

ORIGINAL ARTICLE

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Determining job satisfaction and job stress levels of nurses during the novel coronavirus (COVID-19) pandemic: A cross-sectional surveyID Kubra Kayaoglu¹, ID Eren Aslanoglu²¹Malatya Turgut Özal University, Faculty of Health Sciences, Department of Nursing, Malatya, Türkiye²Fırat University, Kovancılar Vocational School, Department of Opticianry, Elazığ, Türkiye

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**Abstract**

This study aims to determine the job satisfaction and job stress experienced by nurses during the COVID-19 pandemic. This descriptive study was conducted with 129 nurses working in a pandemic hospital in a province in eastern Turkey. This study was carried out between June 2021 and January 2022, after obtaining ethical committee approval. "Nurse Information Form", "Minnesota Satisfaction Questionnaire (MSQ)", and "Perceived Job Stress Scale (PJSS)" was used to collect the data. The data were collected by the researchers using the online data collection method. Besides descriptive statistics (mean, standard deviation, frequency), Mann-Whitney U Test, Kruskal Wallis-H Test, and Spearman's Correlation Analysis were used in the data assessment, and significance was evaluated at the level of $p < 0.05$. It was found that the mean scores of the nurses were 3.07 ± 0.82 for overall MSQ, 2.17 ± 0.35 for the subscale of Intrinsic Satisfaction and 2.10 ± 0.46 for the subscale of Extrinsic Satisfaction. They obtained a total mean score of 3.27 ± 0.82 from the Perceived Job Stress Scale. A significant negative correlation was found between job satisfaction and job stress experienced by the nurses during the COVID-19 pandemic. It was found that during the pandemic, the nurses had a high level of job stress and a moderate level of job satisfaction. As their job stress increased, their job satisfaction decreased. In line with these results, attention should be paid to the mental status of nurses, and job stress management training should be given to obtain job satisfaction and reduce job stress.

Keywords: Coronavirus, job satisfaction, job stress, nurses, pandemic**Introduction**

COVID-19 caused by a novel coronavirus has a high transmission rate, causes severe symptoms, and requires care in specific conditions such as severe respiratory distress, thus turning into a pandemic that has caused both people and the healthcare system to be faced with a crisis [1]. As in all other disasters and emergencies, nurses have played a key role all over the world during the COVID-19 pandemic. Nevertheless, they have experienced intense stress due to factors such as increased workload, COVID-19 protocols, and the risk of being infected with the virus and infecting others [2]. In a study carried out to determine the mental state of healthcare workers working during the COVID-19 pandemic in China, 50.4% of healthcare workers had depression, 44.6% had anxiety, 34% had insomnia, and 71.5% had stress determined [3].

In a similar study conducted with healthcare professionals during the pandemic period in Turkey, the rate of healthcare professionals with moderate and severe depressive symptoms was 53.3%, 53.8% for those with anxiety symptoms, and 48.7% for those with stress symptoms [16].

Job stress and job satisfaction are among the basic factors which affect productivity in professional life. High job satisfaction is required to obtain high-quality health care from all healthcare professionals and especially nurses [4,5]. Job stress has vital importance for achieving job satisfaction. If an individual can use job stress as a motivating factor, it contributes to productivity, creativity, and high job satisfaction. However, if job stress turns into a negative factor, it decreases job satisfaction [6]. The studies examining job stress experienced by healthcare professionals during the COVID-19 pandemic reported that healthcare professionals had a high level of job stress [7,8]. Likewise, some other studies on the job satisfaction of healthcare professionals during the pandemic indicated a decrease in their job satisfaction during this period [2,7,9].

Studies on the COVID-19 pandemic have mainly focused on the

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diagnosis, treatment, and prevention of the disease; however, fewer studies have examined the mental problems of healthcare professionals who worked during the pandemic [10]. It is believed that when frontline nurses working during the COVID-19 pandemic have decreased job stress and increased job satisfaction, this will, in turn, ensure patients receive high-quality care. Therefore, it is crucial to plan relevant interventions to determine the job stress and job satisfaction of nurses while fighting against COVID-19 which was announced as a pandemic by the World Health Organization (WHO) and has considerably affected all aspects of people's lives. This study aims to determine the job satisfaction and job stress level experienced by nurses due to the COVID-19 pandemic.

Materials and Methods

Design

The study was conducted with a descriptive and correlational design. It was carried out to determine the job satisfaction and job stress levels of nurses working during the COVID-19 pandemic.

Sample and Setting

An approval (number: 425644, date: 25.11.2020) was obtained from Fırat University Non-Invasive Research Ethics Committee for the study. This study was carried out between June 2021 and January 2022, after obtaining ethical committee approval. The population of the study consisted of nurses working in a pandemic hospital in eastern Turkey. Study data were collected by the researcher using the online data collection system. Questionnaires were sent to the nurses via Google Forms. Since it was aimed to reach all participants, participants were not selected from the universe of the study. For this reason, no sampling method was used. 129 nurses were reached through the online system. All nurses volunteered to participate in the study and the study was completed with 129 nurses.

Inclusion criteria of the study; During the pandemic process, working in a pandemic hospital, having internet access, and not having any physical problems that will prevent the filling of research forms.

Exclusion of the study; being on leave during the pandemic process.

Measures

The "Nurse Information Form", the "Minnesota Satisfaction Questionnaire (MSQ)", and the "Perceived Job Stress Scale (PJSS)" was used to collect the data.

The Nurse Information Form

This form, which was prepared by the researchers based on the literature, has 11 questions about the socio-demographic characteristics of the nurses and their working experiences in the isolation unit.

The Minnesota Satisfaction Questionnaire (MSQ)

The questionnaire was developed by Dawis Weiss et al., in 1967 [11] (the Cronbach's alpha of 0.86). In 1985, Baycan adapted the questionnaire to Turkish and conducted its validity and reliability study (the Cronbach's alpha of 0.77). The Minnesota Satisfaction

Questionnaire assesses job satisfaction or dissatisfaction of individuals depending on 20 job dimensions. MSQ is a five-point Likert scale ranging from 1 point to 5 points. "Strongly dissatisfied" is rated as 1 point, "Dissatisfied" 2 points, "Undecided" 3 points, "Satisfied" 4 points, and "Strongly satisfied" 5 points. The questionnaire has no reverse scored item. The questionnaire yields intrinsic satisfaction, extrinsic satisfaction, and general satisfaction scores. Weighted scores of the answers are as follows: answer 1=1 points, answer 2=2 points, answer 3=3 points, answer 4=4 points, and answer 5=5 points. The weighted scores of each question are summed up to calculate the raw score. The general satisfaction score is calculated by dividing the score obtained from the items into 20. In the present study, MSQ was used to evaluate the general job satisfaction of the nurses working during the COVID-19 pandemic. The Cronbach's Alpha internal consistency coefficient was found to be 0.82. This value indicated that the scale had a high internal consistency.

The Perceived Job Stress Scale (PJSS)

The scale was developed by Cohen and Williamson (1988) to assess the basic points of stress perception and the ways of coping with stress. Baltas (1998) conducted its Turkish validity and reliability study and found its Cronbach's Alpha value as 0.84. The individual's scale score is obtained by dividing the total score into 14 (A=3.5-4.0; B=1.0-1.3; C=1.4-1.9; D=2.0-2.5; E=2.6-3.1; F=3.2-3.4). A, B, E, and F indicate stress levels that may affect the productivity of respondents and threaten their health, while C and D indicate stress levels that create a stimulus effect and increase success. Detailed information about the groups is as follows:

A (Group 1): A severe risk level that seriously threatens health and productivity (3.5-4.0 points).

B (Group 2): A stress level that doesn't make the individual feel important, doesn't allow him/her to use his/her capacity, and doesn't provide adequate stimulation and thus arises from boredom and a sense of insignificance (1.0-1.3 points).

C (Group 3): A job that has stimulating aspects, but is also simple. A job stress level is boring for someone with higher motivation for achievement and appropriate for someone who is not a fighter (1.4-1.9 points).

D (Group 4): The most convenient job stress level for health and productivity (2.0-2.5 points).

E (Group 5): A job stress level that has a higher level of stimulation and responsibility, but is also attractive. It may increase productivity by compelling the individuals with some aspects and may also threaten their life with other aspects (2.6-3.1 points).

F (Group 6): A stress level that has a higher level of responsibility, compels the individual timewise, does not allow for resting and family relations, and thus poses a threat to health and productivity (3.2-3.4 points).

The Cronbach's Alpha internal consistency was found to be 0.83. This value indicated that the scale had a high internal consistency.

Measurements

Data collection forms prepared in the GoogleDocs program

were sent to the nurses online (through e-mail or WhatsApp). The research was completed with 129 nurses who filled out the research forms. The participants were informed about the purpose and advantages of the study. They carefully read and completed all questions in the questionnaire.

Ethical Considerations

An approval (number: 425644, date: 25.11.2020) was obtained from Firat University Non-Invasive Research Ethics Committee for the study. In the study, once the participants were informed about the purpose of the study, how the results would be used and that participation would be based on volunteerism, their oral and written consent (informed consent principle) was obtained. The nurses were also informed that their information would be kept confidential, so the “confidentiality principle” was followed. The study was carried out following the Principles of the Declaration of Helsinki.

Data Analysis

The data were assessed by using the IBM SPSS Statistics 20 (IBM SPSS, Turkey) program for statistical analyses. The compatibility of the variables to normal distribution was evaluated using the Kolmogorov-Smirnov test and it was determined that the data were not normally distributed. While evaluating the study data, in addition to descriptive statistical methods (mean, standard deviation, frequency), Mann-Whitney U Test was used for the evaluation of the quantitative data between two groups that did not show normal distribution, and the Kruskal Wallis- H Test was used for those who did not show the normal distribution in the evaluation of the quantitative data between more than two groups. While Spearman Correlation Analysis was used to evaluate the relationships between parameters, significance was evaluated at the $p < 0.05$ level.

Results

Based on the socio-demographic characteristics of the participants (Table 1), it was found that 108 (83.7%) of them were female, 44 (34.1%) were aged 30 to 39 years, 72 (55.8%) had a bachelor's degree, and 85 (65.9%) were married. Of the nurses, 67 (51.9%) stated that they were working as a nurse for more than 10 years, 29 (22.5%) were currently working in an isolation unit, and 49 (38.0%) had COVID-19 assignments. Of the nurses, 69 (53.5%) stated that they had COVID-19 symptoms, 30 (23.3%) were diagnosed with COVID-19, 102 (79.1%) had a person diagnosed with COVID-19 in their circle and 81 (62.8%) had a deceased person with COVID-19 in their circle.

When the MSQ total and subscale mean scores of the nurses were examined (Table 2), it was determined that their mean scores were 2.17 (SD=0.35) for the intrinsic satisfaction subscale, 2.10 (SD=0.46) for the extrinsic satisfaction subscale, and 3.07 (SD=0.82) for the overall scale. When their PJSS total mean scores were analyzed (Table 2), it was found that their total mean score was 3.27 (SD=0.82).

Upon comparison of their MSQ total score and subscale total scores and the PJSS total mean score (Table 3), it was found that there was a negative significant correlation between the total scores of MSQ and its subscales and the PJSS total score ($p < 0.05$).

Table 1. General Characteristics of Nurses

		n	%
Gender	Female	108	83.7
	Male	21	16.3
Age	<30	18	14.0
	30-39	44	34.1
	40-49	42	32.6
	>50	25	19.4
Marital status	Married	85	65.9
	Single	44	34.1
Educational status	High school	19	14.7
	Associate degree	38	29.5
	University	72	55.8
	less than 1 year	3	2.3
Working time in the occupation	1-3 years	19	14.7
	4-9 years	40	31.0
	10 years and above	67	51.9
Currently working service	isolation unit	29	22.5
	non-isolation unit	100	77.5
Covid assignment	Yes	49	38.0
	No	80	62.0
Have you experienced any symptoms of Covid?	Yes	69	53.5
	No	60	46.5
Have you been diagnosed with Covid?	Yes	30	23.3
	No	99	76.7
Has anyone around you been diagnosed with covid?	Yes	102	79.1
	No	27	20.9
Has anyone died in your neighborhood due to Covid?	Yes	81	62.8
	No	48	37.2

Table 2. Distribution of Nurses' MSQ and PJSS Scores (n=129)

Measures	Min-Max	X $\pm$ SD (Median)	Cronbach's alpha value
Intrinsic satisfaction	1.58-3.83	2.17 $\pm$ 0.35	0.682
Extrinsic satisfaction	1.38-4.25	2.10 $\pm$ 0.46	0.743
Job Satisfaction Scale Total	1.50-5.21	3.07 $\pm$ 0.82	0.824
The Perceived Job Stress Scale	1.50-5.21	3.27 $\pm$ 0.82	0.838

Notes: Min: Minimum, Max.: Maximum, X: Mean, SD: Standard Deviation

Table 3. Distribution of Nurses' MSQ and PJSS Scores (n=129)

The Perceived Job Stress Scale		
Intrinsic satisfaction	r	-0.030
	p	0.003*
Extrinsic satisfaction	r	-0.126
	p	0.040*
Job Satisfaction Scale Total	r	-0.080
	p	0.001*

r: Spearman's rho Correlation Analysis * $p < 0.05$

Discussion

The findings of the present study were discussed in line with the relevant literature. The analysis of the MSQ total and subscale mean scores of the nurses indicated that they obtained a moderate total mean score, a low mean score from the intrinsic satisfaction subscale, and a low mean score from the extrinsic satisfaction subscale (Table 2).

The findings of the study indicated that the COVID-19 pandemic lowered the job satisfaction level of the nurses. In a study conducted by Said and El-Shafei to examine the job stress, job satisfaction, and intent to quit among nurses working in Egypt during the COVID-19 pandemic, they determined that more than half of the nurses (51%) had a low level of job satisfaction [7]. In their study, Leskovic et al. investigated how the COVID-19 pandemic affected burnout and job satisfaction in nurses and reported that their job satisfaction decreased during this period and this was an important predictor of the increase of burnout [9]. Bayer et al. In the study which they examined the job satisfaction, burnout, and intention to leave work of nurses during the COVID 19 pandemic, they found that emotional exhaustion was at the highest level, the intention to leave was moderate, and the job satisfaction of nurses caring for patients with COVID 19 was decreased [12]. The result of the present study is compatible with the results of other studies [7,9,12]. It is believed that factors such as an increase in workload, dealing with serious cases, lack of information about the COVID-19 pandemic, risk of being infected and infecting others, and stigma have contributed to decreased job satisfaction of nurses during the pandemic.

Upon examination of the PJSS total mean score of the nurses, it was determined that their PJSS total mean score was at the level of F (Table 2). In their study, Que et al. examined how the COVID-19 pandemic affected the mood of healthcare professionals and determined that 46.04% of them had a high level of anxiety, and nurses had the highest level of anxiety among the healthcare professionals (51.44%) [13]. In the study conducted by Said and El-Shafei to examine the job stress, job satisfaction, and intent to quit among nurses working in Egypt during the COVID-19 pandemic, they stated that three-quarters of the nurses had a high level of job stress [7]. In a study conducted by Çınar et al., to examine the perceived stress in nurses working in the emergency room during the pandemic in Turkey and the effect of the pandemic on stress, they determined that nearly half of the nurses experienced stress above average [14]. They also found that the factors significantly affecting the stress score of emergency room nurses were respiratory isolation, change in lifestyle, inability to access protective equipment, inadequate number of nurses in the unit, and risk of being infected with COVID-19 [14]. In their study, Mo et al. analyzed the job stress of Chinese nurses during the COVID-19 pandemic and determined that they had a high level of job stress and felt under pressure [10]. Zakiyah et al. In a study examining nurses' job satisfaction and job stress during the COVID 19 pandemic, found that 132 nurses (44.7%) experienced moderate stress [15]. In another study, it was determined that the stress levels of nurses who treated COVID 19 patients were high due to long working hours and feeling inadequate [16]. Zhang et al. While the prevalence of stress among nurses was 28% during the pandemic period, Liu et al. found the prevalence of stress to be 44.7% [17,18]. Chen et al. (2020), the general anxiety level

of healthcare professionals working in high-risk units was found to be 18.1% in general [19]. This finding of the present study is compatible with the literature. It is believed that increasing workload, high risk of being infected and infecting others, and uncertainty about the COVID-19 pandemic increased job stress of nurses.

In the present study, it was determined that there was a negative significant correlation between the job stress and job satisfaction of the nurses. As their job stress increased, their job satisfaction decreased (Table 3). It is known that job stress directly and negatively affects job satisfaction [20–22]. The number of relevant studies in the literature is limited. In a study conducted by Jones et al., to investigate job anxiety and workplace performance, they determined that a high level of job anxiety impaired workplace performance [23]. Labrague and Santos carried out a study to determine the fear, psychological stress, and job satisfaction of nurses working during the COVID-19 pandemic and reported that as their stress levels increased, their job satisfaction decreased [2]. In the study conducted by Said and El-Shafei to examine job stress, job satisfaction, and intent to quit among nurses working in Zagazig during the pandemic, they reported that the nurses had a high level of job stress (60.5%) and workload (98.6%) and more than half of the nurses (51%) had a low level of job satisfaction [7]. They also determined that only 4.8% of the nurses did not consider the intent to quit and their job satisfaction decreased as their job stress increased [7]. In their study, Abd-Ellatif et al. examined COVID-19 fear and job satisfaction in Egyptian doctors and detected that while 16.5% of the participants experienced intense fear, 78.1% experienced moderate fear. Additionally, 42% of those having intense fear had no job satisfaction [24]. Zakiyah et al. In the study they carried out with nurses during the pandemic, it was determined that 33 (11.2%) of 48 participants who experienced high job stress had low job satisfaction [15]. Brief, Schuler and Sell revealed that a decrease in job satisfaction is generally associated with a psychological effect felt in the state of job stress. This means that job satisfaction will decrease if job stress increases. The result of the present study is compatible with this study. It is believed that the increase in workload especially due to the pandemic is the most important predictor of the decrease in job satisfaction and the increase in job stress.

Limitations of The Study

The findings of the study are limited to the nurses working in a hospital in Turkey and thus, they cannot be generalized to other groups. It was not specified in which departments the nurses worked and all nurses were included in the study.

Conclusion

Consequently, the COVID-19 pandemic has caused nurses to experience serious troubles in their professional life. Similar pandemics will probably break out in the future. It is recommended to make an extensive intervention plan for future pandemics, provide training on coronavirus infections and all other pandemics to nurses who are among frontline occupational groups during pandemics, and support them psychologically. In line with the study results, it was determined that while participants' job satisfaction levels decreased, their job stress levels increased. According to these results, it is recommended to detect and deal with factors that lower the job satisfaction level and increase job stress. Increasing

the job satisfaction of nurses and decreasing their job stress would contribute to their psychological resilience and enable patients to receive the best care. Meeting the physiological needs of nurses and providing professional psychological interventions in stress management may contribute to lowering the stress level of nurses. An effective infection control, a decrease in workload, and any increase in the number of nurses may lower the stress level perceived by nurses. A decrease in workload and a lower level of job stress would contribute to elevating the job satisfaction level of nurses.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

The authors declare that they have received no financial support for the study.

Ethical approval

An approval (number: 425644, date: 25.11.2020) was obtained from Fırat University Non-Invasive Research Ethics Committee for the study.

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