Working Duration	40-48 hours	30 (20.1)	60 (40.3)	19 (12.8)	109 (73.2)	6.913
	49 hours and above	7 (4.7)	18 (12.1)	15 (10.1)	40 (26.8)	0.032
Working Style	Always daytime	15 (10.1)	17 (11.4)	3 (2.0)	35 (23.5)	15.672
		2 (1.3)	16 (10.7)	3 (2.0)	21 (14.1)	0.016
	Always Night time Shifts	20 (13.4)	45 (30.2)	28 (18.8)	93 (62.4)	

Table 4. Comparison of the Sleeping Habits of Participants and Insomnia Severity Index Status (N=149)

Sleeping Habits		Insignificant Insomnia	Insomnia	Moderate / Severe Insomnia	Total	χ^2, p
		n (%)	n (%)	n (%)	n (%)	
Getting to sleep duration	10 minutes and less	13 (8.7)	19 (12.8)	9 (6.0)	41 (27.5)	10.029
	11-30 minutes	19 (12.8)	43 (28.9)	11 (7.4)	73 (49.0)	0.040
	31 minutes and above	5 (3.4)	16 (10.8)	14 (9.4)	35 (23.5)	
Being Disturbed by Noise During Sleep	Yes	16 (10.7)	46 (30.9)	21 (14.1)	83 (55.7)	3.993
	No	8 (5.4)	14 (9.4)	7 (4.7)	29 (19.5)	0.407
	Sometimes	13 (8.7)	18 (12.1)	6 (4.0)	37 (24.8)	
Being Disturbed by Light During Sleep	Yes	19 (12.8)	51 (34.2)	19 (12.8)	89 (59.7)	4.733
	No	12 (8.1)	12 (8.1)	9 (6.0)	33 (22.1)	0.316
	Sometimes	6 (4.0)	15 (10.1)	6 (4.0)	27 (18.2)	
Daily Average Sleep Duration	5 hours and less	2 (1.3)	9 (6.0)	9 (6.0)	20 (13.4)	7.270
	6-8 hours	31 (20.8)	61 (40.9)	27 (14.8)	114 (76.5)	0.122
	9 hours and above	4 (2.7)	8 (5.4)	3 (2.0)	15 (10.1)	

Doing activities that facilitate getting to sleep	No	30 (20.1)	63 (42.3)	25 (16.8)	118 (79.2)	0.860
	Yes*	7 (4.7)	15 (10.1)	9 (6.0)	31 (20.8)	0.651
Sleeping time	Sleeping at the same hour everyday	12 (8.1)	10 (6.7)	2 (1.3)	24 (16.1)	26.110
	Sleeping at a different hour everyday	6 (4.0)	30 (20.1)	24 (16.1)	60 (40.3)	0.000
	Changing sleeping hour every now and then	19 (12.8)	38 (25.5)	8 (5.4)	65 (43.6)	
Daytime Sleeping Habit	Not sleeping	16 (10.7)	31(20.8)	14 (9.4)	61 (40.9)	0.128
	Sleeping**	21 (14.1)	47(31.5)	20 (13.4)	88 (59.1)	0.938

*Reading books, Drinking milk, Drinking herbal tea ** Sleeping every now and then, Sleeping everyday

The sleeping habits of intensive care nurses were compared with the insomnia severity scores in Table 4. Participants who had a falling into sleep duration of 10 minutes or less experienced a smaller amount of insomnia, and the difference between falling into asleep times and insomnia severity was at statistically significant levels (p<0.05). Similarly, it was also found that participants who slept at different hours each day experienced higher insomnia and moderate insomnia severity, and the difference between sleeping time and insomnia severity was at statistically significant levels (p<0.05). No statistically significant differences were detected between other sleeping habits and insomnia severity scores (p>0.05).

Table 5. Comparison of the Habits of Nurses with Insomnia Severity Index Status (N=149)

Habits		Insignificant Insomnia n(%)	Insomnia n (%)	Moderate/Severe Insomnia n (%)	Total n (%)	χ^2, p
Smoking Status	Yes	19 (12.8)	30 (20.1)	11 (7.4)	60 (40.3)	2.881
	No	18 (12.1)	48 (32.2)	23 (15.4)	89 (59.7)	0.237
Alcohol Use Status	Yes	5 (3.4)	6 (4.0)	5 (3.4)	16 (10.7)	1.611
	No	32 (21.5)	72 (48.3)	29 (19.5)	133 (89.3)	0.447
Drinking Coffee Status	Yes	19 (12.8)	57 (38.3)	24 (16.1)	100 (67.1)	5.608
	No	18 (12.1)	21 (14.1)	10 (6.7)	49 (32.9)	0.061
Daytime Coffee Consumption Amount	Now	19 (12.8)	34 (22.8)	13 (8.7)	66 (44.3)	
	1 cup	6 (4.0)	25 (16.8)	11 (7.4)	42 (28.2)	6.938
	2 cups	7 (4.7)	16 (10.7)	8 (5.4)	31 (20.8)	0.327
	3 cups and above	5 (3.4)	3 (2.0)	2 (1.3)	10 (6.7)	
Evening Coffee Consumption Amount	None	29 (19.5)	46 (30.9)	17 (11.4)	92 (61.7)	
	1 cup	4 (2.7)	18 (12.1)	13 (7.0)	35 (23.5)	9.364
	2 cups	3 (2.0)	10 (6.7)	3 (2.0)	16 (10.7)	0.154
	3 cups and above	1 (0.7)	4 (2.7)	1 (0.7)	6 (4.0)	
Drinking Tea Status	Yes	33 (22.1)	70 (47.0)	32 (21.5)	135 (90.6)	0.648
	No	4 (2.7)	8 (5.4)	2 (1.3)	14 (9.4)	0.723
Daytime Tea Consumption Amount	None	4 (2.7)	11 (7.4)	4 (2.7)	19 (12.8)	
	2 cups and less	10 (6.7)	27 (18.1)	9 (6.0)	46 (30.9)	
	3-5 cups	16 (10.7)	32 (21.5)	18 (12.1)	66 (44.3)	8.091
	6-9 cups	5 (3.4)	2 (1.3)	1 (0.7)	8 (5.4)	0.425
	10 cups and above	2 (1.3)	6 (4.0)	2 (1.3)	10 (6.7)	

The habits and ISI scores of intensive care nurses are compared in Table 5. No statistically significant differences were detected between smoking status, drinking alcohol, drinking coffee, and drinking coffee status of the nurses during the day, coffee consumption in the evening, drinking tea during the day, tea consumption in the evening, doing sports and frequency of doing sports, and insomnia severity (p>0.05).

DISCUSSION

The results of this study, in which the factors that affected the insomnia of intensive care nurses and the severity of insomnia were examined, show that the many of intensive care nurses experienced insomnia and had high scores in terms of insomnia severity. When the literature was examined, no studies were detected that examined the insomnia severity of intensive care nurses with ISI. The results of our study and the results of the studies that examined the sleep of nurses were discussed in this section.

When factors, which might affect the daily sleep habits of the participants were examined, it was found that 40.3% smoked, 10.7% consumed alcohol, 55.7% consumed coffee during daytime, 38.9% consumed coffee in the evening, 87.2% consumed tea during daytime, 64.4% consumed tea in the evening, and 39.6% did sports. In the study conducted with nurses by Temel et al. (2013), it was found that 42.5% did sports, 62.1% consumed caffeine beverages 1-3 times a day, 40.4% consumed caffeine beverages during night, and 49.6% smoked (Temel et al. 2013). It was found in the study conducted by Üstün and Yücel (2011) that 33% of nurses smoked, and 93.8% consumed caffeine (Üstün and Yücel 2011). Although caffeine exists in many foods, it is abundant in coffee at the highest level. In our study and in previous studies, it was supported that nurses consume coffee frequently, and might experience insomnia problems more often. It might be interpreted that nurses consume coffee more often to be more fit and not sleep during shifts and when they are on duty. It is also considered that caffeine can affect sleep patterns adversely.

The ISI scores of the nurses were evaluated in our study, and it was found that 75.2% experienced insomnia. Parallel to our results in both our country and abroad, it was stated in previous studies that the insomnia or sleep quality of nurses was low (33%-89.7%) (Axelsson et al. 2004; Shao et al. 2010; Karakaş et al. 2017; Abdalkader and Hayajneh 2008; Temel et al. 2013; Üstün and Yücel 2011; Kaçan et al. 2016; Gülser et al. 2012; Sönmez et al. 2010; Günaydın 2014; Weaver et al. 2016; Chan 2009; Rocha and Martino 2010; Zhang et al. 2016; Kunzweiler et al. 2016; Karagözoğlu and Bingöl 2008; Çetinol and Özvurmaz 2018; Çoban et al. 2011; Bumin et al. 2019). It was also reported that nurses working in Emergency Departments or ICU experienced more insomnia and various health problems compared to other units (Shao et al. 2010; Günaydın 2014; Weaver et al. 2016; Chan 2009; Karagözoğlu and Bingöl 2008). It is considered that this affects the sleep of employees negatively in risky units, such as ICU. Problems might appear in ICU because these units require multifaceted health care, long periods of work with patients, regarding whether positive results are obtained in terms of healthcare provided. For this reason, it is recommended that more studies are conducted to investigate biological, psychological, and social factors that affect insomnia of intensive care nurses.

The rate of female nurses who had insomnia and moderate insomnia was higher than that of men in the present study, and the differences between insomnia severity according to gender was at statistically significant levels (p<0.05). When previous studies were examined, no studies were detected that examined sleep severity by using ISI in intensive care unit nurses. However, studies that evaluate sleep quality show similar characteristics as our study. In the study conducted by Karakaş et al. (2017), it was found that the sleep quality of men was better than that of women (Karakaş et al. 2017). Karagözlü and Bingöl (2008) reported that the sleep quality and job satisfaction scores of female nurses were lower than those of men (Karagözoğlu and Bingöl 2008). In line with these findings, it is considered that the reason why female nurses had higher scores of insomnia severity was that they also had domestic work, high domestic roles and responsibilities, and the noise of their environments increased the severity of insomnia.

Nurses who worked 49 hours or more per week experienced a higher rate of insomnia in our study, and statistically significant differences were detected between weekly working times and insomnia severity scores (p<0.05). Similar results were obtained in previous studies conducted in this field; and it was reported that healthcare employees, who were more physically and psychologically exhausted by working more than 40 hours per week, and who faced the difficulties of night shift had more insomnia scores (Karakaş et al. 2017; Üstün and Yücel 2011; Zhang et al. 2016; Karagözoğlu and Bingöl 2008; Çetinol and Özvurmaz 2018). In line with these findings, it was concluded that nurses who worked 40 hours and more shifts per week should rest well after their duties, and the nursing care provided would also affect them.

In the present study, it was also found that nurses who worked in shift experienced higher insomnia scores, and the difference between working styles and severity of insomnia was at statistically significant levels (p<0.05). Similar studies reported that working in day/night time shifts impaired the sleep quality of nurses (Axelsson et al. 2004; Abdalkader and Hayajneh 2008; Üstün and Yücel 2011;

Günaydın 2014; Karagözoğlu and Bingöl 2008; Edéll-Gustafsson 2002). It was emphasized in some previous studies that there are strong relations between insomnia and depression, psychological and psychiatric problems experienced by nurses who worked in shifts (Yetkin and Aydın 2014; Abdalkader and Hayajneh 2008; Edéll-Gustafsson 2002; Yüksel 2016). Bumin et al. (2019) conducted a study and reported that the sleep quality was better in healthcare employees who worked continuously during the day than those working in shifts (Bumin et al. 2019). Sönmez et al. (2010) reported in their study that 12.4% of nurses who worked in shifts had an occupational accident at least once, and snoring and daytime sleepiness was significantly higher in nurses who had occupational accidents (Sönmez et al. 2010). In the study conducted by Abdelkader et al. (2008), they reported that working in shifts caused an imbalance between lifestyle and work life in nurses, and especially women compromised their sleeps because of their work in domestic life (family and housework, childcare, etc.) (Abdalkader and Hayajneh 2008). In addition, shift workers face insomnia problems often caused by disruption of sleep-wake cycle (i.e. circadian rhythm) (Abdalkader and Hayajneh 2008). For this reason, it is considered that shift work affects sleep quality both in qualitative and quantitative terms, and causing negative effects on physical/psychological health. The results of our work and the results of previous studies show that it is recommended that nurses working in shifts in ICU should be given free time during night shifts, frequent shift changes should not be made, or staff should not be employed only on the night shift for a long time.

The finding that there were no statistically significant differences between ISI and marital status, but married people experienced more insomnia than singles show similarity to the finding that was reported by Üstün and Yücel (2011), Günaydın (2014), Çetinol and Özvurmaz (2018) arguing that married nurses have worse sleep quality than singles (Üstün and Yücel 2011; Çetinol and Özvurmaz 2018; Günaydın 2014). However, in a study conducted by Karagozlu and Bingöl in 2008, the sleep quality of single nurses was calculated to be worse than that of those who were married (Karagözoğlu and Bingöl 2008). The fact that different data were obtained in the study might be because homogeneity was not at the desired level among the groups. These findings also show that sleep severity should not be evaluated only according to marital status, but it should be evaluated with other factors, such as age, gender, professional years, year of working in intensive care, weekly working times, and way of working.

The sleeping habits and insomnia severity status of the intensive care nurses included in our study were compared, and it was found that participants with a falling into sleep duration of 31 minutes or more experienced more insomnia (insomnia, moderate insomnia, severe insomnia), and the difference between insomnia severity was at statistically significant levels (p<0.05). Similarly, participants who slept at different hours each day had higher insomnia and moderate insomnia rates, and the difference between sleeping times and insomnia was at statistically significant levels (p<0.05). When the literature was examined, it was found that Abdelkader and Hayajneh (2008) reported in their study that 57% of nurses had difficulty in falling into sleep, and 75% had problems after the night shift (Abdalkader and Hayajneh 2008). The study conducted by Günaydın (2014) reported that 38.7% of nurses was poor in falling asleep, and 38.7% fell asleep within 16-30 minutes (Günaydın 2014). A nurse who experiences insomnia can risk a person's life by doing any mistake, accident or due to fatigue and stress (Abdalkader and Hayajneh 2008). In the study conducted by Temel et al. on sleep times in nurses, 45.3% of nurses fall asleep in 31 minutes or more hour. The results support our study findings (Temel et al. 2013).

When the total sleeping durations per day was examined, it was found that 13.4% slept for 5 hours and less, 76.5% slept between 6-8 hours, and 10.1% slept for 9 hours or more. Temel et al. (2013) found that 47.5% of nurses slept 6-7 hours, 27.9% slept 5-6 hours, and 21% slept less than 5 hours (Temel et al. 2013). Günaydın (2014) conducted another study with nurses and found that 48.11% of nurses had a daily sleep duration of 6 hours and less (Günaydın 2014). Nurses, who work hard and sleep less, become tired and stressed; and therefore, will also have a higher risk of making mistakes and threaten the safety of patients. Daily sleeping duration is usually recommended as 6-8 hours for adults (Weaver et al. 2016). When the time spent sleeping is evaluated in the study, it can be argued that the average sleeping hour of intensive care nurses is insufficient.

It was determined in the study that 80.5% of the participants were disturbed by noise when they were sleeping, 67.9% were disturbed by light, 6% did a special practice before going to bed, 83.9% did not sleep at the same time every day, and 59.1% slept during daylight hours. In the study conducted by Temel et al. (2013), it was reported that 80% watched TV or read books before going to sleep. It was also found that 42.5% of nurses were disturbed by noise when they were sleeping, and 23.6% were disturbed by room temperature (Temel et al. 2013). Our study results are similar to literature data.

CONCLUSION

It was found in the present study that 75.2% of nurses experienced insomnia, moderate severe insomnia, and severe insomnia according to the ISI score. It can be argued that this result may pose a threat for nurses. The insomnia status of nurses was evaluated as an important and serious condition, and it is recommended that studies are conducted by adding other factors, which may affect insomnia (i.e. stress, anxiety, Body Mass Index, working durations, fatigue, accompanying factors, etc.) in future studies. It was also determined in the study group that working in shifts was extremely high, and that it could also increase insomnia. It may be recommended that the insomnia of employees who work in shifts in healthcare institutions is evaluated periodically, and institutional arrangements are made accordingly.

Conflict of Interest
The authors declare that they have no conflict of interests.

Author Contributions
Plan, design: S.G; **Material, methods and data collection:** S.G, B.K,Z.Ç, E.D; **Data analysis and comments:** S.G, B,K, T.T, E.Ş,S.A; Writing **and corrections:** S.G, F.Y, B.K, S.A.

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