

Job satisfaction, burnout, and depression in nurses working in level 2 and level 3 intensive care units

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Abstract

Aim: This study aimed to determine the burnout, job satisfaction and depression levels of second and third level intensive care unit (ICU) nurses and whether there was a difference between the groups in terms of these characteristics. The relationship between burnout, job satisfaction, and depression levels in ICU nurses was also investigated.

Material and Methods: The study included 42 level 2 and 43 level 3 ICU nurses. A sociodemographic data form, the Minnesota Job Satisfaction Scale (MJS), Maslach Burnout Inventory (MBI), and Beck Depression Inventory (BDI) were applied to the participants. Statistical analysis was performed using the t-test, Pearson correlation, and multiple linear regression analysis.

Results: There was no significant difference between the groups in terms of MJS, MBI subscales, and BDI scores. There was a negative correlation between the duration of work in ICU and job satisfaction however, no significant correlation between the duration of work in ICU and burnout and depression levels. There was a negative correlation between job satisfaction and emotional exhaustion, depersonalization, depression levels also a positive correlation between personal accomplishments. Emotional exhaustion and personal accomplishment predicted job satisfaction, whereas depersonalization and depression did not.

Conclusion: To protect mental health and increase job satisfaction of ICU nurses, precautions should be taken to reduce burnout and depression.

Keywords: Burnout; depression; intensive care unit; job satisfaction; nurse

INTRODUCTION

Job satisfaction is defined as the positive or negative evaluation of a person towards their job, and it is a requirement for individuals to be able to be successful, productive and happy at work (1). Job satisfaction is a well-known element that influences the efficacy of personnel. This concept also refers to the joy and excitement of the person resulting from his or her evaluation and attitude toward his or her job and the emotional reactions concerning the job. Nurses working in an intensive care unit (ICU) provide a service for patients with multiple trauma or those close to death in the terminal stage of the disease, and to their families. They are often exposed to the suffering of patients, the wishes of the patient's demanding relatives, and death. Emotional problems can increase with these factors, and avoidance behaviors may emerge and job satisfaction may be reduced. When there is dissatisfaction related to work, there is an increase in slowing the tempo of work, absence from work or arriving late, leaving the job, complaining, and criticism (2,3). Nurses working in a hospital, especially in the ICU, need

to deal with different factors that can affect their job satisfaction. Some of these factors include demographic characteristics, job specifications, working environment, and the ability to effectively be in charge of working issues. Dissatisfied nurses may be distracted from their patients, fail to provide holistic care, and in general, provide a lower quality of nursing care. All of these factors together may have a negative impact on patients' satisfaction.

Lue et al. (4) reported that the job satisfaction of nurses is related to personal factors (age, experience, educational level, depression, etc.), work-related factors (work stress, autonomy, etc.) and organizational factors (compatibility with the nursing team, nursing duties). There is known to be a relation between job satisfaction and burnout, and that as burnout increases, job satisfaction decreases (5).

According to Maslach and Jackson (6), burnout is a syndrome that manifests as feeling emotionally exhausted; lack of sensitivity towards people met at work, and decreased feelings of personal success and competence. When the time in the workplace in a state of well-being

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is much shorter than the time spent making great efforts, burnout emerges as a reaction to chronic emotional and prolonged interpersonal stress and can be evaluated in three categories: "emotional exhaustion" seen as low self-confidence, weariness, fatigue, and reduced interest and enjoyment in work; "depersonalization" seen as showing a negative, cynical attitude to the people they are caring for and treating these people without feeling and not taking into consideration that each is a unique individual; and "personal accomplishment" seen as a negative evaluation of the self in respect of work and the feeling of personal failure (7,8).

Of the most important factors preparing the ground for burnout, the first group are factors related to the working environment (excessive workload, relationships in the working environment, role conflict and role uncertainties, working hours, relationships with colleagues, autonomy, rewards, etc.) and the second group are demographic characteristics (age, sex, marital status, education, personality, expectations, etc) (9). Burnout is seen in employees with problems such as arriving late and leaving work early, taking frequent sick leave, leaving the job, or limitations in innovations, constructive criticism, productivity, and creative interventions (10). Individuals at risk of burnout show a certain amount of perfectionism and when they cannot perform as they wish, feel guilty. An approach focussed on this aim leads to an imbalance in work-related conditions (11). Some studies have reported that burnout is related to patient mortality (12,13), and it has also been associated with psychiatric symptoms such as depression and anxiety (14).

Job satisfaction, burnout, and levels of depression can vary according to the unit in which the nurse is working. Level 2 ICUs are units which can provide invasive monitoring and treatments in addition to basic monitoring and supportive treatments, and can transfer patients to level 3 ICU. All complicated cases such as patients with multiple organ dysfunction are accepted in level 3 ICUs, which are the units providing medical care and treatment at the highest level, such as respiratory support, renal replacement therapy, and plasmapheresis. These differences in the working environment may affect job satisfaction and burnout levels of ICU nurses. Therefore, there is a need to analyze potential job satisfaction and levels of burnout in those working in all professional categories.

This study aimed to determine whether there is a difference between burnout, job satisfaction and depression levels between nurses in level 2 and level 3 ICUs, which have different intensities of work, nurse to patient ratios and patient populations, and to determine any relationship between these characteristics. Job satisfaction is known to be related to personal factors as well as work-related factors (4). In this study, as a personal factor burnout and depression and as a work-related factor ICU levels were evaluated. Since burnout and depression are among

the personal factors associated with job satisfaction, determining this relationship can be a guide for methods to increase job satisfaction. The first hypothesis of the study was that the level of job satisfaction would be lower and burnout and depression levels would be higher in nurses working in a Level 3 ICU. The second hypothesis was that job satisfaction, burnout, and depression levels would be related.

MATERIAL and METHODS

Participants and Procedure

From a total of 133 ICU nurses working in level 2 and level 3 ICUs of a university hospital between January 2019 and May 2019, 88 voluntary participants were included in the study. The nurses comprised 45 working in level 2 ICU and 43 working in level 3 ICU. The patient to nurse ratio was 3-4:1 in level 2 and 2:1 in level 3 ICU. All the nurses included in the study were assessed with a sociodemographic data form, the Minnesota Job Satisfaction Scale (MJS), Maslach Burnout Inventory (MBI), and Beck Depression Inventory (BDI).

Ethics Committee Approval

The study was approved by the Research Ethics Committee (decision no: 2019/05, dated: 25.04.2019). Participation in the study was entirely voluntary and anonymous.

Measures

Sociodemographic Data Form

The sociodemographic data collection form prepared by the researchers included questions on age, sex, marital status, duration of employment as a nurse, duration of working in ICU, working hours per week, history of psychiatric disorder or medical disease, and smoking status.

The Maslach Burnout Inventory (MBI)

The MBI was developed by Maslach and Jackson (6) and the validity and reliability studies for the Turkish version were made by Ergin (15). The MBI has high validity and has been extensively tested in health care environments worldwide. The inventory consists of 22 items in 3 subscales of emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). EE refers to the individual's depletion of emotional resources and rapid loss of energy which results from performing many tasks within a limited time frame. DP is characterized by negative, insensitive, cynical attitudes towards patients and colleagues, and blaming patients for their health problems. PA refers to low self-esteem and the tendency to consider oneself and one's work worthless. EE is assessed in 9 items (1-3,6,8,13,14,16,20), DP in 5 items (5,10,11,15,22) and PA in 8 items (4,7,9,12,17-19,21). The responses to all the items are a 5-point Likert-type response as 'never', 'very rarely', 'sometimes', 'often', or 'always'. The MBI categorizes the intensity of burnout into a low, medium, or high level for each dimension or subscale. The items of the EE and DP dimensions are negative and those of the PA are positive. In individuals experiencing burnout, the EE and DP scores are expected to be high and the PA scores, low.

Minnesota Job Satisfaction Questionnaire (MJS)

MJS is one of the most widely used scales to measure job satisfaction in different areas of work. It was developed by Weiss et al. (16) and adapted for use in Turkey by Baycan in 1985 with validity and reliability studies (17). The questionnaire has 20 items with responses on a 5-point Likert-type scale. The points obtained range from 20-100, with higher points indicating higher job satisfaction.

Beck Depression Inventory (BDI)

The BDI was developed by Beck et al. (18), and in 1989, was adapted for Turkish with validity and reliability study by Hisli (19). The BDI is a self-reported scale comprising 21 items scored from 0-3 on a 4-point Likert-type scale evaluating depressive symptoms during the previous week (10).

Statistical Analysis

Data obtained in the study were analyzed using SPSS 21.0 software (IBM, USA). In the descriptive statistics, quantitative variables were stated as mean±standard deviation and categorical variables as number (n) and percentage (%). The conformity of the data to normal distribution was assessed using the Kolmogorov-Smirnov test, and there was seen to be a normal distribution. In the comparison of two independent groups, the t-test was used, and to determine relationships between numerical variables, Pearson's correlation analysis was applied. Multiple linear regression analysis was used to determine the relationship between job satisfaction and burnout,

and depression, namely personal factors predicting job satisfaction level. Type 1 error value was taken as 5% in all analyses. A value of $p < 0.05$ was accepted as statistically significant.

RESULTS

The study included a total of 88 ICU nurses comprising 49 (55.7%) females and 39 (44.3%) males with a mean age of 30.38 ± 5.37 years, of whom 38 (43.2%) were single and 50 (56.8%) were married. The mean duration of employment as a nurse was 8.79 ± 5.15 years, the mean duration of working in the ICU was 5.77 ± 3.43 years, and the mean weekly working hours were 50.70 ± 11.93 . Of the nurses participating in the study, 45 (51.1%) worked in a level 2 ICU and 43 (48.9%) in level 3 ICU. Working hours were reported as day time only by 4.5% (n=4), and both day and night by 95.5% (n=84). A history of psychiatric disorder was reported by 3 (3.4%) nurses (1 obsessive-compulsive disorder, 1 depression, and 1 anxiety disorder) and a history of the medical disease by 7 (7.9%) (4 lumbar disc hernia, 2 migraines, 1 ankylosing spondylitis). No statistically significant difference was determined between the nurses working in level 2 and level 3 ICUs in respect of the sociodemographic data, working shifts, duration of employment as a nurse, duration of working in ICU, history of psychiatric disorder, history of medical disease, and the number of cigarettes. The usage of nicotine was more frequent in level 2 ICU nurses than level 3 ICU nurses (Table 1).

Table 1. Comparison of sociodemographic features between level 2 and 3 ICU nurses

		Level 2 ICU n=45	Level 3 ICU n=43	Chi-square test
		n (%)	n (%)	p*
Sex	male	20 (44.4)	19 (44.2)	0.981
	female	25 (55.6)	24 (55.8)	
Marital status	Married	26 (57.8)	24 (55.8)	0.853
Working shifts	Day time	3 (6.7)	1 (2.3)	0.326
	Day and night	42 (93.3)	42 (97.7)	
History of psychiatric disorder	Existent	2 (4.4)	1 (2.3)	0.517
	None	43 (95.6)	42 (97.7)	
Presence of psychiatric disorder	Existent	2 (4.4)	1 (2.3)	0.517
	None	43 (95.6)	42 (97.7)	
Presence of medical disease	Existent	3 (6.7)	4 (9.3)	0.474
	None	42 (93.3)	39 (90.7)	
Usage of nicotine	Existent	23 (51.1)	20 (46.5)	0.039
	None	22 (48.9)	23 (53.5)	
Number of cigarette	1-10 piece	10 (43.5)	2 (25)	0.239
	11-20 piece	9 (39.1)	13 (65)	
	≥21 piece	4 (17.4)	5 (10)	
		mean±SD	mean±SD	Student-t test
Age	Year	30.15±5.87	30.62±4.84	0.682
Duration of working as a nurse	Year	8.40±5.66	9.20±4.60	0.465
Duration of working in ICU	Year	5.75±3.72	5.79±3.15	0.964
Working time	hour/week	52.00±14.79	49.34±7.87	0.295

*Chi-square test, quantitative numbers "n (percent)", SD: Standard Deviation, ICU: Intensive Care Unit

When all the ICU nurses were evaluated together, the mean MBI scores were 26.34±7.15 in the EE subscale, 11.14±4.16 in DP subscale, and 29.05±5.21 in PA subscale, which was all a high level of burnout. The mean MJS score was 59.21±12.34, and the mean BDI score was 10.02±6.95. No significant difference was determined between the groups in respect of the EE, DP, and PA subscale scores of the MBI, or the total MJS and BDI scores (Table 2).

Table 2. Comparison of burnout, job satisfaction and depression scores between level 2 and 3 ICU nurses

		Level 2 ICU n=45 mean±SD	Level 3 ICU n=43 mean±SD	p*
MBI	EE	27.06 ±7.10	25.58±7.20	0.333
	DP	11.75±4.10	10.51±4.18	0.163
	PA	28.31±4.81	29.83 ±5.54	0.171
MJS		58.91±10.82	59.53±13.88	0.814
BDI		9.68±6.20	10.37±7.73	0.648

*Independent Samples Test $p < 0.05$, SD: Standard Deviation, ICU: Intensive Care Unit, MBI: Maslach Burnout Inventory, EE: Emotional Exhaustion, DP: Depersonalization, PA: Personal Accomplishment, MJS: Minnesota Job Satisfaction Questionnaire, BDI: Beck Depression Inventory

There was no correlation between age and job satisfaction ($p=0.843$), depression ($p=0.635$), EE ($p=0.358$), and PA ($p=0.676$), however there was a mild negative correlation with DP ($r=0.240, p=-0.024$). No correlation was determined between the duration of working in ICU and EE ($p=0.065$), DP ($p=0.779$), PA ($p=0.951$) and depression ($p=0.239$) levels. A negative correlation was determined between the duration of working in ICU and job satisfaction ($r=-0.220, p=0.040$). No correlation was determined between the weekly working hours and EE ($p=0.100$), DP ($p=0.414$), PA ($p=0.604$), job satisfaction ($p=0.209$) and depression ($p=0.870$) levels. A negative correlation was determined between EE, DP, and depression and job satisfaction levels, and a positive correlation was determined between PA and job satisfaction (Table 3).

Table 3. The correlation analysis between job satisfaction, burnout subscales and depression scores

		EE	DP	PA	BDI
MJS	r	-0.517	-0.415	0.360	-0.330
	sig.	<0.001	<0.001	0.001	0.002
BDI	r	0.574	0.426	-0.252	1
	sig.	<0.001	<0.001	0.018	

MJS: Minnesota Job Satisfaction Questionnaire, BDI: Beck Depression Inventory, EE: Emotional Exhaustion, DP: Depersonalization, PA: Personal Accomplishment

Multiple linear regression analysis was used to evaluate whether or not the burnout subscales and depression had the expected effect on job satisfaction. In this analysis, the MJS total score was taken as a dependent variable, and the duration of working in ICU, BDI total score, EE, DP, and PA subscales of burnout scores were taken as independent variables. Duration of working in ICU was entered in the first block and BDI total score, EE, DP, and PA subscales of burnout scores in the second block into the model. There was a 4% effect of the duration of working in ICU on job satisfaction in the first model. The first model was able to explain 4% of the sample outcome variance (Adj. $R^2=0.04$), which was found to significantly predict outcome ($F(1,86)=4.370, p=0.040$). When the duration of working in ICU was controlled in the second model, there was seen to be a 34% predictive effect of EE and PA on job satisfaction. The second model was able to explain 34% of the sample outcome variance (Adj. $R^2=0.34$), which was found to significantly predict outcome ($F(5,82)=9.817, p<0.001$). The results revealed that decreased EE and increased PA were significantly associated with improved job satisfaction scores (Table 4).

Table 4. Multiple linear regression analysis for the predictors of job satisfaction

	B (confidence interval)	SE	Beta	t	Sig.
constant	64.341 (48.170/80.511)	8.129		7.915	<0.001
duration in ICU	-0.513 (-1.155/0.128)	0.323	-0.143	-1.592	0.115
EE	-0.661 (-1.086/-0.236)	0.214	-0.383	-3.092	0.003
DP	-0.407 (-1.065/0.251)	0.331	-0.137	-1.232	0.222
PA	0.659 (0.230/1.088)	0.216	0.278	3.056	0.003
BDI	0.064 (-0.322/0.451)	0.194	0.036	0.330	0.742

$R=0.612$, adjusted $R^2=0.336$, SE: Standard Error, ICU: Intensive Care Unit, EE: Emotional Exhaustion, DP: Depersonalization, PA: Personal Accomplishment, BDI: Beck Depression Inventory

DISCUSSION

In the results of this study, the levels of job satisfaction, burnout, and depression were determined to be similar in nurses working in Level 2 and Level 3 ICUs, as the duration of working in ICU increased, so burnout and depression levels increased and job satisfaction decreased, and of these factors only EE and PA had a predictive effect on job satisfaction.

When it is considered that stressors may be different, it can be seen that working in a level 3 ICU is stressful because of the nature of the work carried out, shift work, and often facing pain and death while providing care. Therefore, it was hypothesized in this study that a difference would be seen between nurses working in level 2 and level 3 ICUs in respect of job satisfaction, burnout, and depression levels. Although there is known to be a relationship between the job satisfaction of nurses and job characteristics, working environment and personal characteristics, the level of ICU does not seem to be included in these factors. The mortality risks and mortality rates are higher in level 3 ICUs compared to level 2, as the patients followed up are those requiring more invasive interventions, long-term observation and interventions, and long-term life-support. In a level 2 ICU, at least 1 nurse is required for every 3 beds at all hours and in a level 3 ICU, at least 1 nurse is required for every 2 beds. Although the working hours and shift work rates are similar, if the characteristics of the work carried out change, efforts to equalize the workload with the ratio of nurses to beds may lead to similarities in levels of job satisfaction, burnout, and depression in ICUs of different levels.

In a study by Torre et al. (20), no difference was determined between nurses working in neonatal, pediatric, and adult ICUs in respect to burnout. No significant correlation was found between burnout and age, gender, duration of working, academic level, or role in the workplace. The current study is the first in the literature to have studied the effect of working in level 2 and level 3 ICUs in Turkey on burnout, job satisfaction, and depression levels.

Job satisfaction is known to have a significant effect on burnout syndrome and the efficacy of health care personnel. Borys et al. (21) compared the job satisfaction levels of the operating room nurses (OR) and ICU nurses and did not find a significant difference between ICU nurses and OR nurses in the overall job satisfaction. In the current study, the job satisfaction score of ICU nurses was 59.21. Kahraman et al. (22) reported similar job satisfaction score (58.88) for ICU nurses, which were lower than the 69.16 scores determined by Golbasi et al. (23) in a study of 250 nurses working in different departments. Even if there is no difference between different levels of ICU, it can be suggested that there is a difference between ICU nurses and those in other departments concerning job satisfaction. Although most factors related to job satisfaction are similar to those reported by general hospital nurses, other factors specific to ICU nurses (eg, emotional exhaustion, shift working) support the need for different strategies to increase job satisfaction.

Similar to previous studies that have shown that job satisfaction decrease so very the years in health care personnel, the current study showed that as the duration of working in ICU increased, so the job satisfaction of the nurses decreased (24). Uçar et al. (9) reported that nurses working for longer than 5 years in ICU had higher levels of burnout than nurses working for shorter periods. It can be said that the motivation of the nurses decreased with a longer duration of work, burnout increased and this had a negative effect on job satisfaction. It has been reported that this is particularly relevant in nurses, many of whom experience burnout because of difficult working conditions (22).

It is noticeable that there are studies in the literature that have determined a significant correlation between job satisfaction and burnout. In a meta-analysis by Dillig-Ruiz et al. (25), it was reported to be a significant relationship between work stress and emotional burnout and job satisfaction in ICU nurses, and as emotional burnout increased, so job satisfaction decreased. Scanera et al. (26) stated that job dissatisfaction initially led to emotional burnout then defensive reactions such as depersonalization and finally caused low personal achievement related to work. In the current study, this relationship was considered in reverse. There was seen to be a predictive effect of emotional burnout and personal achievement on job satisfaction, and although there was a relationship between depersonalization and depression this was not seen to have a predictive effect. From these results, it can be said that there is a two-way relationship between job satisfaction and burnout. Also, depersonalization may not predict job satisfaction due to cultural factors because helping and solidarity are common ways of satisfaction in our culture.

A recent study showed that burnout and depression were related and even that depression symptoms predicted burnout (11). Canadas de la Fuente et al. (27) reported that more than one-third of nurses working in Emergency Departments and ICUs experienced a high level of burnout and there was a correlation between the personal factors of burnout and the presence of depression. In a study by Vasconcelos et al. (28), there was reported to be a higher possibility of burnout in nurses triggering depressive symptoms. A meta-analysis in 2005 showed that there was a relationship between job satisfaction and depression and suggested that there was a significant connection between job satisfaction and mental health (29). In the current study, although there was seen to be a relationship between depression and job satisfaction, depression was not seen to have a predictive effect on job satisfaction. There is a need for further studies with larger samples to more clearly determine this relationship.

Limitations of the current study can be said to be the small sample and that it was conducted in a single center. Even if the results suggest that increased burnout decreases job satisfaction, clear evidence of this relationship cannot

be reached because of the cross-sectional design of this study. Further prospective studies would be able to provide more clear data of this relationship.

The intentions at work and quality of service given are high in individuals with high job satisfaction. When health care personnel are satisfied with the conditions in the working environment, their energies are concentrated towards increasing the quality of patient care (30). Although most factors related to job satisfaction are similar to those reported by general hospital nurses, frequently seen factors reported by ICU nurses such as emotional exhaustion and lack of personal achievement, support the need for different strategies to increase job satisfaction. A sufficient number of nurses on duty are the basis for providing high-quality patient care and improving patient outcomes (31). Therefore, approaches should be implemented, such as increasing the number of nurses working and limiting working hours, to increase job satisfaction, and decrease burnout. Therapeutic approaches to the mental health of ICU nurses would have a positive effect on nurses and be of benefit to patients. In a review by Friganovic et al. (32), the most common factors related to burnout were shown to be exclusion from the decision-making process, the need for more autonomy, security risks, and personal problems. Nursing training programs do not create sufficient awareness of burnout, the factors related to burnout, or strategies that can be developed to cope with burnout. Therefore, health care institutions must provide appropriate programs for the prevention and treatment of burnout.

CONCLUSION

Burnout syndrome is a serious problem for healthcare systems and affects almost all profiles of healthcare workers. Although burnout is an evidence-based public health problem, there is still no systematic approach to prevention. Therefore, precautions to reduce stress and the incidence of burnout should be provided for nurses, especially those in very demanding posts.

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