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**Original Article**

# Evaluation of the factors associated with burnout of nurses working at a state hospital in turkey

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ABSTRACT

**Background & Aim:** Nurse job-related burnout is a global issue; however, it remains unclear how coping strategies over a maintained period of time may influence nursing burnout. The aim of this study was to evaluation the factors associated with burnout of nurses working at a state hospital.
**Methods & Materials**: This cross-sectional study was carried out with 446 nurses working at State Hospital in Turkey in 2013. The Maslach Burnout Inventory was used to assess the three components of burnout syndrome: emotional exhaustion, depersonalization and reduced personal accomplishment in this study. The statistical analyses of the data were performed using the Independent Sample T test, One-Way Anova test and Multiple Linear Regression analysis. Level of statistical significance was considered as $p < 0.05$.
**Results**: The nurses received a mean score of 17±7 on the emotional exhaustion subscale, they received a mean score of 5±3 on the depersonalization subscale, and they received a mean score of 21±4 on the personal accomplishment subscale of the Maslach Burnout Inventory. Univariate analyses revealed significant relationships between the independent variables of sex, feeling satisfied with the job, following professional publications and the subscales of the Maslach Burnout Inventory. According to the multiple linear regression analyses, feeling dissatisfied with the job had the strongest effect on emotional exhaustion, depersonalization, and reduced personal accomplishment scores.
**Conclusion**: Feeling dissatisfied with the job had the strongest effect on emotional exhaustion, depersonalization, and reduced personal accomplishment scores. For this reason, nurses have higher levels of burnout and this is a major occupational health and women's health issue.

## Introduction

Maslach and Leiter defined burnout as "an erosion in value, dignity, spirit, and will - an erosion of the human soul" and defined six significant sources of burnout: workload, absence of control, insufficient rewarding, unfairness, perception of the community, and value conflicts (1). In a general sense, burnout is an individual's psychological syndrome emerging in reaction to an unrelieved / chronic stressor. Occupational burnout "depletes energy, increases emotional exhaustion, lowers resistance to illness, increases depersonalization of interpersonal relationships, increases dissatisfaction and pessimism, and increases absenteeism and work inefficiency" (2). Unlike the times when it was thought that the most significant factor in formation of burnout feelings was individuals themselves and the best solution was making these individuals redundant, it is widely acknowledged today that burnout is an organizational issue affected by the variables related one's occupation and working environment rather than individual variables (3-5). When employees experience extreme stress and feel inadequate to cope

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with it, they lose their commitment to the organization and working capacity that they possess at the beginning of their employment and they tend to experience job dissatisfaction followed by burnout (3, 6). Job satisfaction decreases as emotional exhaustion and depersonalization increase, and job satisfaction increases as personal accomplishment increases (7). Emotional exhaustion is one's feeling overwhelmed accompanied by lack of feelings and feelings of withdrawal. Depersonalization develops as a result of one's avoiding contact with other people around him or her and psychological withdrawal from other people. Personal accomplishment describes one's feelings of overcoming accompanied by feelings of competence and achievement. Reduced personal accomplishment refers to one's feelings of incompetence in professional and interpersonal relationships including his or her feelings of incompetence related to his or her job (8, 9).

Notably in the process that led to the elaboration of the Maslach Burnout Inventory (MBI), the ''gold standard'' for the measurement of burnout-the MBI has been used in 15 of the 17 studies reviewed by Adriaenssens and his colleagues (10). The prevalence of burnout, assessed by use of the Maslach Burnout Inventory in a general working population ranges from 13% to 27% (11, 12), whereas nurses ranges from 30% to 50% (10, 13-15). So, nurses are known to be at higher risk for the development of burnout than other occupations. Nurse burnout is a global issue. In particular, the job environment of nursing is characterized by constant change and shaped by emotional demand and excessive stress.

Evidence suggests that burnout's etiology or causes is multifactorial in nature, with dispositional factors playing an important role (16, 17). One cause of burnout includes stressors that a person is unable to cope with fully. Occupational burnout often develops slowly and may not be recognized until it has become severe. When one's expectations about a job and its reality differ, burnout can begin (12). Burnout is supposed to be a work-specific syndrome. However, this restrictive view of burnout's scope has been shown to be groundless (18). Job satisfaction and quality of life increase in line with the level of personal accomplishment, but they decrease as the levels of emotional exhaustion and depersonalization increase (7). When one's expectations about a job and its reality differ, burnout can begin Nurses' burnout, as measured by emotional exhaustion and absence of personal accomplishment, is a significant factor affecting patient satisfaction, and staffing adequacy, administrative support, and good relations between nurses and physicians affect both nurses' emotional exhaustion and patient dissatisfaction (19-21). In addition, widespread nursing shortage and high turnover rate (22), workload rate (23, 24), care quality (19-21, 24) of the nurses are related to the burnout of the nurses. Some researchers and practitioners have argued for an "exhaustion only" model that views that symptom as the hallmark of burnout (8, 25, 26).

However, it remains unclear how coping strategies over a maintained period of time may influence nursing burnout (27). Nurses with higher levels job satisfaction experience lower levels of burnout and, in this sense, job satisfaction can cure burnout (28). Research on nurse work environment started with the observation that some hospitals in the US were more successful in attracting and retaining nurses compared to other hospitals. In addition, these researchers have been focused on to what extent certain relevant aspects were generalizable and transferable to other hospitals (29). Environmental and physical

problems that are encountered can have a negative effect on the psychology of the employees. According to the World Health Organization, order and a healthy and secure workplace require a healthy job environment which can be created by reciprocal contributions of employees and administrators in the framework of cooperation (30, 31). It is thought that further research is needed in order to accurate recognition of job related burnout signals, determination of variables affecting job related burnout, contribution to the literature on burnout in a health care hospital in Turkey and guiding especially managers and organizations on timely intervention. The purpose of this study was to evaluation the factors associated with burnout of nurses working at a state hospital in Turkey.

## Methods

This was a descriptive study that was carried out with nurses working at Eskisehir State Hospital between January 15 and June 15, 2013. During the time of the study, a total of 531 nurses worked at Eskisehir State Hospital, but the study sample consisted of 446 nurses (84%) who agreed to participate in the study. The inclusion criteria was having experience as a nurse in a hospital. Those nurses who did not agree to participate in the study, those who were on maternity leave, those who were on leave or those who couldn't be reached were excluded from the study.

The study was approved by the Ethical Committee of Eskisehir Osmangazi University Faculty of Medicine (Approval no: 2012/247) and by Turkish Public Hospitals Association. Data were collected in accordance with the Helsinki Declaration. Verbal consent of the nurses was obtained after they were informed about the subject and aim of the study. The questionnaire forms prepared beforehand were filled out by the researchers through face-to-face interview method.

The first part of the questionnaire form consisted of items about some socio-demographic characteristics of the nurses (e.g. sex, marital status, educational background, number of children, family income, current department, having an extra job, duration of total professional experience, duration of work experience at the current department, working shifts, feeling satisfied with the job, volunteering to work in the current department, reason for working at the current department, attending events like congresses/seminars, and following professional publications) and the second part included items about the Maslach Burnout Inventory.

*Maslach Burnout Inventory:* It was developed by Maslach and Jackson in 1981 and its validity and reliability were tested in Turkey by Ergin in 1992 (32). The inventory is a 5-point Likert type scale ranging from 'never' (0 points) to 'always' (4 points) and it consists of 22 items under three subscales: emotional exhaustion, depersonalization, and personal accomplishment. Internal consistencies of the subscales were 0.90, 0.71, and 0.79 for the subscales, respectively. The questions numbered 1, 2, 3, 6, 8, 13, 14, 16, and 20 are about emotional exhaustion; those numbered 5, 10, 11, 15, and 22 are about depersonalization; and those numbered 4, 7, 9, 12, 17, 18, 19, and 21 are related to personal accomplishment. The possible scores that can be received from the emotional exhaustion subscale range between 0 and 36, those on the depersonalization subscale range between 0 and 20, and those on the personal accomplishment subscale range between 0 and 32. There is no cut-off score to demonstrate burnout level. Burnout is measured not based on a single score but based on all the three scores on the subscales. As a result, three separate scores

are obtained for an individual. Individuals experiencing burnout are expected to receive higher scores on the emotional exhaustion and depersonalization subscales but lower scores on the personal accomplishment subscale. In other words, higher scores on the emotional exhaustion and depersonalization subscales indicate more burnout while higher scores on the personal accomplishment subscale indicate less burnout. While moderate scores correspond to a moderate level of burnout for all the three subscales, a lower level of burnout is indicated by lower scores on the emotional exhaustion and depersonalization subscales but by higher scores in the personal accomplishment subscale. Three separate burnout scores are calculated for an individual. Cronbach's alpha coefficients for the original version of the subscales were 0.90 for emotional exhaustion, 0.79 for depersonalization, and 0.71 for personal accomplishment (9). Cronbach alpha coefficients for this study were 0.91, 0.74, and 0.75 for the subscales, respectively.

The statistical analyses of the data were performed using the Independent Sample T test, One-Way Anova test and Multiple Linear Regression analysis. A value of $p < 0.05$ was considered to be the level of statistical significance.

## Results

Demographic characteristics of the nurses were shown in table 1. The scores received by the nurses on the emotional exhaustion subscale of the Maslach Burnout Inventory ranged between 0 and 36 with a mean score of 17±7. Also, the scores received by the nurses on the depersonalization subscale ranged between 0 and 18 with a mean score of 5±3. Finally, their scores on the personal accomplishment subscale ranged between 0 and 32 with a mean score of 21±4.

The study found no differences between the nurses' marital status and number of children and burnout ($p > 0.05$ for each), also no differences between the nurses current departments and their total duration of professional experience and working duration in their current departments and burnout ($p > 0.05$ for each) (Table 2).

The Durbin-Watson statistic is a test statistic used to detect the presence of autocorrelation in the residuals (prediction errors) from a regression analysis. The test statistic can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated (33). The Durbin-Watson value closer to 2 indicates non-autocorrelation and the assumption has almost certainly been met for the model.

**Table 1.** Some demographic and workplace / job related characteristics of nurses

| **Some Demographic and Workplace/Job Related Characteristics** | **Frequency n (%)** |
|---|---|
| **Sex** | |
| Female | 392 (87.9) |
| Male | 54 (12.1) |
| **Current Department** | |
| Department of Internal Medicine | 226 (50.7) |
| Department of Surgical Medicine | 220 (49.3) |
| **Working Shifts** | |
| No | 129 (28.9) |
| Yes | 317 (71.1) |
| | **Mean ± SD (min & max)** |
| **Age** | 31.9±8.06 (18 & 59) |
| **Total duration of professional experience (year)** | 10±8 (0 & 36) |
| **Working duration in current institution (year)** | 4±5 ( 0 & 30) |

**Table 2**. Distribution of the nurses' Maslach burnout inventory mean scores according to some socio-demographic and workplace/job related characteristics

| Socio-Demographic and Workplace/Job Related Characteristics | | N | Maslach Burnout Inventory | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Emotional Exhaustion | | Depersonalization | | Personal Accomplishment | |
| | | | Mean ± SD | Test | Mean ± SD | Test | Mean ± SD | Test |
| **Sex** | | | | | | | | |
| Female | | 392 | 17.62±7.58 | **t = -4.320** | 5.79±3.84 | **t = -2.244** | 21.12±4.26 | **t = 2.779** |
| Male | | 54 | 12.83±8.06 | **p = 0.000** | 4.55±3.54 | **p = 0.020** | 22.90±5.47 | **p = 0.006** |
| **Age group** | | | | | | | | |
| ≤ 29 | (0) | 169 | 5.82±3.91 | | 21.41±4.55 | | 3.22±0.62 | |
| 30-34 | (1) | 102 | 5.29±3.82 | **F = 3.321** | 21.30±4.88 | F = 1.149 | 3.22±0.67 | F = 1.191 |
| 35-39 | (2) | 105 | 6.37±3.93 | **p = 0.020** | 20.78±4.32 | p = 0.329 | 3.11±0.62 | p = 0.313 |
| ≥40 | (3) | 70 | 4.64±3.22 | | 22.04±3.66 | | 3.29±0.65 | |
| Pairwise Comparison | | | (2-3) p = 0.035 | | - | | - | |
| **Education** | | | | | | | | |
| High-school | (0) | 154 | 5.18±3.78 | F = 2.165 | 21.99±5.12 | F = 2.584 | 3.36±0.63 | **F = 7.349** |
| Two-year college | (1) | 47 | 6.36±3.95 | p = 0.116 | 20.85±4.17 | p = 0.077 | 3.10±0.63 | **p = 0.001** |
| College | (2) | 245 | 5.80±3.81 | | 21.02±4.01 | | 3.13±0.62 | |
| Pairwise Comparison | | | - | | - | | (0-1) p = 0.044<br>(0-2) p = 0.002 | |
| **Family Income** | | | | | | | | |
| Low | | 21 | 5.66±3.46 | F = 2.103 | 4.90±1.06 | F = 2.875 | 2.98±0.57 | F = 2.919 |
| Middle | | 249 | 5.96±4.01 | p = 0.123 | 4.58±0.29 | p = 0.057 | 3.17±0.64 | p = 0.055 |
| High | | 176 | 5.19±3.55 | | 4.17±0.31 | | 3.28±0.63 | |
| **Marital Status** | | | | | | | | |
| Married | | 270 | 16.95±8.03 | t = 0.287 | 5.35±3.65 | t = 1.964 | 21.31±4.44 | t = 0.139 |
| Single | | 176 | 17.17±7.42 | p = 0.774 | 6.08±4.04 | p = 0.055 | 21.37±4.49 | p = 0.889 |
| **Number of Children** | | | | | | | | |
| 0 | | 199 | 6.02±3.99 | F = 2.084 p = 0.126 | 21.57±4.65 | F = 0.912 | 3.20±0.63 | F = 0.027 |
| 1 | | 120 | 5.13±3.83 | | 20.88±4.61 | p = 0.402 | 3.22±0.73 | p = 0.973 |
| 2 and more | | 127 | 5.54±3.50 | | 21.40±3.97 | | 3.21±0.56 | |
| **Current Department** | | | | | | | | |
| Department of Internal Medicine | | 226 | 16.89±7.39 | t = -0.402 | 5.64±3.60 | t = -0.023 | 21.44±4.13 | t = 0.520 |
| Department of Surgical Medicine | | 220 | 17.19±8.19 | p = 0.688 | 5.65±4.04 | p = 0.982 | 21.22±4.77 | p = 0.604 |
| **Working Shifts** | | | | | | | | |
| No | | 129 | 14.62±7.75 | **t = 4.259** | 4.98±3.81 | **t = 2.340** | 21.51±4.45 | t = -0.546 |
| Yes | | 317 | 18.02±7.60 | **p = 0.000** | 5.91±3.80 | **p = 0.020** | 21.26±4.46 | p = 0.585 |
| **Total Duration of Professional Experience (Years)** | | | | | | | | |
| < 5 | | 143 | 5.76±3.96 | | 21.18±4.41 | | 3.23±0.62 | |
| 5-9 | | 76 | 5.65±3.97 | F = 0.616 | 21.71±5.38 | F = 0.415 | 3.26±0.68 | F = 0.432 |
| 10-14 | | 69 | 5.47±3.85 | p = 0.651 | 21.04±4.89 | p = 0.798 | 3.17±0.64 | p = 0.785 |
| 15-19 | | 78 | 6.06±3.67 | | 21.15±3.91 | | 3.14±0.61 | |
| ≥ 20 | | 80 | 5.16±3.56 | | 21.70±3.65 | | 3.21±0.67 | |
| **Duration of Working Experience in the Current Institution (Years)** | | | | | | | | |
| < 5 | | 312 | 5.55±3.74 | | 21.46±4.58 | | 3.22±0.64 | |
| 5-9 | | 64 | 6.39±4.13 | F = 1.154 | 20.89±4.21 | F = 0.394 | 3.13±0.67 | F = 0.666 |
| 10-14 | | 30 | 5.00±4.11 | p = 0.327 | 21.46±3.66 | p = 0.757 | 3.28±0.57 | p = 0.573 |
| ≥ 15 | | 40 | 5.65±3.67 | | 20.97±4.44 | | 3.13±0.59 | |
| **Having an Extra Job** | | | | | | | | |
| No | | 431 | 17.11±7.78 | t = -1.068 | 5.71±3.84 | **t = -1.976** | 21.22±4.43 | **t = 3.027** |
| Yes | | 15 | 14.93±8.08 | p = 0.286 | 3.73±2.81 | **p = 0.049** | 24.73±3.91 | **p = 0.003** |
| **Volunteering to Work in the Current Department** | | | | | | | | |
| No | | 162 | 19.25±7.98 | **t = -4.623** | 6.33±4.06 | **t = -2.827** | 20.87±4.37 | t = 1.656 |
| Yes | | 284 | 15.78±7.40 | **p = 0.000** | 5.25±3.62 | **p = 0.005** | 21.60±4.49 | p = 0.098 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Feeling Satisfied with the Job** | | | | | | | |
| No | 107 | 24.07±6.64 | **t = -12.409** | 8.00±4.44 | **t = -7.808** | 19.33±4.62 | **t = 5.500** |
| Yes | 339 | 14.82±6.77 | **p = 0.000** | 4.89±3.28 | **p = 0.000** | 21.97±4.21 | **p = 0.000** |
| **Attending Events Like Congresses/Seminars over the Last Year** | | | | | | | |
| No | 287 | 17.71±8.03 | **t = -2.451** | 5.77±3.98 | t = -.947 | 20.78±4.74 | **t = 3.837** |
| Yes | 159 | 15.83±7.19 | **p = 0.015** | 5.41±3.52 | p = 0.344 | 22.33±3.69 | **p = 0.000** |
| **Following Professional Publications** | | | | | | | |
| No | 113 | 20.02±7.17 | **t = -4.824** | 6.82±4.17 | **t = -3.844** | 21.98±3.96 | **t = 5.394** |
| Yes | 333 | 16.03±7.74 | **p = 0.000** | 5.24±3.61 | **p = 0.000** | 19.44±5.23 | **p = 0.000** |
| **Total** | 446 | 5.64 ± 3.82 | | 21.33± 4.45 | | 3.21± 0.64 | |

• t: Independent Sample T Test, F: One-Way Anova (Scheffe test was used for pairwise comparison)

**Table 3.** Results of the multiple linear regression analysis of variables affecting Maslach burnout inventory's emotional exhaustion, depersonalization and personal accomplishment subfield scores

| **Multiple Linear Regression Model** | **Unstandardized** | | **Standardized** | **t** | **P-value** | **VIF** |
|---|---|---|---|---|---|---|
| | **β** | **SE** | **β** | | | |
| **Emotional exhaustion** | | | | | | |
| Feeling dissatisfied with the job | 7.963 | 0.728 | 0.437 | 10.94 | 0.000 | 1.070 |
| Being women | 4.264 | 0.924 | 0.179 | 4 | 0.000 | 1.006 |
| Not following professional publications | 3.033 | 0.697 | 0.169 | 4.617 | 0.000 | 1.019 |
| Working shifts | 2.200 | 0.673 | 0.128 | 4.352 | 0.001 | 1.032 |
| Not volunteering to work in the current department | 1.812 | 0.637 | 0.112 | 3.270 | 0.005 | 1.040 |
| | | | | 2.844 | | |
| | $R^2$ = 0.345 ; sd = 6.34; F = 46.310 ; Durbin Watson=1.785 | | | | | |
| **Depersonalization** | | | | | | |
| Feeling dissatisfied with the job | 2.907 | 0.397 | 0.325 | 7.329 | 0.000 | 1.019 |
| Not following professional publications | 1.252 | 0.389 | 0.142 | 3.221 | 0.001 | 1.015 |
| Being women | 1.033 | 0.516 | 0.088 | 2.003 | 0.046 | 1.005 |
| | $R^2$ = 0.148 ; sd = 3.54; F = 25.547 ; Durbin Watson = 1.845 | | | | | |
| **Personal accomplishment** | | | | | | |
| Feeling dissatisfied with the job | -2.270 | 0.461 | -0.218 | -4.921 | 0.000 | 1.018 |
| Not following professional publications | -2.052 | 0.462 | -0.200 | -4.438 | 0.000 | 1.060 |
| Having an extra job | 2.891 | 1.090 | 0.117 | 2.651 | 0.008 | 1.013 |
| Not attending events like congresses/seminars over the last year | -1.127 | 0.418 | -0.121 | -2.699 | 0.007 | 1.049 |
| High-school graduates | 1.082 | 0.414 | 0.115 | 2.613 | 0.009 | 1.016 |
| | $R^2$ = 0.154 ; sd = 4.12; F = 16.008 ; Durbin Watson = 1.988 | | | | | |

 Multiple Linear Regression Analysis (Stepwise Method)

According results in table 3, the multiple linear regression analyses revealed that five variables were significantly related to emotional exhaustion scores. Feeling dissatisfied with the job, being women, not following professional publications, working shifts and not volunteering to work in the current department were important predictors of emotional exhaustion scores. According to the model, feeling dissatisfied with the job had the strongest effect on emotional exhaustion, depersonalization, and reduced personal accomplishment scores. Feeling dissatisfied with the job was associated with a 7.96 point increase in emotional exhaustion score, a 2.90 point increase depersonalization score and a 2.70 point decrease personal achievement score relative to those who are satisfied with their job. Women's emotional exhaustion and depersonalization scores compared to men increased by 4.26 and 1.03 points, respectively. Not following professional publications was associated with a 3.03 point increase in emotional exhaustion score, a 1.25 score increase depersonalization score and a 2.05 point decrease personal achievement score

compare to the following professional publications. Nurses' emotional exhaustion score with working shifts and non-volunteers to work in the current department compared to other circumstances increased by 2.20 and 1.81 points, respectively. Personal accomplishment scores among nurses who have an extra job were 2.89 point higher than other nurses. Nurses' personal accomplishment scores who do not attend events like congresses/seminars over the last year were 1.12 point lower than those attending the events. Personal achievement scores of high school graduates were 1.08 point higher than two-year college graduates and college graduates ($p < 0.05$ for each; Table 3).

## Discussion

In this study, the mean scores of the nurses on the emotional exhaustion, depersonalization and personal accomplishment subscales were 17, 5, and 21, respectively. Research suggested that nurses tend to receive scores ranging between 18 and 33 on the emotional exhaustion subscale, between 2 and 13 on the depersonalization subscale, and between 20 and 37 on the personal accomplishment subscale (10, 14, 20, 34-38). Therefore, the results from this study are similar to those in the relevant literature.

The women in this study had higher scores on the emotional exhaustion and depersonalization subscales but lower scores on the personal accomplishment subscale than the men. Women have a higher level of workload as they work both at home and at work, so they tend to be at higher risk of burnout (39). Similarly, research showed that women experience higher levels of burnout than men (40, 41). In addition, women's emotional exhaustion and depersonalization scores compared to men increased by 4.26 and 1.03 points, respectively. Not following professional publications was associated with a 3.03 point increase in emotional exhaustion score, a 1.25 score increase depersonalization score and a 2.05 point decrease personal achievement score compare to the following professional publications (Table 3). The reason why women have higher levels of burnout could be the fact that they undertake more responsibility at home in terms of gender mainstreaming, they are considered to be more emotional or not assertive, and men hardly undertake any responsibility at home and tend to give more active or assertive reactions. On the other hand, some studies found that men have higher levels of emotional exhaustion (6) and depersonalization (34). Nevertheless, there are many studies suggesting that gender has no effect on burnout (14, 38, 42-44).

The nurses over 40 years of age in this study received lower scores on the emotional exhaustion and depersonalization subscales than the nurses in other age groups. Younger nurses tend to start their profession with unrealistic (high) institutional or patient care goals or their positive opinions about their profession or workplace are replaced by feelings of disappointment about a year after they start their job and when they face harsh reality, and, therefore, they are expected to be more prone to burnout (45, 46), emotional exhaustion and depersonalization (47) or only depersonalization (48). The reason for this result could be that individuals learn to compensate for their expectations in different ways and this may decrease burnout. Research showed that this situation is caused by the fact that nurses' levels of emotional exhaustion and depersonalization decrease with increasing age (40, 49, 50). Although some studies found that younger nurses have higher levels of depersonalization (48, 51) and burnout-depersonalization (47, 51) or that older

nurses experience higher levels burnout (52), there are also other studies suggesting that there is no significant difference between age and burnout (14, 35, 37, 42-44). These different results about age and burnout may be due to the fact that it is almost impossible to determine whether nurses' young age or inexperience (8) or unchanging working conditions despite their increasing age and experience (39) pose higher risk of burnout. According to Gómez-Urquiza gender, marital status, and study characteristics moderated the relationship between age and burnout and may be crucial for the identification of high-risk groups (51).

This study found no significant difference between the nurses' level of education and their scores on the emotional exhaustion and depersonalization subscales. On the other hand, college graduate nurses tend to have higher expectations and, therefore, they are more likely to feel frustrated as their expectations do not come true and they are more likely to experience burnout as they feel worn out more (48). In fact, Kaya et al. (40) found that nurses experience higher levels of mental exhaustion with increasing levels of education. Similarly, there are a number of studies suggesting that there is no significant difference between burnout and educational background (14, 35, 38, 42, 53). Nevertheless, the high-school graduate nurses in this study had higher levels of personal accomplishment ($p<0.05$). Personal achievement scores of high school graduates were 1.08 point higher than two-year college graduates and college graduates (Table 3). Günüşen and Üstün found that nurses who are graduates of a medical vocational high school or a two-year college have higher levels of emotional exhaustion than those with a graduate or postgraduate degree (37). Kebapçı and Akyolcu, however, found that nurses with a graduate or postgraduate degree have higher levels of emotional exhaustion (48).

In this study, the nurses with a high level of family income had lower levels of emotional exhaustion. Employees feeling dissatisfied with their socioeconomic status were found to have higher levels of emotional exhaustion and depersonalization (48). In addition to, personal accomplishment scores among nurses who have an extra job were 2.89 point higher than other nurses. Similarly, research showed that nurses having a more negative perception of their financial status have higher levels of emotional exhaustion and depersonalization (48, 52) and those nurses finding their payments insufficient have higher levels of depersonalization (35, 43, 49). However, Amiri et all no significant relationship was observed between burnout and having a second job (14).

This study found no significant difference between the participants' marital status and their scores on the subscales of the Maslach Burnout Inventory. According to Maslach and Jackson, married individuals are more likely to have a higher capacity of establishing interpersonal relationships and to have more developed skills to cope with and solve problems. They suggested that this situation reduces burnout for married individuals and the fact that non-married individuals are alone and do not live in a family environment can be the reason why they seem to be more prone to burnout, but increasing responsibilities, stress and workload can be reflected in professional lives of married individuals and decrease their productivity and achievement (54). This result is also supported by the literature (35, 37, 40, 41, 44, 53). The reason for this result could be that both married and non-married people can experience similar burnout symptoms because non-married people do not live in a family environment and suffer from loneliness and increasing

responsibilities, stress and workload can be reflected in professional lives of married people. On the other hand, Şahin et al. found that non-married people have higher levels of emotional exhaustion and depersonalization, and divorced people have higher levels of personal accomplishment (42). Also, although some studies found that non-married individuals have higher levels of personal accomplishment than married ones (39, 55) some other studies showed that non-married individuals have lower levels of personal accomplishment than married ones (38).

This study, however, found no significant difference between number of children and the participants' scores on the subscales of the Maslach Burnout Inventory. Since nurses with children have higher workload because they are supposed to work at both their workplaces and homes and they provide care for their children, they tend to be at higher risk of burnout (36). This result is supported by the literature (36, 52, 55). On the other hand, there are also studies suggesting that nurses with no children have higher levels of emotional exhaustion (7), depersonalization (39, 49) and personal accomplishment (38).

This study, however, found no significant difference between the nurses' current departments and their scores on the subscales of the Maslach Burnout Inventory. Nurses working in departments of emergency services or intensive care units suffer from extreme exhaustion due to the busy pace of these places and when this becomes a constant condition, they are more likely to have lower levels of job satisfaction and experience burnout (56). A number of studies suggested that nurses working departments of emergency services, intensive care and surgical medicine have higher levels of personal accomplishment than those working in departments of internal medicine (35, 38, 41, 47-49, 57). On the other hand, Kaya et al. (40) showed that there was no significant relationship between the departments where nurses work and burnout. Raftopoulos et al. suggested that (43) this difference about the relationship between the departments where nurses work and burnout could be related to the working conditions of their departments, their level of morale and clarity of their job descriptions.

This study found no significant difference between total duration of professional experience and the nurses' scores on the subscales of the Maslach Burnout Inventory. Similarly, Amiri et all, no significant relationship was observed between burnout and experience (14). It is expected that, as total duration of professional experience increases, coping behaviors about the problems at the workplace can be improved more easily and professional burnout decreases with increasing experience (35). Kebapçı and Akyolcu (48) found that nurses with the longest duration of professional experience have lower levels of emotional exhaustion and depersonalization. Similarly, a number of studies showed that nurses are more likely to have lower levels of emotional exhaustion and depersonalization with increasing duration of professional experience (35, 40, 49). Günüşen and Üstün (58), on the other hand, found that nurses with a professional experience of 16 years or more have higher levels of emotional exhaustion only. Taycan et al. found that those with a professional experience of 1-5 years have lower levels of burnout than those with a professional experience of 18 years or longer (38). Higher levels of personal accomplishment among nurses with a professional experience of 20 years or more can be due to their willingness to show people that they are useful as their self-esteem increases with increasing age and professional experience. Altay et al. showed that level of personal accomplishment

increases with increasing age (53). Günüşen and Üstün, on the other hand, found that those with a professional experience of 5 years or less have higher scores on the personal accomplishment subscale (58).

In fact, this study found that the nurses working shifts received higher scores on the emotional exhaustion and depersonalization subscales than those not working shifts. According to the Table 3, nurses' emotional exhaustion score with working shifts increased by 2.20. Factors like reduced sleep quality in nurses working shifts is considered to increase levels of emotional exhaustion and depersonalization (59). Research showed that nurses who work shifts or have to work overtime experience higher levels of burnout (7, 48, 52, 60). Günüşen and Üstün (58) and Oğuzberk and Aydın (43) found that nurses experience higher levels of (only) emotional exhaustion with increasing duration of working shifts. However, there are some studies suggesting that there is no difference between working shifts and burnout (35, 38).

In fact, this study found that the nurses who volunteered / choosing to work in their current departments received lower scores on the emotional exhaustion and depersonalization subscales and they received higher scores on the personal accomplishment subscale. Similarly, Amiri et all, showed that a significant relationship was observed between burnout, job resources and interest in job (14). According to the Table 3, nurses' emotional exhaustion score with non-volunteers to work in the current department compared to other circumstances increased 1.81 points. In addition, according to the model in this study, feeling dissatisfied with the job had the strongest effect on emotional exhaustion, depersonalization, and personal accomplishment scores. Feeling dissatisfied with the job was associated with a 7.96 point increase in emotional exhaustion score, a 2.90 point increase depersonalization score and a 2.70 point decrease personal achievement score relative to those who are satisfied with their job (Table 3). Frequent witnessing of traumatic incidents among health care professionals can cause burnout as well as various mental problems (61). Nurses, who are among these health care professionals, are prone to lower job satisfaction, depersonalization and exhaustion due to factors such as the workload of a typical medical workplace, emotional stress caused by working with patients and individuals waiting for health care, and direct conflicts with patients and patients' relatives (58). Ensuring that nurses work in the departments which they prefer as much as possible can significantly increase their job satisfaction and decrease their level of burnout (42, 48).

This study found that the nurses who attended congresses/seminars etc. over the last year had lower levels of emotional exhaustion and higher levels of personal accomplishment (Table 2). But nurses' personal accomplishment scores who do not attend events like congresses/seminars over the last year were 1.12 point lower than those attending the events (Table 3). Those not attending social events are likely to have higher mean scores of emotional exhaustion and depersonalization. Finally, this study found that the nurses following professional publications had lower levels of emotional exhaustion and depersonalization, and higher levels of personal accomplishment.

Burnout is a process and is not a situation that occurs in a night. For this reason, it is important for administrators and organizations to directly perceive the signals, awareness and timely intervention. Nurses have higher levels burnout and this is a major occupational health and women's health issue. It is suggested that making arrangements to decrease the amount of working shifts, taking nurses' preferences

about which departments they want to work in, and promoting scientific nursing activities may help reduce nurses' burnout levels. Burnout is thought to be influenced by many variables, which are not influenced by a single variable. In this study, the multiple linear regression analyses revealed that five variables were significantly related to emotional exhaustion scores. Feeling dissatisfied with the job, being women, not following professional publications, working shifts and not volunteering to work in the current department were important predictors of emotional exhaustion scores. In addition, age and working status in a secondary job were associated with nurses' burnout lives. In the direction of these prominent variables, it shows that some regulations should be made to support burnout people and to prevent burnout. These methods that can be applied are important of hospitals. It is very important that organizational methods are designed to quickly remove and enforce structural regulations that will prevent the exhaustion of the nurses and the exhaustion of the causes that cause the exhaustion of the nurses in the hospital. This is because the disruptions created by the quality of the service affect employees directly or indirectly, such as frequent job changes, absenteeism or even economic damages caused by health problems. Nurses should be taught the difficulties and risks of work done at the beginning of the job and the signs of exhaustion. Work should be provided in the section where they will perform best. Nurses should know the limits of their responsibilities and be able to protect themselves from falling under the loads they cannot afford. They should be made aware of the need for help when necessary. One should definitely use holiday and rest facilities. Meeting with other working nurses outside the work environment will also be an effective way to reduce the exhaustion of team spirit creation. In this direction, our outputs and suggestions were shared with the hospital administration. Hospital management has been informed us that they will start working on the necessary arrangements that they consider our proposals.

The main limitation of this study is the total burnout or the prevalence of burnout in work cannot be calculated. Another limitation of the current study is its poor generalizability due to the single-institute nature. Thus, applying the results of this study for the other institutions is questionable in Turkey and elsewhere.

The findings of this study not only can provide useful basis for future research in the field, but also can offer practical suggestions for improving nursing practice and promote effective workplace, thus reducing the risk burnout among nurses.

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## Conflict of Interest

The authors declare that they have no conflicts of interest.

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