The relationship between Sleep Quality and Job Satisfaction of Nurses working in the pediatric surgery clinic during the COVID-19 pandemic

Gamze Bozkul, Atiye Karakul

RESEARCH ARTICLE

THE RELATIONSHIP BETWEEN SLEEP QUALITY AND JOB SATISFACTION OF NURSES WORKING IN THE PEDIATRIC SURGERY CLINIC DURING THE COVID-19 PANDEMIC

Gamze Bozkul[1], Atiye Karakul[2]

1. RN, PhD (c), Tarsus University, Faculty of Health Sciences, Department of Nursing, Department of Nursing, Mersin, Turkey
2. Assistant Professor, Tarsus University, Faculty of Health Sciences, Department of Nursing, Department of Nursing, Mersin, Turkey

Abstract

Background: It is important to determine the relationship between the quality of sleep, which is the basic requirement, and job satisfaction, which has an important place in the working life of nurses. The aim of this study is to examine the relationship between sleep quality and job satisfaction of nurses working in the pediatric surgery clinic during the COVID-19 pandemic.

Material and Methods: This study is of descriptive type. The sample of the study consists of 94 pediatric surgery nurses who are members of the Association of Pediatric Surgery Nurses. Nurse Descriptive Information Form, Pittsburgh Sleep Quality Index (PSQI), Nurse Job Satisfaction Scale (NJSS) were used to collect the data. Descriptive statistics, Shapiro-Wilk, Kruskall Wallis, Mann-Whitney-U test and Pearson Correlation analysis were used in the evaluation of the data.

Results: The mean age of the pediatric surgical nurses was 32.82±7.85 years. It was determined that the sleep index and job satisfaction of pediatric surgery nurses were low. There was a negative and moderate correlation between the scores the pediatric surgery nursing obtained from the Nurse Job Satisfaction Scale and the Pittsburgh Sleep Quality Index. It was determined that as the sleep quality of the pediatric surgery nurses decreased, the job satisfaction decreased.

Conclusions: As a result of the study, the sleep quality of pediatric surgery nurses in the COVID-19 pandemic decreased their job satisfaction. It is thought that these results may play a key role in increasing the job satisfaction and regulating working conditions of pediatric surgery nurses working at the forefront of the COVID-19 pandemic.

Keywords: COVID-19, sleep quality, job satisfaction, pediatric surgical nurse.

Corresponding Author: Gamze Bozkul, Tarsus University, Faculty of Health Sciences, Department of Nursing, Department of Nursing, Mersin, Turkey. Tel: 0(324) 600 00 33. E-mail: gamze.bozkul@gmail.com

INTRODUCTION

Sleep, which is one of the basic needs of humans in the "Maslow's Hierarchy of Basic Needs" pyramid, is one of the physiological needs for people to have a healthy and higher quality of life.[1,2] Good sleep quality is necessary to maintain the mental and physical balance of the body.[3] Deterioration of sleep quality causes physical health problems such as cardiovascular diseases, diabetes, stroke, arthritis and metabolic disorders, and mental problems such as depression and anxiety.[4]

Nurses are one of the groups at greatest risk for sleep disorders due to unusual working hours and work stress. Nurses, who are at the forefront of the COVID-19 pandemic, have increased work stress and sleep problems due to reasons such as heavy workload, long shifts, and stress caused by lack of manpower, fear of developing the disease in themselves or their family members, uncomfortable protective clothing.[1] Therefore, the circadian rhythm is disrupted in the nursing profession, as in many occupational groups with irregular working hours at night or in shifts. Any disruption in the circadian rhythm, which is a part of the biological clock and sleep of the human, adversely affects the characteristics of sleep.[5,6] In addition, the lack of adequate sleep during the day after the night shift affects the sleep quality of nurses negatively due to the deterioration of cortisol and melatonin rhythms, which are closely related to sleep quality.[7] Deterioration of sleep quality causes many problems in nurses such as chronic diseases, depression, anxiety, low quality of life, increase in medical errors, decrease in quality of care, professional exhaustion, and decrease in job satisfaction.[2,8]

The concept of job satisfaction includes the individual's general attitude towards work and is the emotional reaction and behavioral representation of the individual's evaluation of work and work environment.[9] High job satisfaction in nurses, institutional and professional commitment, and attitude towards the profession are closely related to the decision to stay in the nursing profession.[10] Therefore, the high job satisfaction of nurses, providing the nursing care at an optimum level, leads to an increase in patient satisfaction and increases the quality level of the care provided.[11] In studies in the literature, it was found that the COVID-19 pandemic negatively affected the job satisfaction of nurses.[12,13] Decreased job satisfaction in nurses affects nurses negatively in many ways with symptoms such as fatigue, sleep problems, lack of energy, job dissatisfaction, negative opinions about work, inefficiency, anxiety, fear, nervousness and burnout.[14-16] It is important for professional, institutional and community health to determine the relationship between the quality of sleep, which is the basic requirement, and job satisfaction, which has an important place in the working life of nurses. Therefore, in this study, it was aimed to examine the relationship between sleep quality and job satisfaction in pediatric surgery nurses working.

METHODOLOGY

The population of the research consists of 124 pediatric surgery nurses who are members of the Association of Pediatric Surgery Nurses. Sample selection was not made in the study, and the study was carried out with 94 nurses who volunteered to participate in the study. The research data were sent to the phones (WhatsApp) and e-mail addresses of all pediatric surgery nurses who are members of the association online via Google Forms. In the created Google Form, it is not allowed to switch to the other question without answering the questions. For this reason, all questionnaires were filled in completely and there was no sample loss. Inclusion criteria:

1. Volunteering to participate in research

2. Working in the pediatric surgery clinic for at least 1 month

3. Being able to read and write Turkish

Data Collection Tool

Introductory Information Form, Pittsburgh Sleep Quality Index and Nurse Job Satisfaction Scale were used to collect data.

Introductory Information Form: The form prepared by the researchers in line with the literature; consists of questions such as nurses' age, marital status, educational status, hospital where they work, working style, job satisfaction.[7,12,17]

Pittsburgh Sleep Quality Index (PSQI): PSQI was developed by Buysse et al. in 1989 and has been shown to have sufficient internal consistency, test-retest reliability and validity.The reliability and validity of the scale in our country was performed by Ağargün et al. in 1996, and the Cronbach Alpha internal consistency coefficient was found to be 0.804. PSQI, which

evaluates the sleep quality of the individual for the last month, includes a total of 24 questions. 19 of these are self-report questions and are answered by the patient himself. Five questions are answered by the patient's spouse or roommate and are used for clinical information only and are not included in the scoring. Each question is evaluated with a number from 0 to 3.The sum of the scores of the seven components gives the total PSQI score.[18] In this study, the Cronbach Alpha internal consistency coefficient of the scale was determined as 0.901.

Nurse Job Satisfaction Scale (NJSS): The original "Nurse Job Satisfaction Scale" developed by Muyave friends (2014) in Japan in order to determine the job satisfaction levels of nurses, 27 items and "Positive Emotions Related to Work", "Appropriate Support from Superiors", "Perceived Importance at Work" and "Enjoyable Job Satisfaction Scale". It consists of four factors, namely "Working Environment". The items of the scale were scored using a 5-point Likert system ranked from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's Alpha reliability coefficient of the original scale was found to be between a=0.94. The 7th and 21st items of the scale are scored in the opposite direction. The scale has no cut-off point.[19] In this study, the Cronbach Alpha internal consistency coefficient of the scale was determined as 0.763.

Statistical Analysis

The SPSS for Windows 22.0 package program was used for the statistical analysis of the study data. The sociodemographic characteristics of the pediatric surgery nursing included in the study were assessed in numbers and percentages. Whether the data was normally distributed or not was determined with the Kolmogorov-Smirnov test. Kruskall Wallis and Mann-Whitney-U tests were used to examine the difference between sociodemographic variables and PSQI and NJSS. To examine the relationship between the scales, the Pearson correlation analysis was performed. The results were considered statistically significant at the $p < 0.05$ level.

Ethics

The research was approved by the Scientific Research and Publication Ethics Committee of a university (approval number: 2021-23).In addition, permission was obtained from the Ministry of Health COVID-19 Scientific Research Platform and the Pediatric Surgical Nursing Association to conduct the study. An informed consent form was added to the first part of the survey forms of the study, and consent was obtained from the pediatric surgery nurses participating in the study before starting the survey.

RESULTS

The average age of the pediatric surgery nurses participating in the study was 32.82±7.85 (min. 22; max. 53), the average of the patients they cared for monthly was 8.022±7.85 (min. 2; max. 7), and the average monthly working time was 184, It is 25±31.01 (min.160; max. 320). 95.7% of the nurses are women, 42.6% are married and 46.8% have children. Of the pediatric surgery nurses, 68.1% were graduates of higher education, 6.6% worked in a university hospital, 37.2% worked as a nurse between 1 month and 5 years, 51.1% of them were pediatric surgery nurses. It has been determined that the working year as a nurse varies between 1 month and 5 years. It was determined that 72.3% of pediatric surgery nurses had a 16-hour shift and 37% were not satisfied with their working conditions (Table 1).

There is a negative and moderate relationship between the scores obtained from the Pittsburgh Sleep Quality Index and the Nurse Job Satisfaction Scale (Table 2). The relationship between the Pittsburgh Sleep Quality Index and the sub-dimension of positive feelings about work, the sub-dimension of appropriate support from superiors, the sub-dimension of perceived importance in the workplace and the sub-dimension of pleasant working environment are shown in Table 2.

The relationship between the sociodemographic characteristics of pediatric surgery nurses and the total score of PSQI, NJSS (Table 3) and sub-dimension averages (positive feelings about work, appropriate support from superiors, perceived importance in the work and pleasant working environment) are shown in Table 4.

A statistically significant relationship was found between the school from which the pediatric surgical nurses graduated and the PSQI (Table 3) and the mean scores of the positive emotions about work sub-dimension (Table 4).

A statistically significant relationship was found between the working time of nurses as a pediatric surgical nurse and the

average score of the appropriate support sub-dimension from superiors (Table 4).

DISCUSSION

During pandemic crises, nurses experience intense work stress due to the stress caused by high workloads, lack of protective equipment and lack of manpower. Accordingly, it has been observed that there is an increase in the sleep problems of nurses and thus a decrease in job satisfaction.[15,16] In this study, the relationship between sleep quality and job satisfaction of nurses working in the pediatric surgery clinic during the COVID-19 pandemic was examined.

In this study, it was found that the sleep quality of pediatric surgery nurses decreased during the COVID-19 pandemic. Similarly, in a study conducted by Kim-Godwin et al. (2021) to evaluate the sleep quality of female nurses during the COVID-19 pandemic, it was determined that the sleep quality of nurses was low.[20] In addition, similar to our study results in the literature, the sleep quality of nurses in the COVID-19 pandemic was low in studies.[21-24] Contrary to our study, in the study of Waage et al. (2021), in which they examined sleep patterns among Norwegian nurses at a time when the incidence of COVID-19 was very low, it was found that most of the nurses did not change in sleep quality, sleep duration, bedtime, and waking time.[25] Especially with the first appearance of COVID-19 in our country, nurses stated that they were in an unknown environment.[26] Due to the increasing number of patients, worsening working conditions and an insufficient number of personnel in our country, it is thought that the heavy working conditions of nurses during the COVID-19 pandemic, the increase in anxiety, stress, and fear levels decrease sleep quality.

In our study, it was found that job satisfaction was low in pediatric surgical nurses during the pandemic outbreak. In the studies conducted in the literature, similar to our study, it was stated that the job satisfaction of nurses was low and the institutional commitment and quality of care provided decreased during the COVID-19 pandemic. The decrease in job satisfaction paved the way for burnout in nurses.[14,15,27,28] Studies have found that nurses have a moderate or lower level of job satisfaction than other health professionals.[17,29] It is thought that

these results may be due to the fear, anxiety, ineffective policies, and worsening working conditions experienced by nurses during the COVID-19 pandemic.In cases where communicable diseases are defined as epidemics, in-service training programs should be planned so that process management can be more effective.In addition, it is very important to create a working environment where nurses who have experience working with infectious diseases can act as mentors.

In our study, it was determined that as the sleep quality of the pediatric surgery nurses decreased, their job satisfaction decreased. In addition, a negative and moderate relationship was found between the scores obtained from the Nurse Job Satisfaction Scale and the Pittsburgh Sleep Quality Index.In the study of Chang et al. (2019) examining the effect of job satisfaction and shift-type on the sleep quality of female nurses working in shifts, it was determined that the relationship between job satisfaction and sleep quality changed depending on the shift. In addition, a significant negative correlation was found between overall job satisfaction total scores and overall Pittsburgh Sleep Quality Index, subjective sleep quality, sleep disturbances, and daytime dysfunction.[9] It is thought that the COVID-19 pandemic plays a key role in the negative relationship between sleep quality and job satisfaction, due to the fact that it is an important stressor for pediatric surgery nurses, which is a specialized field. The results of the study determined that the decrease in sleep quality in pediatric surgical nurses during the COVID-19 pandemic affected job satisfaction negatively. It is thought that it is important to make arrangements in the health system in order to increase sleep quality, motivation, job satisfaction and reduce the burnout that may occur in nurses. The limitations of the study are that the study was conducted with nurses who are members of the Association of Pediatric Surgical Nurses and the number of male nurses in the sample is small. Therefore, the findings of the study cannot be generalized to the whole population.

CONCLUSION

In conclusion, in the study examining the relationship between sleep quality and job satisfaction of nurses working in the pediatric surgery clinic during the COVID-19 pandemic, it was

found that the job satisfaction and sleep index of pediatric surgery nurses were low. In addition, it was determined that as the sleep quality of the pediatric surgery nurses decreased, their job satisfaction decreased. It is thought that it is important to develop social, educational, and political approaches in order to protect and improve the psychosocial health, professional sensitivity, and commitment of nurses working in a special field such as pediatric surgery. Therefore, due to the increasing number of patients and the more difficult working conditions in the COVID-19 pandemic, it is recommended to organize in-service training programs to increase the sensitivity of service nurses and other executive nurses about the regulation of working conditions in order to increase the sleep quality of pediatric surgery nurses and increase their job satisfaction. In addition, it is recommended to periodically evaluate the sleep quality of nurses in difficult situations such as pandemics and to make institutional arrangements accordingly. In addition, it is very important for managers to take measures to encourage, value, motivate and support nursing staff in order to protect the physical and mental health of these employees and increase job satisfaction during and after the pandemic.

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ANNEX

Table 1. Socio-demographiccharacteristics of theparticipants.

n=94		Minimum	Maximum	X±SS
Age		22	53	32.82±7.85
Patient number		2	37	8.02±5.81
Average working hours per mont		160	320	184.25±31.01
			Number(n)	Percentage (%)
Gender	Female		90	95.7
	Male		4	4.3
Marialstatus	Married		40	42.6
	Single		54	57.4
Having a child	Yes		44	46.8
	No		50	53.2
Number of a child	1		20	45.4
	2		19	43.2
	3		5	11.4
School type	Health vocational high school		3	3.2
	Associated egree		3	3.2
	Licence		64	68.1
	Master and upper		24	25.5
Workinghospital	University hospital		57	60.6
	State hospital		36	38.3
	Private hospital		1	1.1
Working Year as a Nurse	1 month -5 years		35	37.2
	6-10 years		17	18.1
	11-15 years		15	16.0
	16-20 years		13	13.8
	21 years and upper		14	14.9
Working Year in Pediatric Surgery Clinic	1 month -5 years		48	51.1
	6-10 years		21	22.3
	11-15 years		12	12.8
	16-20 years		9	9.6
	21 years and upper		4	4.3
Working condition	Only shift		11	11.7
	Shift and night duty		68	72.3
	Rotating shift		15	16.0
Shift working hours	12 hours		6	36.4
	16 hours		54	57.4
	24 hours		34	36.2
Satisfaction with working conditions	Not satisfied at all		5	5.3
	Not satisfied		35	37.2
	Undecided		19	20.2
	Satisfied		32	34.1
	Very pleased		3	3.2

Table 2. Comparison of the Relationship between the Nurse Job Satisfaction Scale and its Sub-Dimensions and the Scores from the Pittsburgh Sleep Quality Index.

		Pittsburgh Sleep Quality Index
Nurse Job Satisfaction Scale total score	r	-.582
	p	.000
Positive feelings about work	r	-.469
	p	.000
Appropriate support from superiors	r	-.452
	p	.000
Perceived importance in the work	r	-.586
	p	.000
Pleasant working environment	r	-.478
	p	.000
r: Spearman correlation analysis test p<.05		

Table 3. Comparison of the relationship between the sociodemographic characteristics of nurses and the scores obtained from the PSQI and NJSS scales.

Socio-demographic characteristics	PSQI		NJSS Total Score	
	X±SD	X±SD	Statistical value	X±SD
Gender				
Female	12.94±0.24	77.48±1.93	MWU:150.50	22.17±0.58
Male	12.25±0.85	73.00±6.46	p:0.57*	20.00±2.94
Marial status				
Married	12.87±0.34	77.27±2.55	MWU:1053.00	22.22±0.77
Single	12.94±0.32	77.30±2.67	p:0.95*	21.98±0.81
School type				
Health vocational high school	15.33±1.45	70.66±12.81	KWS:7.08	22.00±5.56
Associate degree			p:0.06**	
Licence	11.66±0.33	97.33±11.39		28.66±2.18
Master and upper	13.32±0.27	74.62±2.22		20.89±0.67
	1160±0.41	82.95±3.30		24.56±0.85
Working year as a nurse				
1 month -5 years	13.11±0.37	76.60±2.92	KWS:5.63	21.77±0.87
6-10 years	12.93±0.53	70.68±3.59	p:0.22**	20.43±1.02
11-15 years	12.60±0.54	84.73±3.46		23.60±1.25
16-20 years	12.53±0.67	75.46±5.40		22.15±1.75
21 years and upper	13.07±0.73	80.28±6.54		23.07±1.95
Working year in pediatric surgery clinic				
1 month -5 years				
6-10 years	13.12±0.32	77.00±2.36	KWS:5.31	21.85±0.72
11-15 years	13.19±0.50	74.04±3.72	p:0.25**	22.00±1.21
16-20 years	11.83±0.58	87.91±6.35		23.41±1.86
21 years and upper	13.11±0.71	69.66±6.26		20.88±2.38
	11.75±1.43	83.00±11.42		24.00±2.34
Working condition				
Only shift	12.18±0.89	80.90±5.64	KWS:2.61	23.36±1.50
Shift and night duty	12.92±0.25	78.02±2.23	p:0.27**	22.22±0.70
Rotating shift	13.40±0.60	71.33±4.08		20.53±1.15

*Kruskal-Wallis test
**Mann-Whitney U test, SD: Standard Deviation

Table 4. Comparison of the relationship between the sociodemographic characteristics of nurses and the scores obtained from the NJSS sub-scales.

Socio-demographic characteristics	Positive feelings about work		Appropriate support from superiors		Perceived importance in the work		Pleasant working environment
	Statistical value	X±SD	X±SD	Statistical value	X±SD	Statistical value	X±SD
Gender Female Male	MWU:142.50 p:0.50*	20.10±0.82 18.75±2.65	77.48±1.93 73.00±6.46	MWU:150.50 p:0.57*	22.17±0.58 20.00±2.94	MWU:142.50 p:0.50*	20.10±0.82 18.75±2.65
Marial status Married Single	MWU:1075.00 p:0.96*	19.72±1.21 20.28±1.06	77.27±2.55 77.30±2.67	MWU:1053.00 p:0.95*	22.22±0.77 21.98±0.81	MWU:1075.00 p:0.96*	19.72±1.21 20.28±1.06
School type Health vocational high school Associate degree Licence Master and upper	KWS:12.63 p:0.05**	17.33±6.38 27.66±3.84 19.34±0.96 21.34±1.47	70.66±12.81 97.33±11.39 74.62±2.22 82.95±3.30	KWS:7.08 p:0.06**	22.00±5.56 28.66±2.18 20.89±0.67 24.56±0.85	KWS:12.63 p:0.05**	17.33±6.38 27.66±3.84 19.34±0.96 21.34±1.47
Working year as a nurse 1 month -5 years 6-10 years 11-15 years 16-20 years 21 years and upper	KWS:4.04 p:0.39**	19.25±1.33 18.00±1.66 24.13±1.29 19.76±2.35 20.21±2.46	76.60±2.92 70.68±3.59 84.73±3.46 75.46±5.40 80.28±6.54	KWS:5.63 p:0.22**	21.77±0.87 20.43±1.02 23.60±1.25 22.15±1.75 23.07±1.95	KWS:4.04 p:0.39**	19.25±1.33 18.00±1.66 24.13±1.29 19.76±2.35 20.21±2.46
Working year in pediatric surgery clinic 1 month -5 years 6-10 years 11-15 years 16-20 years 21 years and upper	KWS:1.53 p:0.82**	19.34±1.08 18.95±1.51 26.00±2.21 16.77±2.69 23.50±3.88	77.00±2.36 74.04±3.72 87.91±6.35 69.66±6.26 83.00±11.42	KWS:5.31 p:0.25**	21.85±0.72 22.00±1.21 23.41±1.86 20.88±2.38 24.00±2.34	KWS:1.53 p:0.82**	19.34±1.08 18.95±1.51 26.00±2.21 16.77±2.69 23.50±3.88
Working condition Only shift Shift and night duty Rotating shift	KWS:2.34 p:0.31**	23.00±2.40 19.77±0.95 19.06±1.79	80.90±5.64 78.02±2.23 71.33±4.08	KWS:2.61 p:0.27**	23.36±1.50 22.22±0.70 20.53±1.15	KWS:2.34 p:0.31**	23.00±2.40 19.77±0.95 19.06±1.79
*Kruskal-Wallis test **Mann-Whitney U test, SD: Standard Deviation							