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Assessment of job satisfaction, work-related strain, and perceived stress in nurses working in different departments in the same hospital: a survey study

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Abstract

Objective: We aimed to evaluate whether working at ICU, inpatient services, or the operating room creates differences in job satisfaction (JS), work-related strain (WRS), and perceived stress (PS) of nurses.

Research methodology: The study data were collected through face-to-face interviews. The data collection tools utilized in the study included a questionnaire form consisting of 19 questions.
Work-Related Strain Inventory (WRSI), Short-Form Minnesota Job Satisfaction Questionnaire (SF-MSQ), and the Perceived Stress Scale (PSS) were used.

Results: Across all groups, the mean scores of SF-MSQ were statistically significantly the lowest in the groups of nurses, who were not economically satisfied with their salaries at all, who reported that they did not do their dream jobs and that they were not fond of their jobs.
The mean scores of WRSI were statistically significantly the lowest across all groups in the groups of nurses.
The mean PSS scores were statistically significantly the lowest across all compared groups in the groups of nurses, who commute to work by their private cars.

Conclusion: Hospital management and nursing services should address the overtime working conditions of nurses and provide satisfactory wage improvements.

Keywords: Hospital, Job satisfaction, Work-related strain, Perceived stress, Nurse

Introduction

People spend a significant part of their lives at work when they are not sleeping. Several factors, including physical conditions of the workplace, working environment, relationships with superiors and subordinates, job-related challenges, and relationships with colleagues affect the psychological well-being of the employee, consequently acting on both the private life and work productivity. Reversely, problems in private life can affect work life. Stress is referred to as the disease of modern ages, and it can affect the lives of people in general. Also, it can affect individuals' quality of life and work productivity in the long term. Scientific studies have revealed that stress affects the well-being of individuals unfavorably. Furthermore, studies demonstrate that the negative effects of stress on humans' well-being are determined by the individual's neuropsychological characteristics (Maslach CaP 1979; Maslach CaL 1997).

Advances in technology and the growing diversity and complexity in our social and cultural lives appear to

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cause burnout syndrome, especially in working individuals. Maslach defined the burnout as a physical, emotional, and mental state of exhaustion, manifested by changes in work-related attitudes and behaviors, and characterized by negative attitudes towards work, life, and other people (Maslach CaP 1979). Studies in the literature report that burnout syndrome is most commonly seen in nurses, physicians, and lawyers (Maslach CaL 1997). Severe burnout syndrome is common (33–70%) in physicians and nurses working at intensive care units (ICU) in Western countries (Poncet et al. 2007). Furthermore, it is known that the burnout syndrome has started to be commonly observed in any individual working at any type of job (Maslach 1998). Currently, not only the burnout syndrome but the concepts of stress at work, job satisfaction, and work-related strain receive attention as well. No studies are available in the literature, evaluating the perceived severity of stress, job satisfaction, and work-related strain in nurses working at a hospital in our country. Today, cost-efficiency analysis receives the major part of attention in the management of workplaces. However, besides the balance between workload and wage, we think that it is important to assess the effects of employees' job satisfaction on work productivity. Considering every nurse working at any of the departments in a hospital, we are of the opinion that the factors significantly affecting nurses' work productivity include working conditions and physical environment at the department, job satisfaction, education level, wages, and personal characteristics. In this study, we aimed to evaluate whether working at ICU, inpatient services, or the operating room creates differences in job satisfaction (JS), work-related strain (WRS), and perceived stress (PS) of nurses. Also, we aimed to evaluate the potential factors affecting employee satisfaction and productivity.

Materials and methods

This study was conducted on nurses working in ICU, operating room, and inpatient clinics of Medipol Mega hospitals of Medipol University in Istanbul. Before the commencement of the study, approval of the Medipol University Ethics Committee was obtained on March 22, 2019, with the registration number of 254. Written permission was obtained from the institution, where the study would be conducted. The study included nurses, who agreed and signed a written consent to participate in the study and who worked at the institution for at least 1 month. The study universe consisted of 464 nurses. In this study, the whole universe was tried to be involved without selecting a sample. However, the study was completed with the participation of 411 nurses. The study data were collected through face-to-face interviews. The data collection tools utilized in the study included a questionnaire form consisting of 19 questions about selected socio-demographic characteristics and job conditions of nurses, the Work-Related Strain Inventory, the Short-Form Minnesota Job Satisfaction Questionnaire, and the Perceived Stress Scale.

Work-Related Strain Inventory (WRSI)

WRSI comprises 18 items scored on a 4-point Likert-type self-report scale. The scale was developed to measure work-related strain and stress in healthcare workers. The items are scored in a range from 4 to 1 as follows: 4, fully applies to me; 3, mostly applies to me; 2, partly applies to me; and 1, does not apply to me at all. Items 2, 3, 8, 9, 11, and 15 are the reverse-scored items. The lowest scale score is 18, and the highest score is 72. The scale does not have a cut-off value. It was developed in 1991 by Revicki et al. The adaptation of WRSI into Turkish and its validity-reliability study were performed by Aslan et al. in 1998. Aslan et al. calculated the Cronbach's alpha coefficient of WRSI as 0.667 (AN et al. 1998).

Short-Form Minnesota Job Satisfaction Questionnaire (SF-MSQ)

MSQ was developed in 1967 by Weiss, Dawis, England, and Lofquist. The questionnaire was translated into Turkish, and the reliability and validity study was performed by Baycan (1985). The Cronbach alpha value of the scale was reported to be 0.77. MSQ comprises items scored over a 5-point Likert-type scale ranging from 1 to 5. The scores are described as follows: 1 = very dissatisfied, 2 = dissatisfied, 3 = not decided, 4 = satisfied, and 5 = very satisfied. The summation of the scores of every item yields a total test score. High scores indicate that job satisfaction is high (Spector 1997; Yasan et al. 2008).

The Perceived Stress Scale (PSS)

PSS was developed by Cohen, Kamarck, and Mermelstein (1983). PSS is a self-assessment scale developed to grade the severity of stress to the degree individuals experience their lives as unpredictable, uncontrollable, and overloaded. Individuals are asked to rate how often they experienced certain feelings or thoughts in the last month in a range from 0 (none) to 5 (very often). The items are scored on a 5-point Likert-type scale ranging from "0: never" to "4: very frequent." The scores obtained from each of the items are summed to measure the severity of stress perceived by the responder. High test scores indicate that the severity of perceived stress is high. Cronbach alpha coefficient of the scale indicating its internal consistency has been reported to be 0.84. The adaptation of PSS into Turkish was performed by Yerlikaya and İnanç (2007) (Cohen 1988; Yerlikaya 2007).

Statistical analysis

The IBM SPSS Statistics version 21 statistical package program was used in the statistical analysis of the study data. Descriptive statistics are presented as percentages, arithmetic mean, standard deviation, median, and minimum and maximum values. The Shapiro-Wilk normality test was used for testing whether the data conformed to a normal distribution. For the comparison of data not conforming to a normal distribution, the Mann-Whitney *U* test was used for comparing two groups, and the Kruskal-Wallis test was used for comparing more than two groups. The McNemar test was used for paired categorical comparisons, and Spearman's correlation analysis was used for testing correlations. The statistical significance level was accepted as a p value of < 0.05.

Results

The distribution of nurses by their descriptive characteristics is given in Table 1. Of the nurses participating in the study, 83.2% were women, 68.9% were at the age range from 20 to 25 years, 77.6% were single, and 53.3% held a graduate degree.

When the demographic characteristics of the nurses working in our hospital are examined, it is observed that the majority of the nurses are women and they have just started their careers. The rates of university graduates and single nurses are considerably high.

The distribution of nurses by their professional characteristics is given in Table 2. It has been observed that of the nurses participating in the study, 46.2% have less than 2 years of total professional experience, 35.8% have been working at the institution for less than 1 year, 39.9% have been working at the current department for less than 1 year, 42.1% work at inpatient services, 70.8% work for a range of 220 and 259 h, and 31.1% are not assigned to night duties.

Table 3 shows the distribution of nurses by the selected psychosocial characteristics. Of the nurses participating in the study, 62.8% commute to work by the

Table 1 Distribution of nurses by their descriptive characteristics ($N = 411$)

Descriptive characteristics	Number	Percentage
Gender		
Female	342	83.2
Male	69	16.8
Age		
20–25	283	68.9
26–31	83	20.2
32–37	26	6.3
38 years and older	19	4.6
Marital status		
Single	319	77.6
Married	90	21.9
Spouse dead/separated	2	.5
Educational status		
Vocational School of Health	92	22.4
Associate degree	75	18.2
Graduate degree	219	53.3
Master's degree	25	6.1
Total	411	100.0

Table 2 Distribution of nurses by their professional characteristics ($N = 411$)

Professional characteristics	Number	Percentage
Total length of professional experience		
Fewer than 2 years	190	46.2
3–4 years	62	15.1
5–6 years	56	13.6
7 years or longer	103	25.1
Length of service at the institution		
Less than 1 year	147	35.8
1 year	48	11.7
2 years	42	10.2
3 years	49	11.9
4 years	34	8.3
5 years or longer	91	22.1
Length of service at the department		
Less than 1 year	164	39.9
1 year	63	15.3
2 years	48	11.7
3 years	39	9.5
4 years	30	7.3
5 years or longer	67	16.3
Current department		
Operating room	77	18.7
Intensive care unit	161	39.2
Inpatient clinics	173	42.1
Monthly work hours		
180–219	69	16.8
220–259	291	70.8
260 or longer	51	12.4
Monthly number of night duties		
0 (no night duties)	128	31.1
1–5	32	7.8
6–10	111	27.0
11–15	108	26.3
16 or longer	32	7.8
Total	411	100.0

Table 3 Distribution of nurses by the selected psychosocial characteristics (N = 411)

Characteristics	Number	Percentage
Mode of transport to work		
Hospital shuttle services	258	62.8
Public transport	34	8.3
Private car	16	3.9
On foot	103	25.1
Length of traveling time to work		
Less than 20 min	155	37.7
20–39 min	156	38.0
40–59 min	44	10.7
60 min or longer	56	13.6
Economic satisfaction from the wage		
No/not at all	200	48.7
Very little/minimum	37	9.0
Moderate	44	10.7
Fair	130	31.6
Cigarette smoking		
Smokers	121	29.4
Non-smokers	290	70.6
Is it a dream job?		
Yes	221	53.8
No	190	46.2
Fond of the job?		
Yes	386	93.9
No	25	6.1
Any thoughts about quitting ever?		
Yes	236	57.4
No	175	42.6
Extra time allocated for a social life?		
Yes	96	23.4
No	172	41.8
Very little	143	34.8
Total	411	100.0

shuttle service of the institution, 38% arrive at work in 20–39 min, 48.7% are not satisfied with the salary at all, 70.6% do not smoke, 53.8% do their dream jobs, 93.9% are fond of their jobs, 57.4% previously had thoughts of quitting the job, and 41.8% cannot spare extra time to social life outside work.

Table 4 shows the mean scores obtained from SF-MSQ, WRSI, and PSS. The mean scores obtained from the grading scales were 67.64 ± 12.03 for SF-MSQ, 38.85 ± 5.76 for WRSI, and 40.04 ± 6.94 for PSS.

Table 5 shows the mean scores obtained from SF-MSQ, WRSI, and PSS by the descriptive characteristics

Table 4 Mean scores obtained by nurses from the SF-Minnesota Job Satisfaction Questionnaire, Work-Related Strain Inventory, and Perceived Stress Scale (N = 411)

Scales	Mean ± SD	Median	Min–max
SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)	67.64 ± 12.03	69	20–100
Work-Related Strain Inventory (WRSI)	38.85 ± 5.76	38	27–60
The Perceived Stress Scale (PSS)	40.04 ± 6.94	40	14–62

of the nurses. It is observed that the mean SF-MSQ scores were the highest in the group of nurses at 38 years of age and in married nurses across all groups in both categories. These differences are statistically significant (p = 0.020, p = 0.004, respectively). It has been determined that gender, educational status, and variables did not affect the mean scores of SF-MSQ (p > 0.05).

The mean WRSI scores were statistically significantly higher in male nurses compared to females (p = 0.006). It has been found out that age, marital status, and educational status did not affect the mean scores obtained from WRSI (p > 0.05).

Across the compared groups, the mean scores of PSS were statistically significantly the highest in the group of nurses at the age group of 20–25 years and in the group of nurses, whose spouses were dead/separated (p = 0.002, p = 0.008, respectively). No effects of gender and educational status have been detected on the PSS scores of the nurses participating in the study (p > 0.05).

Table 6 shows the mean scores obtained from SF-MSQ, WRSI, and PSS by the professional characteristics of the nurses. It is observed that across all compared groups, the mean SF-MSQ scores were statistically significantly the highest in the group of nurses having a total professional experience length of ≥ 7 years and in the group of nurses with a service length of ≥ 5 years at the current department (p = 0.002, p = 0.021, respectively). It has been found out that the length of service at the institution, the type of the current department, monthly working hours, and the number of night duties per month did not affect the mean SF-MSQ scores of the nurses (p > 0.05).

The mean scores of WRSI were not affected by any of the study variables (p > 0.05).

Across all compared groups, the mean PSS scores were statistically significantly the highest in the group of nurses with a total professional experience length of less than 2 years (p = 0.006). The length of service duration at the institution, the length of service period at the current department, monthly working hours, and the number of night duties did not affect the PSS scores of the nurses (p > 0.05).

The mean scores of SF-MSQ, WRSI, and PSS by the selected psychosocial characteristics of nurses are given in Table 7. Across all groups, the mean scores of SF-

Table 5 Mean scores of SF-MSQ, WRSI, and PSS by the descriptive characteristics of nurses (N = 411)

Introductory and professional characteristics	N	SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)		Work-Related Strain Inventory (WRSI)		The Perceived Stress Scale (PSS)	
		Mean ± SD	Test*	Mean ± SD	Test*	Mean ± SD	Test*
Age							
20–25	283	66.72 ± 11.27	KW = 9.838 p = 0.020	39.38 ± 5.94	KW = 6.205 p = 0.102	40.78 ± 6.82	KW = 15.399 p = 0.002
26–31	83	68.49 ± 12.09		37.80 ± 5.55		39.49 ± 6.65	
32–37	26	71.03 ± 16.81		37.53 ± 4.65		36.80 ± 7.72	
38 years and older	19	73.10 ± 13.60		37.36 ± 4.07		35.84 ± 6.30	
Gender							
Female	342	67.11 ± 12.19	U = 10,233.500 p = 0.082	38.45 ± 5.43	U = 9345.000 p = 0.006	40.24 ± 6.64	U = 10,591.500 p = 0.179
Male	69	70.30 ± 10.93		40.85 ± 6.85		39.01 ± 8.23	
Marital status							
Single	319	67.16 ± 11.82	KW = 11.092 p = 0.004	38.92 ± 5.83	KW = 1.737 p = 0.420	40.35 ± 6.75	KW = 9.552 p = 0.008
Married	90	70.12 ± 11.57		38.54 ± 5.52		38.58 ± 7.12	
Spouse dead/separated	2	33.00 ± 2.82		43.00 ± 4.24		55.00 ± 8.48	
Educational status							
Vocational School of Health	92	68.69 ± 12.57	KW = 6.850 p = .077	39.22 ± 5.65	KW = 2.644 p = 0.450	40.35 ± 7.65	KW = 3.835 p = .280
Associate degree	75	66.50 ± 11.23		39.36 ± 6.44		39.90 ± 7.73	
Graduate degree	219	66.98 ± 12.05		38.68 ± 5.62		40.19 ± 6.43	
Postgraduate (master's degree)	25	73.08 ± 11.14		37.48 ± 5.18		37.92 ± 5.94	

*Mann-Whitney U test and Kruskal-Wallis test were used

MSQ were statistically significantly the lowest in the groups of nurses, who were not economically satisfied with their salaries at all, who reported that they did not do their dream jobs and that they were not fond of their jobs, in the group of nurses who had thoughts of quitting their jobs, and who could not devote extra time to social life outside the job (p = 0.000, p = 0.001, p = 0.000, p = 0.000, p = 0.000, respectively).

The mean scores of WRSI were statistically significantly the lowest across all groups in the groups of nurses, who were not fond of their jobs, who had thoughts of quitting their jobs, and who could not devote extra time to social life outside the job (p = 0.000, p = 0.000, p = 0.000, respectively).

The mean PSS scores were statistically significantly the lowest across all compared groups in the groups of nurses, who commute to work by their private cars (p = 0.029). They were the highest across all groups in the groups of nurses, who reported that they were economically dissatisfied with their salaries completely, who did not do their dream jobs, who were not fond of their jobs, who had thoughts of quitting their jobs, and who could not devote extra time to social life outside the job (p = 0.000, p = 0.016, p = 0.003, p = 0.000, p = 0.000, respectively).

The correlation across the scores of SF-MSQ, WRSI, and PSS is shown in Table 8. A strong negative correlation was found between the scores of SF-MSQ, WRSI, and PSS. In other words, job satisfaction declines as work-related strain and the severity of perceived stress increase (p < 0.05). A positive correlation was found between the scores of WRSI and PSS. In other words, as the perceived stress increases, the work-related strain increases, and high levels of work-related strain increase the level of perceived stress (p < 0.05).

Discussion

In their study investigating burnout on intensive care specialists and nurses, Embriaco et al. observed that almost 50% of doctors and 60% of nurses exhibited high levels of burnout and that nurses had thoughts of quitting. That study on ICU employees determined that the factors resulting in burnout included the care provided to end-of-life patients, conflicts in ICU, work hours, and the mode of communication (Embriaco et al. 2007). In our study, regarding the sustainability of the work and workplace, we examined the scores obtained from three different job-related scales as another approach different from examining burnout. Our study results show that the following variables, including the allocation of extra time to social life, economic competence, and being fond of the job, are important; however, the sustainability of the work and workplace is not based on patients or the characteristic features of the job.

Poncet et al. demonstrated that one-third of ICU nurses had severe burnout and that training and

Table 6 Mean scores of SF-MSQ, WRSI, and PSS by the professional characteristics of nurses (*N* = 411)

Professional characteristics	*N*	SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)		Work-Related Strain Inventory (WRSI)		The Perceived Stress Scale (PSS)	
		Mean ± SD	Test*	Mean ± SD	Test*	Mean ± SD	Test*
Total length of professional experience							
Fewer than 2 years	190	66.79 ± 10.97	KW = 14.732 p = 0.002	39.14 ± 6.12	KW = 3.039 p = 0.386	41.22 ± 6.47	KW = 12.334 p = 0.006
3–4 years	62	64.35 ± 11.18		39.33 ± 5.19		39.95 ± 6.27	
5–6 years	56	67.82 ± 11.06		39.07 ± 6.31		39.37 ± 7.46	
7 years or longer	103	71.11 ± 14:08		37.92 ± 5.01		38.28 ± 7.50	
Length of service at the institution							
Less than 1 year	147	67.73 ± 10.02	KW = 8.486 p = 0.075	38.36 ± 5.64	KW = 2.787 p = 0.594	40.22 ± 6.74	KW = 8.635 p = 0.071
1 year	48	66.35 ± 14.55		39.77 ± 6.16		42.16 ± 6.09	
2 years	42	68.80 ± 12.85		40.11 ± 6.16		39.97 ± 8.22	
3 years	49	63.83 ± 13.52		39.30 ± 5.46		40.12 ± 7.15	
4 years	34	68.52 ± 9.26		38.50 ± 6.42		38.55 ± 7.35	
5 years or longer	91	69.38 ± 13.02		38.49 ± 5.42		39.16 ± 6.65	
Length of service at the department							
Less than 1 year	164	68.79 ± 10.90	KW = 11.595 p = 0.021	37.89 ± 5.48	KW = 3.114 p = 0.539	39.98 ± 7.01	KW = 9.099 p = 0.059
1 year	63	65.47 ± 13.06		40.41 ± 5.93		41.82 ± 6.69	
2 years	48	68.14 ± 11.35		39.56 ± 6.27		39.85 ± 7.46	
3 years	39	62.69 ± 13.45		39.35 ± 5.38		40.05 ± 6.18	
4 years	30	66.53 ± 9.79		40.30 ± 7.14		40.36 ± 7.44	
5 years or longer	67	69.92 ± 13.40		38.32 ± 5.05		38.47 ± 6.62	
Current department							
Operating room	77	64.10 ± 15.71	KW = 5.740 p = .057	39.80 ± 6.67	KW = 1.833 p = 0.400	40.75 ± 8.69	KW = 0.406 p = 0.816
Intensive care unit	161	68.47 ± 10.64		38.87 ± 5.72		39.76 ± 6.93	
Inpatient clinics	173	68.46 ± 11.14		38.42 ± 5.33		39.98 ± 6.03	
Monthly work hours							
180–219	69	69.28 ± 10.86	KW = 5.280 p = 0.071	38.73 ± 5.50	KW = 3.268 p = 0.195	38.89 ± 6.55	KW = 4.501 p = 0.105
220–259	291	68.02 ± 11.58		38.68 ± 5.90		40.00 ± 7.09	
260 or longer	51	63.27 ± 15.025		40.01 ± 5.24		41.80 ± 6.28	
Monthly number of night duties							
0 (no night duties)	128	68.86 ± 13.38	KW = 3.981 p = 0.264	38.61 ± 5.80	KW = 6.994 p = 0.072	38.93 ± 7.42	KW = 4.651 p = 0.199
1–5	32	65.09 ± 11.41		39.09 ± 7.00		39.37 ± 5.59	
6–10	111	68.31 ± 9.63		37.98 ± 5.34		40.43 ± 5.86	
11–15	108	66.45 ± 9.48		39.65 ± 5.71		40.63 ± 7.70	
16 or longer	32	67.06±19.80		39.93 ± 5.61		41.75 ± 6.54	

*Kruskal-Wallis test was applied

preventive practices could provide benefits to alleviate this issue (Poncet et al. 2007). In another study, both personal characteristics and job-related factors were associated with burnout (Gelfand et al. 2004). Another study reported that, among the job-related factors, working hours did not affect the development of burnout, while the workload and work environment did. Furthermore, the study reported that younger and less experienced nurses benefited more from preventive strategies (McManus et al. 2004; Maslach et al. 2001). In our study, we have observed that job satisfaction increased, and perceived stress levels declined with increasing age. This shows us that the increasing work experience over the years has reduced the perception of stress. This scope of view suggests that nurses who are new at their jobs need to be supported especially for stress management. We think that the education curricula of nurses at school and the provision of training activities before starting work are critical in this sense.

Table 7 Mean scores of SF-MSQ, WRSI, and PSS by the selected psychosocial characteristics of nurses (*N* = 411)

Professional characteristics	*N*	SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)		Work-Related Strain Inventory (WRSI)		The Perceived Stress Scale (PSS)	
		Mean ± SD	Test*	Mean ± SD	Test*	Mean ± SD	Test*
Mode of transport to work							
Hospital shuttle services	258	68.32 ± 11.75	KW = 4.774 $p = 0.189$	38.52 ± 5.60	KW = 5.414 $p = 0.144$	39.55 ± 6.86	KW = 9.032 $p = 0.029$
Public transport	34	66.55 ± 10.44		39.94 ± 5.18		41.23 ± 6.39	
Private car	16	69.50 ± 10.32		36.93 ± 5.53		37.25 ± 6.18	
On foot	103	66.03 ± 13.36		39.64 ± 6.26		41.29 ± 7.22	
Length of traveling time to work			KW = 2.575 $p = 0.276$	38.83 ± 5.53	KW = 1.764 $p = 0.414$	39.68 ± 7.59	KW = 0.192 $p = 0.908$
Less than 20 min	155	67.88 ± 13.20		38.44 ± 5.60		40.09 ± 6.45	
20–39 min	156	67.43 ± 11.90		40.11 ± 7.16		40.93 ± 6.32	
40–59 min	44	65.45 ± 10.72		39.08 ± 5.61		40.17 ± 6.90	
60 min or longer	56	69.32 ± 9.77		38.83 ± 5.53		39.68 ± 7.59	
Economic satisfaction from the wage							
No/not at all	200	63.49 ± 12.36	KW = 57.174 $p = 0.000$	39.58 ± 6.29	KW = 5.649 $p = 0.130$	41.31 ± 6.72	KW = 18.503 $p = 0.000$
Very little/minimum	37	67.43 ± 9.16		39.16 ± 5.71		40.37 ± 6.84	
Moderate	44	75.18 ± 12.64		37.40 ± 5.04		36.75 ± 7.17	
Fair	130	71.56 ± 9.30		38.14 ± 4.97		39.10 ± 6.77	
Cigarette Smoking							
Smokers	121	68.88 ± 13.57	$U = 16{,}723.500$ $p = 0.454$	39.39 ± 5.82	$U = 16{,}093.500$ $p = 0.185$	39.62 ± 7.26	$U = 16{,}901.500$ $p = 0.557$
Non-smokers	290	67.13 ± 11.32		38.63 ± 5.73		40.21 ± 6.80	
Is it a dream job?							
Yes	221	69.50 ± 12.35	$U = 16{,}921.000$ $p = 0.001$	38.43 ± 4.94	$U = 19{,}795.500$ $p = 0.317$	39.28 ± 6.96	$U = 18{,}098.000$ $p = 0.016$
No	190	65.48 ± 11.30		39.34 ± 6.56		40.91 ± 6.82	
Fond of the job?							
Yes	386	68.29 ± 11.74	$U = 2124.000$ $p = 0.000$	38.40 ± 5.35	$U = 1944.500$ $p = 0.000$	39.77 ± 6.85	$U = 3111.500$ $p = 0.003$
No	25	57.68 ± 12.40		45.92 ± 7.26		44.16 ± 7.06	
Any thoughts about quitting ever?							
Yes	236	64.69 ± 11.89	$U = 13{,}376.000$ $p = 0.000$	40.01 ± 6.24	$U = 15{,}539.000$ $p = 0.000$	41.42 ± 6.38	$U = 15{,}341.500$ $p = 0.000$
No	175	71.62 ± 11.08		37.30 ± 4.62		38.17 ± 7.23	
Extra time allocated for a social life?							
Yes	96	72.60 ± 12.20	KW = 32.558 $p = 0.000$	37.78 ± 5.69	KW = 20.764 $p = 0.000$	37.64 ± 6.67	KW = 23.337 $p = 0.000$
No	172	64.18 ± 12.40		40.45 ± 6.16		41.75 ± 6.45	
Very little	143	68.49 ± 10.07		37.66 ± 4.80		39.59 ± 7.17	

*Mann-Whitney *U* test and Kruskal-Wallis test were used

Table 8 Correlation of the scores of SF-MSQ, WRSI, and PSS (*N* = 430)

Scales	SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)	Work-Related Strain Inventory (WRSI)	Perceived Stress Scale
SF-Minnesota Job Satisfaction Questionnaire (SF-MSQ)	–	$r = -.208^{**}$ $p = 0.000$	$r = -.376^{**}$ $p = 0.000$
Work-Related Strain Inventory (WRSI)	$r = -.208^{**}$ $p = 0.000$	–	$r = 0.347^{**}$ $p = 0.000$
The Perceived Stress Scale (PSS)	$r = -.376^{**}$ $p = 0.000$	$r = 0.347^{**}$ $p = 0.000$	–

Spearman's correlation analysis was used
**Correlation is significant at the 0.01 level

Deible et al. conducted a study on nurses in the age range from 22 to 49 years. The nurses were administered PSS, Maslach burnout inventory, and awareness tests before they started practicing reiki, yoga, and meditation sessions. The sessions lasted for 1 month, and then the administration of the scales was repeated at the end of that period. The results showed that the interventions of reiki, yoga, and meditation were effective in reducing stress and improving the coping mechanisms and individuals' awareness (Deible et al. 2015). Workload, long working hours, and shift work are some of the factors creating stress at work (Harada et al. 2005). Hospital staff and healthcare workers working under those conditions are the employees exposed to high levels of perceived stress at most (Wolfgang et al. 1988). Among the healthcare workers, nurses constitute the group with the highest levels of perceived stress (Wu et al. 2010; Lee 2003; Laranjeira 2012).

The study by Lee and Kim demonstrated that the likelihood of depression existed for clinical nurses with high levels of perceived stress, mental fatigue, and anger expression despite the negative correlation of high age with depression, perceived stress, fatigue, and anger (Lee 2019). The study by Oliveira et al. determined that the factor affecting the workload of nurses most negatively was physical fatigue, whereas the factor acting on the job satisfaction most positively was having good relationships at work (Oliveira et al. 2019). In our study, 53.8% of the nurses reported that they did their dream job, and 93.9% reported that they were fond of their jobs. However, 57.4% of the nurses reported that they had thoughts of quitting their jobs. Although these figures may appear contradicting, we think that the low percentage of nurses that can allocate extra time to social life, economic dissatisfaction levels, and being not able to spare extra time for social activities may contribute to the high percentage of participating nurses, who think of leaving their jobs. The percentage of nurses not working at their dream jobs was 46.2%, and this might have resulted in the high percentage of nurses thinking of quitting the job.

Ghawadra et al. conducted a study in a training hospital and reported that single and widowed nurses and the nurses at the age range between 26 and 30 years had higher levels of stress and depression compared to married nurses and nurses at other age groups. The investigators found out that stress and depression affected the job satisfaction of nurses unfavorably (Ghawadra et al. 2019). In our study, we found out that being married enhanced job satisfaction (JS) and reduced the levels of perceived stress (PS).

In the study by Borys et al., it was found that there were no significant differences in the overall job satisfaction between the ICU nurses and operating room nurses. However, the study reported that the major factor creating differences in the level of satisfaction among nurses was the geographical region where they worked (Borys et al. 2019). In the study of Mousazadeh et al., it was found that JS among women was higher than that of men and that elderly nurses had higher JS levels compared to younger nurses (Mousazadeh et al. 2018). In our study, we found significantly higher levels of work-related strain (WRS) in men compared to women. In our country, the nursing profession has been a profession for women until recently. Men have been allowed to become nurses since 2007 in our country. Working at a position predominantly occupied by women may increase the severity of tension in male nurses more than the anticipated levels because they might feel the need to gain acceptance.

The study by McVicar found a strong relationship between low levels of JS and high levels of work-related stress among nurses. The author suggested that flexible working hours may help solve this issue, arising from shift work (McVicar 2016). In our study, it is a remarkable finding that the education level of nurses did not affect JS, WRS, and PS. Examination of other findings in our study revealed that the psychosocial characteristics of the employees were the major factors acting on JS, WRS, and PS. We think that issues like inadequacies of sparing extra time for social activities, economic satisfaction, and the mode of transport to work are common problems affecting everyone regardless of the level of education and that the level of education is not the main determiner acting on these issues. We found out that nurses, who worked in their current department and institution for 3 years, had notably low levels of JS; however, we do not have any concrete results to explain this finding. Therefore, we suggest that further qualitative studies are needed to explain it.

The study by Munnangi et al. reported that the levels of emotional exhaustion varied among nurses depending on their workplaces and that burnout was observed most commonly in the surgical ICU nurses. The authors suggested that surgical nurses should attempt to improve their working environments in order to improve JS and minimize the stress resulting in burnout (Munnangi et al. 2018). In our study, another remarkable finding is the lack of effect of the department, the number of monthly night duties, and monthly working hours acting on JS, WRS, and PS. This can be explained by the effect of the psychosocial characteristics of employees, including the allocation of extra time for social activities, economic satisfaction, and the mode of transport to work, as the factors acting on JS, WRS, and PS.

The study by Munnangi et al. observed significant associations of PS, burnout, and JS with each other (Borys et al. 2019). In the study of Mitra et al., it was found that

job-related PS acted on manifestations of burnout and that a positive correlation existed between burnout and PS (Mitra et al. 2018). In our study, the scores of SF-MSQ, WRSI, and PSS were found to be strongly and negatively correlated. In other words, increasing levels of WRS and PS lowers JS levels. A positive correlation was found between the scores of WRSI and PSS. In other words, as the PS increases, WRS increases, and high levels of WRS increase the level of PS ($p < 0.05$). We can argue that these findings are consistent with the information in the literature.

Conclusion

Our study results indicate that job-related challenges, shift working hours, the departments that nurses work at, and long working hours are mainly accepted and tolerated by nurses as they reflect the nature of the nursing profession. Across all occupational groups, nursing is one of the professions that burnout and stress are observed considerably at high rates. Therefore, the levels of awareness should be elevated about the need to improve both the occupational working conditions and the social life qualities of nurses. In order to increase productivity at work and elevate the levels of job satisfaction of nurses, we believe that hospital management and nursing services should address the overtime working conditions of nurses and provide satisfactory wage improvements so that nurses can allocate extra time for their social lives.

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Authors' contributions
CE: writing, literature scanning, data, concept, design. SD: writing, literature scanning, concept. RÇ: literature scanning, design. DK: literature scanning, data. BH: data, concept. PK: reviewing. HÖ: reviewing. All authors read and approved the final version of the manuscript.

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Before the commencement of the study, approval of the Medipol University Ethics Committee was obtained on March 22, 2019, with the registration number of 254. Written permission was obtained from the institution, where the study would be conducted. The study included nurses, who agreed and signed a written consent to participate in the study and who worked at the institution for at least 1 month.

Consent for publication
Not applicable

Competing interests
The authors declare that they have no conflict of interest to the publication of this article.

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