Clinical and Experimental Health Sciences

Examining Sleep Quality and Job Satisfaction of Critical Care Nurses

Hatice Dilek Dogan

Beykent University, School of Health Sciences, Department of Nursing, İstanbul, Turkey.

Correspondence Author: Hatice Dilek Dogan
E-mail: dilekdogan@beykent.edu.tr

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ABSTRACT

Objective: Ensuring patient safety in intensive care units, which constitute the key area of nursing profession, depends on protecting the safety of nurses. Intensive care units providing nonstop treatment in challenging conditions change the sleep quality, psychological and physiological rhythm of nurses. In this units nurses need to work very carefully always. Based on this thought, we aimed to examine the sleep quality and job satisfaction of intensive care nurses.

Methods: 234 nurses from different intensive care units in five different hospitals participated in this descriptive cross-sectional study. Personal information form, Pittsburgh Sleep Quality Index (PSQI) and Minnesota Satisfaction Questionnaire (MSQ) were used in data analysis.

Results: No differences were found among Pittsburgh Sleep Quality Index scores of nurses with respect to intensive care units, whereas Minnesota Satisfaction Questionnaire scores were found to be different ($p<0.005$). The average Pittsburgh Sleep Quality Index score was found to be 8.99±3.45. The highest Minnesota Satisfaction Questionnaire scores were found at level 3 general surgery, anesthesia intensive care units and neonatal intensive care units. A significant relationship was found between the job satisfaction of nurses and the duration of work in intensive care units ($p<0.001$).

Conclusions: Although nurses were happy to work in intensive care units, their sleep quality was found to be 'poor' and their job satisfaction was found to be at 'medium level'. In order to improve sleep quality of intensive care nurses, working hours should be revised. It is recommended that managers make improvements that increase motivation and take into account the feedback of employees.

1. INTRODUCTION

Sleep is the temporary, partial, periodic and rather reversible interruption in the organism's interaction with its environment (1,2). Sleep can also be defined as a functional and developmental 'process' where tired neural system is repaired, and data is sorted. Sleep which is an important physiological need considerably affects an individual's life and well-being. The sequence in which humans sleep at night and pursue their activities during the day is called the 'circadian rhythm'. Working in shifts results in circadian rhythm disorders and changes sleep quality (2-5). Sleep quality means feeling energetic and ready for the new day (6). It may be affected by occupational factors, working conditions, age, gender, exercise, acquired habits and stress (7). Working at night shifts requires a daytime sleep affecting sleep qualitatively and quantitatively. More than 60% of those who work in shifts were observed to have trouble in terms of adaptation to working hours, general unwillingness and inclination to sleep and higher rates of occupational accidents (6,8,9). In addition, a relationship between nurses' sleep quality and level of burnout was identified (10).

Job satisfaction is the positive perception of an individual's job or job-related life. As a consequence of employees' physical and mental health as well as emotions, job satisfaction of nurses and their organizational or professional commitment are closely related to their decision to continue their profession. Studies have revealed that job satisfaction of nurses is the determinant of their intention to quit their job. Moreover, offering a good patient care is also an important factor in the job satisfaction of nurses (11). Various variables including personal traits, intensive working conditions, wrong hospital policies and attitudes of colleagues and team members affect the job satisfaction of nurses. The studies have revealed that job satisfaction level of nurses was found to be at medium level (12,13).

Intensive care units where the treatment and care services of risky patients are carried out are the most critical and equipped units of the hospitals. Intensive Care Unit (ICU) patients need careful care (14). Treatment in these units is provided so intensely that it could case changes in the social, psychological, physiological and sleep rhythm of an

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employee. If working shifts have long hours, lack of attention may cause patients to get harmed (15).

The ability of intensive care nurses to provide the expected level of treatment and care depends on their physical and mental health. Working in shifts and under difficult conditions changes the physiological, psychological and social rhythm of the nurses and even adversely affects their sleep quality and job satisfaction. Sleep problems and low motivation of nurses who connect intensive care patients to life with devotion and holistic approach can threaten both employee and patient safety (14,15).

Ensuring patient safety requires ensuring physical and mental safety of healthcare professionals. In addition, occupational safety is closely related to whether appropriate working conditions are provided. The burden of treatment and care is acknowledged by the hospital administration, other healthcare professionals and the society.

Effective nursing care and continuous patient safety depend on the occupational health and safety and the prevalence of relevant applicable principals. Considering the direct impact of low performance of intensive care nurses, the aim of the study was to examine the 'sleep quality' and levels of 'job satisfaction' of intensive care nurses.

2. METHODS

2.1. Study Design and Sample

This descriptive cross-sectional study was conducted at five hospitals located in the European side of Istanbul, Turkey, between the 10th July and 6th September 2018. The study included 3 educational and research hospitals and 2 state hospitals. Institution permissions were obtained from the hospitals where the research was conducted. 462 nurses working in the intensive care units constituted the population of the study. Reaching all intensive care nurses was aimed before sample selection. 234 nurses who were not in parental or annual leave, actively working in ICUs, who have been working in intensive care for at least one month and agreed to participate in the study constituted the sample group. The questionnaires were distributed and received back within the same day after the nurses were explained about the study and their consent was received. Questionnaires of the nurses who were non-available in the study day were collected a few days later.

2.2. Ethical Considerations

Permit was obtained from the Ethical Committee at Beykent University (08. 05.2018; ethical no: 2018/02). The institutional permits pertaining to the study were obtained from the Public Hospitals Association and the respective hospitals. Written informed consents of nurses were received. The study was conducted between July and September 2018.

2.3. Data Collection and Tools

'Personal Information Form', structured by reviewing the literature was used to collect socio- demographic data of nurses. 'Pittsburgh Sleep Quality Index (PSQI)' and 'Minnesota Satisfaction Questionnaire (MSQ)' were used in data collection.

Pittsburgh Sleep Quality Index was developed by Buysee et al. in 1938 and examined for validity and reliability in Turkish and its Cronbach's alpha value was found to be 0.80 (16). It is a self-report scale of 24 questions assessing sleep quality and disorder within one-month period. 19 of them are self-reported questions and the remaining 5 are to be answered by the spouse or a roommate. It has a range between 0-21. When the total score is lower than 5, it is considered as 'good' sleep quality whereas when the total score is higher than 5, it is considered as 'poor' sleep quality or 'a high level of sleep disorder' clinically (16,17).

Minnesota Satisfaction Questionnaire was developed by Weiss, Dawis, England and Lofquist in 1967, translated into Turkish and examined for validity and reliability by Baycan in 1985 (Cronbach's alpha = 0.77). MSQ is a 5-point Likert scale with 20 questions. The highest and lowest scores from this scale can be 100 and 20 respectively, 60 at the mid-range indicates neutral satisfaction. Scores approximating 20 mean decreased satisfaction while those approximating 100 show increase in satisfaction. The intrinsic satisfaction score consists of factors related to the 'intrinsic nature of the job' including success, being recognized or appreciated, the job itself, job-related responsibility, and change of position due to advancement or getting promoted. On the other hand, extrinsic satisfaction score includes external factors such as organizational policy and administration, audit method, relationships with the administrator, colleagues and top management, working conditions and the wages. Scores below 25 mean 'lower job satisfaction', between 26-74 mean 'normal job satisfaction' and above 75 mean 'higher job satisfaction' (12,18). In this study, Cronbach's alpha values for intrinsic satisfaction, extrinsic satisfaction and total satisfaction were found to be 0.869, 0.833 and 0.907, respectively.

2.4. Statistical Analysis

Mean value, Chi-squared test, Mann Whitney U, Kruskal-Wallis, correlation and Spearman correlation analyses were used in data analysis. Statistical analysis was performed using SPSS.23 software.

3. RESULTS

3.1. Demographics

Of the participants, 78.4% were female, 58.8% were single and 67.8% had associate or bachelor's degree. Among the participating nurses; 80.2 % worked for more than 40 hours a week, 47.3% performed on-call duties 10-13 times a week,

79.7 % worked both day and night shifts, 85.7 % working contentedness, 83.9 % preferred working at ICUs on their own will, 80.2% had various health problems, (68.5% of these health problems were sleep disorders and 62.5 % these health problems were physical health problems), 65.2% did not attend any congresses in the recent year and 71.2% sometimes followed professional publications. In addition, the average number of on-call duties per month was found to be 9.85 and the nurses slept after the shifts for 5.41 hours on average (Table 1).

Table 1. *Socio-Demographical Characteristics and Mode of Work of the Nurses (n=234)*

Characteristics	Median	
Age	28.71	
Duration of the intensive care work/years	3.96	
Number of on-call duties per month	9.85	
Number of patients per nurse	3.35	
Hours of sleep after the shift	5.41	
	Number (n)	**Percentage (%)**
Gender		
Women	181	78.4
Men	50	21.6
Marital status		
Married	96	41.2
Unmarried	137	58.8
Level of education		
High school	22	9.4
Associate degree	28	12.0
Bachelor's degree	158	67.8
Graduate	25	10.7
Working preference		
On my own will	194	83.98
Administration's request	37	16.02
Intensive Care Unit of Work		
Level 2 ICU (General Surgery and Anesthesia ICU)	7	3.0
Level 3 ICU (General Surgery and Anesthesia ICU)	38	16.2
Level 2 and 3 ICU (Mixed ICU)	52	22.2
Cardiovascular ICU	30	12.8
Coronary ICU	34	14.5
Neurology ICU	5	2.1
Palliative ICU	10	4.3
Pediatric ICU	8	3.4
Neonatal ICU	50	21.4
Mode of work		
Continuous/Daytime: (08-16) (08-20)	24	10.34
Continuous/Night: (16-08) (20-08)	23	9.91
Day and Night, variable shifts: 08-16, 16-08, 08-20, 20-08.	185	79.74
Working contentedness		
Yes	198	85.71
No	33	14.29
Weekly working hours		
Less than 40 hours	4	1.72
40 hours	42	18.03
More than 40 hours	187	80.26
Number of on-call duties per month		
0-9	82	35.4
10-13	109	47.3
14+	40	17.3
Health problems		
Yes	187	80.26
No	46	19.74
If yes / Type of health problem		
Physical health problem	115	62.5
Psychological health problem	68	37.0
Physical and psychological health problem	55	29.9
Sleep disorder	126	68.5
Congress attendance in the recent year		
Yes	81	34.8
No	152	65.2
Following professional publications		
Regularly	15	6.4
Sometimes	166	71.2
Never	52	22.3

ICU: Intensive Care Unit

3.2. Pittsburgh Sleep Quality Index (PSQI)

There was no difference in average PSQI scores with respect to the ICUs (p>0.05). The lowest PSQI score (7.14±2.41) was obtained from the level 2 general surgery and anesthesia ICUs while the highest (12.94±17.64) was from neonatal ICUs (Table 2). The average of PSQI scores was found to be 8.99±3.45 (med: 9, min: 1.00, max: 20.00) PSQI scores for sleep quality between 0-5 were considered 'good' (Table 2).

Table 2. *MSQ and PSQI Scores Across Intensive Care Units (n=234)*

Intensive Care Unit of Work	Intrinsic Satisfaction mean+SD Med. (Min. Max.)	Extrinsic Satisfaction mean+SD Med. (Min.-Max.)	Total Satisfaction Score mean+SD Med. (Min.-Max.)	Total PSQI Score mean+SD Med. (Min.-Max.)
Level 2 General Surgery and Anesthesia ICU	42.14±7.65 41 (31-53)	23.86±5.52 26 (16-31)	66±12.3 67 (50-81)	**7.14±2.41** **6- (5-11)**
Level 3 General Surgery and Anesthesia ICU	**43.05±8.67** **45 (12-60)**	**26.11±5.94** **27 (8-40)**	**69.16±13.76** **72.5 (20-100)**	8.16±3.45 8 (1-16)
Levels 2 and 3 Mixed ICU	37.48±6.45 38 (22-51)	21.38±5.11 20.5 (13-32)	58.87±10.2 58.5 (37-80)	9.22±3.51 9 (3-20)
Cardiovascular Surgery ICU	40.57±8.12 41.5 (16-59)	22.47±6.35 23 (6-40)	63.03±13.53 65 (22-99)	8.61±3.92 8 (3-17)
Coronary ICU	36.88±8.61 39 (15-49)	21.09±6.02 21 (10-32)	57.97±13.48 59.5 (25-80)	9.41±3.36 9 (2-17)
Neurology ICU	39.6±6.23 42 (32-46)	22.8±3.03 21 (21-28)	62.4±8.65 63 (53-74)	8.4±3.29 10 (4-12)
Palliative ICU	37.4±7.89 39.5 (24-46)	**19.2±6.48** **19 (10-28)**	56.6±13.38 56 (34-74)	9.4±2.72 9.5 (4-13)
Pediatric ICU	38.75±9.18 38 (26-53)	19.63±7.05 20 (8-28)	58.38±15.56 55 (34-81)	9.63±3.66 8 (6-17)
Neonatal ICU	41.35±7.84 43 (16-60)	23.29±7.62 25 (8-39)	**64.63±14.61** **66 (30-99)**	**12.94±17.64** **10 (3-95,62)**
p	**0.003**	**0.007**	**0.002**	**0.503**
x^2	23.187	21.163	24.964	7.311
SD ***Kruskal-Wallis H Test***	8	8	8	8

MSQ and PSQI for All Intensive Care Nurses - Assessment of Results						
	n	$\overline{X}$	$S.S.$	Median	Minimum	Maximum
Intrinsic Satisfaction	233	39.74	8.06	41.00	12.00	60.00
Extrinsic Satisfaction	233	22.60	6.42	23.00	6.00	40.00
Total Job Satisfaction	233	**62.34**	13.49	63.00	20.00	100.00
Total PSQI	229	**8.99**	3.45	9.00	1.00	20.00

Scale	Assessment	Number (n)	Percentage %
MSQ	60 Neutral	5	2.15
	Below 60	92	39.48
	Above 60	136	**58.37**
PSQI	Good	22	9.61
	Poor	207	**90.39**

MSQ: *Minnesota Satisfaction Questionnaire*
PSQI: *Pittsburgh Sleep Quality Index*
ICU: *Intensive Care Unit*

3.3. Minnesota Satisfaction Questionnaire (MSQ)

The study revealed that MSQ, intrinsic satisfaction, extrinsic satisfaction and total satisfaction score averages of nurses were found to be different with respect to ICUs (p<0.005) (Table 2). The highest scores for intrinsic satisfaction, extrinsic satisfaction and total satisfaction subgroups of the MSQ (mean+SD: 69.16±13.76) were obtained from level 3 general surgery and anesthesia ICUs. Neonatal ICUs ranked the second among those with the highest total satisfaction score (mean+SD: 64.63±14.61) (Table 2). MSQ score average was found to be 62.34±13.49 (med: 63, min: 20, max: 100) (Table 2).

The distribution of the job satisfaction score averages of nurses with respect to their attendance in professional events was presented in Table 3. Accordingly, there was a significant relationship between nurses' attendance in the congress in the recent year and their intrinsic satisfaction, and between their professional publication following level and intrinsic, extrinsic and total job satisfactions ($p<0.05$). Nurses who followed publications regularly were found to have higher total job satisfaction score averages than those who never did (Table 3).

Table 3. *MSQ Mean Scores Based on Nurses' Professional Activities (n=234)*

Mann Whitney U Test	**Congress Attendance in the Recent Year**				
Job Satisfaction Sub-group	**Yes** Mean+SD Med. (Min. Max.)	**No** Mean+SD Med. (Min. Max.)	**u**	**z**	**p**
Intrinsic Satisfaction	**40.7±8.15** 43 (12-60)	39.2±8.01 40 (15-60)	5111.500	-1.995	**0.046**
Extrinsic Satisfaction	22.81±6.87 24.5 (6-40)	22.42±6.16 21 (8-40)	5672.000	-0.841	0.400
Total Satisfaction	63.51±13.89 67 (20-100)	61.62±13.26 62 (25-99)	5292.000	-1.622	0.105

Kruskal-Wallis H Test	**Level of Following Professional Publications**					
Job Satisfaction Sub-group	**Regularly** Mean+SD Med. (Min.-Max.) (n=15)	**Sometimes** Mean+SD Med. (Min.-Max.) (n=165)	**Never** Mean+SD Med. (Min.-Max.) (n=52)	x^2	**sd**	**p**
Intrinsic Satisfaction	**42.07±7.54** 45 (23-54)	40.64±7.48 41 (15-60)	36.12±9.07 36 (12-55)	12.229	2	**0.002**
Extrinsic Satisfaction	22.8±6.98 26 (10-34)	**23.16±6.33** 23 (8-40)	20.58±6.17 20 (6-32)	6.318	2	0.042
Total Satisfaction	**64.87±13.77** 71 (33-82)	63.79±12.79 65 (25-100)	56.69±14.28 56,5 (20-86)	10.822	2	0.004

MSQ: Minnesota Satisfaction Questionnaire

It has been seen that the satisfaction of nurses working in an ICU was found to affect both their job satisfaction ($p<0.001$) and PSQI scores ($p<0.05$) (Table 4). Accordingly, the total job satisfaction scores of nurses who were satisfied with working in an ICU were higher (63.63±13.24) whereas their total PSQI scores were found to be lower (8.84±3.51) (Table 4). The study also revealed a negative significant relationship between the duration of intensive care work and job satisfaction. Accordingly, when the duration of working increases in ICUs, the intrinsic satisfaction, extrinsic satisfaction and total satisfaction scores of nurses' decrease ($p<0.001$) (Table 4). As a result of the study, the nurses working in the ICUs on their own will had a high total job satisfaction score and a low PSQI score. No statistical significance was found between the mode of preference and total job satisfaction and PSQI scores ($p>0.05$) (Table 4).

Table 4. *MSQ and PSQI Mean Scores of Nurses Based on Intensive Care Work Related Matters (n=234)*

Mann Whitney U Test	To Be Pleasure To Work In Intensive Care Unit				
Job Satisfaction Sub-Group	**Yes** (n=195) Mean+SD Med. (Min.-Max.)	**No** (n=31) Mean+SD Med. (Min.-Max.)	**u**	**z**	**p**
Intrinsic Satisfaction	40.39±7.88 42 (12-60)	35.55±8.64 36 (15-48)	2030.500	-2.937	**0.003**
Extrinsic Satisfaction	23.23±6.28 23 (6-40)	18.94±6.19 18 (8-32)	1877.000	-3.393	**0.001**
Total Satisfaction	**63.63±13.24** 65 (20-100)	54.48±13.2 57 (25-77)	1888.000	-3.356	**0.001**
Total PSQI Score	n= 189 **8.84±3.51** 9 (1-20)	n=37 10.19±2.8 11 (6-17)			**0.029**

Mann Whitney U Test	Intensive Care Work Preference				
	On My Own Will Mean+SD Med. (Min.-Max.) (n=193)	**Administration's Request** Mean+SD Med. (Min.-Max.) (n=37)	**u**	**z**	**p**
Intrinsic Satisfaction	39.6±8.32 41 (12-60)	40.7±6.65 41 (26-60)	3457.500	-0.305	0.760
Extrinsic Satisfaction	22.65±6.43 23 (6-40)	22.19±6.38 23 (8-39)	3370.500	-0.540	0.589
Total Satisfaction	**62.24±13.79** **64 (20-100)**	62.89±11.95 60 (34-99)	3556.000	-0.039	0.969
Total PSQI Score	**8.96±3.44** **9 (1-20)**	9.24±3.51 9 (3-170)	3365.000	-0.363	0.717

Pearson Correlation		Duration of Intensive Care Work (year)				
**Significant for 0.01		How many years?	Intrinsic Satisfaction	Extrinsic Satisfaction	Total Satisfaction	Total PSQI Score
How many years?	rho	1	-.228**	-.253**	**-.256****	-0.030
	p	.	0.001	0	0	0.653
	n	228	227	227	227	223

MSQ: Minnesota Satisfaction Questionnaire
PSQI : Pittsburgh Sleep Quality Index

4. DISCUSSION

Intensive care units are the most challenging and risky occupational areas for nursing, and it is also a profession with the largest variety of working areas with other healthcare professionals. Fatigue, lack of sleep, circadian arrhythmia, administrative mistakes, job dissatisfaction, insufficient team work and burden of care for the patients at high risk affect the performance of intensive care nurses. Professional underperformance prevents providing desired level of healthcare services in the ICUs preferred individually. According to Baj (19) there is a complete relationship between intensive care quality and a healthy working environment. The low performance of healthcare professionals causes crucial risks for the safety of patients and employees due to all kinds of occupational accidents and malpractices.

While there are many studies addressing sleep quality of nurses in the literature, only a limited number of them focuses on intensive care nurses. In the studies examining sleep quality Karagözoğlu and Bingöl (20) found the PSQI score average to be 7.28±3.56, Yang et al. (21) found 7.31±3.45, Karataş et al. (7) as 8.64±4.19 and Çetinol and Özvurmaz (17) found 2.69±6.8 and they all identified sleep quality as 'poor'. Shcao et al. (22) showed that sleep quality of 57% of the nurses in Taiwan was poor. Günaydın (23) has revealed that the majority of nurses have poor sleep quality. According to Zverev and Misiri (24) working night shifts affects sleep quality negatively and causes fatigue the following day. It has been noted by Şentürk (10) that, sleep quality of ICU nurses is 'poor' and also associated with the level of their burn-out. Another study suggests that working under intensive care conditions affects sleep quality of nurses and causes sleep disorders (25). In this study, the highest PSQI score was found in neonatal ICUs and the lowest was found in the level 2 general surgery and anesthesia ICUs. On the other hand,

sleep quality of 90.39% of the ICU nurses was found to be 'poor' due to the fact that all the scores were 5 and above. The result of the study was in consistency with the results of the other researches. In another study, it was found that the sleep quality of nurses was good since the majority of the nurses were performing as ward nurses (6). This conclusion proves that the burden of intensive care nurses is far more than that of ward nurses.

In this study, no difference was found among PSQI score averages with respect to the ICUs and sleep quality was found to be poor in all of them. This has been showed that, the working conditions are similar in intensive care units. Sleeping for 5.41 hours on average after their shifts, working more than 40 hours a week, frequent and variable shifts, night shift 10-13 times in per month, affect the sleep quality of nurses. Since sleep disorder of healthcare professionals threatens the safety of the employee and the patient, it is an important cause of malpractice. Aldem et al. (26) have stated that employee safety violations are caused by fatigue, working overload and inadequate number of personnel at the rates of 91.3%, 79.8% and 70.2%, respectively.

Job satisfaction, one of the most important requirements for successful, happy and productive individuals, can be defined as an individual's general attitude towards his/her job as well as the harmony between what he/she expects of and gets from the institution (27). Intensive care nurses have a key role in providing patients a reliable treatment and care. Thus, nurses need to be pleased and satisfied with their work, happy and productive to provide effective healthcare services (12). Studies have revealed that job satisfaction of nurses compared to that of other health professionals was found to be either medium or less than medium (13,27,28). Some studies have shown that the job satisfaction of nurses was low compared to that of other healthcare professionals (29-31). On the other hand, studies only focusing on intensive care nurses indicated that their job satisfaction level was 'medium' (12,32,33) or 'low' was detected (34-38). Since MSQ scores between 26-74 indicated a normal/medium-level job satisfaction, (18) job satisfaction of nurses in this study was found to be 'medium-level' (62.34±13.49; med:63).

Job satisfaction is affected by personal and organizational factors. Personal factors include age, gender, marital status, education level, personal features and socio-cultural environment whereas organizational factors denote working environment and conditions, wage, administration and opportunities of development and promotion (27). According to a study (39) conducted in China, it has been seen that job satisfaction of intensive care nurses depends on administration. Dilig-Ruiz A et al. (40) could not find any evidence supporting the relationship between the personal (socio-demographical) factors and job satisfaction of intensive care nurses. However, they found evidence supporting the relationship between several employment and organizational factors and job satisfaction. In the same study, four factors showed significant positive relationships: shift work/rotating for 8 to 12 hours and doing call-on duty in the daytime, evening or night; autonomy; personnel resources and staffing and; teamwork and cohesion. On the other hand, two factors showed significant negative relationships: job stress and burnout/emotional exhaustion. In our study, personal factors such as socio-demographical characteristics and preference of working in the ICUs were not found to affect job satisfaction. However, employment and organizational factors such as type of the ICU, satisfaction with the ICU, duration (year) of intensive care work, being able to attend the congress and to follow publications were found to be influential in job satisfaction. Nurses also verbally expressed that duration of on-call duties needed to be improved. It has been noted that the job satisfaction of nurses decreases due to performing on-call duties for 9.85 times a week, taking care of 3.35 patients per nurse and having weekly working hours over 40 hours. The study also revealed that when the working duration in ICUs increased, job satisfaction of nurses decreased. Challenging working conditions were considered to be the reason. Job satisfaction of intensive care nurses was found to be affected by their level of education, years of work, mode of work (12) as well as the unit of work (35). Our study is different in terms of examining job satisfaction with respect to the ICUs. The highest level of job satisfaction was observed in level 3 general surgery and anesthesia intensive care nurses and neonatal intensive care nurses. It has been noted that caring a patient who was fully dependent on the nurse had a positive impact on job satisfaction. This created a unique working and nursing area where the nurse was offered their own autonomy.

5. CONCLUSION

As a conclusion, nurses were found to be pleased to work in intensive care units. On the other hand, it has been found that sleep quality of the nurses was 'poor' and working in different ICUs did not make any difference in terms of the effect on sleep quality. It has been concluded that the type of the ICU and the duration of working in the unit affected job satisfaction, the job satisfaction was at 'medium level' and participating in professional events positively affected job satisfaction.

It was observed that nurses worked more than forty hours a week, had minimum ten-night shifts per month and after the shift they can sleep for five hours. In this case, it is understood that the main cause of sleep quality disorder is working conditions. In the study, job satisfaction levels of nurses were found to be different according to the type of intensive care unit, and the highest job satisfaction was determined in the level 3 general surgery intensive care units. Also it was seen that job satisfaction decreased as the duration of intensive care unit work increased.

It should be noted that safety of patients depends on the safety of nurses in intensive care units where nonstop treatment and care services are provided. Therefore, working conditions, duration of on-call duties and other organizational matters should be reevaluated and improved,

employee feedbacks should be considered for sleep quality and job satisfaction of nurses. It was determined that new action plans are needed to improve the quality of health services and employee satisfaction. The primary objective in terms of ensuring patient safety should be forming healthier and safer working conditions for intensive care nurses. In addition, in order to increase job satisfaction, professional development of intensive care nurses should be supported and rewarding system should be prevalent.

Limitations of this study

The participants were from only at five hospitals which are located in the European Side of Istanbul, Turkey. Data were collected only from the intensive care nurses of these hospitals. Therefore, the findings from the study are limited to these hospitals.

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