

# **Occupational Stress among Hospital Nurses: Comparison of Internal, Surgical, and Psychiatric Wards**

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## **ABSTRACT**

### **Background**

Managing and coping with occupational stress as a recognized problem in the modern era, is vital and important. Nursing is by nature a stressful occupation. Continuous and long-term stress can result in physical, psychological, and behavioral problems in nurses. We aimed to assess occupational stress in nurses working in surgical, internal and psychiatric wards in teaching hospitals of Shiraz, southern Iran.

### **Methods**

In this cross-sectional study, 180 nurses were selected among nurses working in surgical, internal and psychiatric wards of 4 teaching hospitals affiliated to Shiraz University of Medical Sciences. Data were collected using questionnaires containing Health and Safety Executive (HSE) and demographic information. Statistical analysis was done using SPSS software. *t* test and analysis of variance (ANOVA) were used as appropriated.

### **Results**

The results of the study indicated that nurses of surgical and internal wards showed significantly higher level of occupational stress in most scales of occupational stress, except relationship, compared with nurses working in psychiatric wards. There was no significant correlation among scales of occupational stress and age, marital status, work shifts and experience. However, we found a significant correlation with some scales of occupational stress and sex and education level.

### **Conclusion**

The findings suggest that occupational stress varies within different wards in the hospitals. Occupational stress should be prevented and controlled early and nurses should be supported in this regard.

**KEYWORDS:** Occupational Stress; Nurse; Ward

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## INTRODUCTION

Diseases related to stress are widely prevalent around the world and a lot of people are disabled due to stress. Stress is the psychological and physiological response to threatening and unpleasant environmental factors.

Occupation is one of the most important sources of stress in people's lives. For each person, occupation is a source of social identity, needs, and an opportunity for social contact; therefore, it is considered as a major source of stress.<sup>1</sup> Based on Cooper's definition, occupational stress is the result of the interaction between the individual and the work environment.<sup>2</sup> Occupational stress is a risk factor for depressive symptoms.<sup>3,4</sup>

Factors such as extensive workload, lack of autonomy, long working time, abusive management, bad relationship with coworkers, lack of equal opportunities have been implicated in stress related to workplace.<sup>5</sup>

In other classifications, such factors contribute to workplace stress as physical agents (light, sound, heat or cold), occupational factors (workload, ambiguity and job problems, changes, pressure about time saving, taking responsibility too low or too high), factors related to organizational management (lack of organizational support, structural weakness, poor management), synergistic factors (lack of solidarity, weak group support), factors associated with individual expectations (hopes and early expectations, retirement concerns), and factors outside the work environment (family life, marriage, parents, finances, friends and community relations).<sup>6-8</sup>

A survey conducted by a life insurance company in America showed that 46% of the employed personnel thought that their job involved a lot of stress. The rate of stress-related disabilities has increased from 6% in 1982 to 13% in 1991.<sup>2</sup> One out of every three Americans has left his job due to stress. People have different interpretations from their jobs and have different ways to achieve job satisfaction.<sup>9</sup>

The levels of stress vary with the type of professional activity. The National Institute for Occupational Safety and Health (NIOSH) has rated 13 jobs based on the stress level. Jobs with high levels of stress include workers, secretaries, laboratory technicians, nurses and first-line supervisors, waiters, machine operators, farm workers and miners.<sup>2</sup> It is believed that nurses experience more stress compared with other occupational groups because of caring for suffering and dying patients, the need to hide negative emotions and organizational changes.<sup>10</sup>

Smith has identified several stressful factors for nurses such as facing the patient's death, contact with colleagues, not being prepared to deal with the emotional issues of patients, lack of adequate protection of the employer organization, work load, and uncertainty about the guidelines.<sup>11</sup>

Other researchers concluded that hospital restructuring and workload were associated with high levels of absenteeism among nurses.<sup>5</sup> Moreover, job stress was found to reduce the quality of nursing patient care.<sup>12</sup> By recognizing and preventing occupational stress in nurses, it is possible to enhance the level and quality of mental health services is possible.

In Iran, health issues about nurses in the workplace are a neglected topic. We aimed to evaluate occupational stress in nurses in surgical, internal and psychiatric wards. The role of demographic variables was also assessed.

## MATERIALS AND METHODS

This cross-sectional study was conducted in four teaching hospitals affiliated to Shiraz University of Medical Sciences during 2011. This study was approved by the Ethics Committee of the Shiraz University of Medical Science (ethic code: EC-P-90-2624). 180 nurses working in surgical (n=60), internal (n=60) and psychiatric (n=60) wards were selected.

The inclusion criteria were lack of physical disease, no history of neurological or psychiatric diseases, and no drug addiction. The nurses should have at least 6 months of

work experience in the ward. Nurses who were not willing to complete the questionnaire were excluded.

A sample size of 60 subjects in each group was determined by previous studies ( $P < 0.05$ , power 0/8). The nurses were selected using the convenience sampling method. The nurses in surgical wards 1, 2, 3 and 4 in Shahid Faghihi Hospital, and general surgery and urology wards in Nemazee Hospital were considered as those working in surgical wards. Nurses in internal wards of Shahid Faghihi and Nemazee Hospitals were considered as internal ward nurses and those working in psychiatric wards of Hafez and Ebnsina hospitals were considered as psychiatric ward nurses.

The questionnaires were distributed among the participants. The nurses were given a description of the study goals and results and their questions were answered. The questionnaire consisted of two parts. The first section included demographic data such as age, sex, marital status, education, work history, medical history, history of any chronic or neurological disease. The second part was the Job Stress Questionnaire of the Britain's Health and Safety Institute (HSE). This 35-item questionnaire with seven areas was made by the British Institute to measure stress and employee health and safety in the late 1990s. In 2010, the reliability and validity of this questionnaire was evaluated for the Iranian population. Cronbach's alpha coefficient was 0.78 and the questionnaire had a Spearman's rank correlation coefficient of 0.65.<sup>13</sup>

This questionnaire's subscales consist of demand (8 questions on topics such as workload), control (6 questions about the extent to which a person is unable to control his actions), authorities support (5 questions about the management and the amount of support that a person had received by the service), colleagues support (4 questions about the amount of support that a person received from his/her colleagues), relationship (4 items about conflict and fighting in the workplace), role (5 questions on understanding the role of organized labor in its service personnel),

changes (3 questions about the organization and the amount of change in the workplace). Each value represents the mean score for each scale. The range was from 1 to 5, where 1 is the desired state, and 5 indicates a stressful state.

We considered four age groups including 19-25, 26-30, 31-35 and above 35 years old. Levels of education were categorized into three groups including, diploma, associate degree, bachelors and masters degrees. Working experience was divided into 4 groups: 1-5 years, 6-10 years, 11-15 years and above 15 years. Moreover, the participants were divided into 4 groups with respect to their marital status: single, married, divorced, or widowed. However, because of the small number of divorcees and widows (2 people), they were merged into the married group.

Data were analyzed using SPSS software, version 16. One-way analysis of variance (ANOVA) and Student's *t* test were used to analyze the data. A  $P < 0.05$  was considered as statistically significant.

## RESULTS

In this study 113 (62.8%) women and 67 (37.2%) men participated. 62.8% were single and 37.2% were married. 147 (81.7%) people had rotating shifts, 31 (17.2%) had fixed morning or evening shifts, and only 2 (1/1%) had fixed night shifts. Maximum working nights were 5 nights per week for 0.6% of nurses. 66.1% had bachelor's and master's degrees, 22.8 had diplomas and associate degrees and 11.1% had elementary education (third grade of primary school). This group of nurses are school students and trained as nursing assistants.

The mean work experience of the nurses participating in the study was 8.37 years. 50% of the nurses had 1-5 years of work experience; 20% of them had worked for 6-10 years, 13.9% of them had 11-15 years of work experience, and 16.1% worked over 15 years. The mean  $\pm$  SD working hours per week was  $51.23 \pm 16.6$  hours. The maximum working hours was 75 and the minimum was 26 hours per week.

The stress of nurses in surgical, psychiatric, and internal wards was compared with respect to the 7 mentioned aspects. One-way ANOVA and Student's *t* test were used to analyze the data. In this model, the dependent variables were the scales of occupational stress: demands, control, roles, relationship, authorities' support, colleagues' support, and changes.

Independent variables were wards (surgery, internal medicine and psychiatry), sex (male and female), marital status (single, married), age, work experience and education.

No significant differences were found between age groups and areas of stress. No significant differences were found between work experience and areas of stress. Demand and relationship were significantly related to sex. There was a significant difference by sex in the scale of demand and female nurses had higher scores ( $P=0.001$ ). There was also a significant difference between the sexes in relationship scale ( $P=0.001$ ). Men had higher scores in this scale.

According to ANOVA test results, we found a significant difference between nurses in different wards and scales of demand, authorities support, colleague support, communication, and change.

Based on Post Hoc test (LSD), there was a significant difference between the demand scales in the surgical and psychiatric wards ( $P=0.001$ ). Nurses in the surgery ward had significantly higher scores on this scale. Also, there was a significant difference between internal medicine and psychiatry wards in the scale of demand ( $P=0.001$ ) and the nurses' scores were higher in the internal ward. But there was no significant difference at this scale between the internal and surgery wards ( $P=0.001$ ).

There were significant differences in authorities support scale between surgical and psychiatric wards ( $P=0.001$ ) and the surgical ward nurses had significantly higher scores in this score.

Internal and psychiatry wards had also significant differences in the scale of authorities support ( $P=0.014$ ). The internal

medicine ward nurses had higher scores. This scale was not different between the surgical and internal wards.

Colleagues' support scale was different between surgical and psychiatric wards and between psychiatric and internal wards ( $P=0.005$ ,  $P=0.008$ ) and nurses in surgical and internal wards had a higher score. There was no significant difference between internal and surgical wards. In the changes scale, there were significant differences between surgical and psychiatric wards ( $P=0.01$ ), and the scores of nurses in the surgical ward was higher. And there was no significant difference between internal and surgical wards and between psychiatric and internal wards.

Communication Scale was significantly different between internal and psychiatric wards. Psychiatric nurses had more scores on this scale. There was no significant difference between internal and surgical wards and between psychiatric and surgical wards. Occupational stress scores in different wards are shown in table 1.

There was no significant difference in the role and control scale between the nurses in different wards and there is no significant difference in the occupational stress scales between nurses in different marital status.

Also, there were significant differences between education level in the areas of demand, colleague support, and communication.

The groups were compared with the statistical Post Hoc test (LSD). With respect to the scale of demand, a significant difference was observed between undergraduate and graduate degrees and diploma groups ( $P=0.0001$ ). Nurses who had diploma and associate degrees had a higher score; however, no significant differences were observed between the other groups in this scale.

There was no significant difference between the scales of occupational stress and shift work and there was no significant relationship between measures of stress and working hours per week. The results showed that there was no significant relationship between the number of nurses' night shifts and the stress scales.

**Table 1:** Occupational stress scores in different wards

	Wards (mesn±SD)			P value
	Surgery	Internal Medicine	Psychiatry	
Demand	3.41±0.59	3.62±0.59	3±0.64	0.001
Authorities support	3.15±0.69	3.14±0.88	2.7±0.71	0.14
Colleagues support	2.97±0.72	3±0.82	2.57±0.85	0.005
Changes	3.2±0.80	2.86±0.88	3.31±0.88	0.008
Communication	3.37±0.78	3.12±0.97	2.90±0.87	0.035
Role	2.10±0.71	2.22±0.71	1.97±0.67	0.146
Control	3.23±0.63	3.23±0.69	3±0.72	0.158

## DISCUSSION

The results of the study indicated that nurses of surgical and internal wards showed significantly higher level of occupational stress in most scales of occupational stress, except relationship, compared with nurses working in psychiatric wards. There was no significant correlation among scales of occupational stress and age, marital status, work schedules and experience. However, we found a significant correlation with some scales of occupational stress and sex and education level.

Stress, either in the positive or negative form, is part of the working life of each person. However in some professions such as nursing which deals with the health and life of people, it is more important. During the past three decades, many studies have been done on factors affecting stress in nurses. However some stressors in nursing are inevitable such as dealing with ill and dying patients and working night shifts. However, many of these factors are management and organizational factors and they can be reduced with appropriate planning.<sup>2</sup>

Many studies have shown that occupational factors affect job stress more than demographic factors.<sup>2</sup> We found that psychiatric nurses experience less job stress than nurses in surgical and internal medicine wards in most scales. Demand scale scores (including issues such as workload and characteristics of work environment), authorities support (support a person receives from management and self-service agency), colleagues support (the amount of support that an individual receives from his colleagues), and changes (changes

in organization and work environment) in this group were significantly lower. Only the relationship scale score (including issues such as the tension in the workplace, exposure to insults of others) was significantly higher in psychiatric nurses compared with nurses in surgical and internal medicine wards.

Health related professionals experience more emotional stressors than people in other jobs. Most of these problems stem from the nature of this job because they have to spend more time with problematic patients. Especially, behaviors related to suicide and violent behavior are the most stressful behavior nurses confront.<sup>14</sup>

On the other hand, psychiatric patients have a better general condition so they require less clinical care than patients in surgical and internal wards. It seems that the level of demand and workload of nurses in psychiatry is lower and job stress in this area is relatively low.

In surgical and internal wards, scores of scales such as demand, roles, relationships, change, protection and authorities support were very close to each other. There was no significant difference between nurses in medical and surgical wards in any of these areas. But nurses in these wards had higher scores compared with those working in psychiatric wards in most scales.

As mentioned high demands and workload, followed by lack of time to support colleagues, have significantly increased the stress in nurses in surgical and internal wards. These findings are consistent with the results of many studies. Other researchers showed that high workload is the most common stressor among the five countries studied.<sup>15</sup>

In a study conducted in the Australian nursing workplace, work-related violence was the main stressor.<sup>16</sup> This finding is consistent with the results obtained in the present study. But it is not clear in which ward occupational stress is more common; in fact, studies have shown mixed results. McCarthy and his colleagues found that there were different levels of stress in a hospital because of differences in the level of demand and support of nurses in different wards.<sup>17</sup> This finding is consistent with our results.

In a study conducted by Sahraian and colleagues in 2006, it was found that burnout is different in different parts of a hospital and its rate in psychiatric ward is more than in surgical, burns, and internal wards.<sup>18</sup> But in our study occupational stress was lower in most scales in psychiatric wards.

We found no difference in any measures of stress and age. Several studies have examined the relationship between age and job stress and did not show any relationship between age and job stress<sup>19-21</sup> which is consistent with the findings of our study. However, Courtney and colleagues found that younger nurses have higher levels of stress<sup>22</sup> probably because of their lack of adequate experience in dealing with the stress of work.

We also found no significant difference in nurses of different wards and their marital status. Some researchers have found a significant relationship between job stress and marital status. Courtney and colleagues showed that divorced and widowed nurses have higher rates of stress.<sup>22</sup> An environment with no support increases job stress; married nurses and maybe single nurses are more likely to have family support than divorced and widowed nurses.<sup>23</sup>

In the present study, because of the low number of divorcees and widowed nurses (n=2), this group was removed. It seems that most single people have less job pressure than married people and have higher levels of job satisfaction. Married people's responsibilities and worries with parenting, financial issues and other problems can increase their

occupational stress. On the other hand, marriage is considered as a protective factor against job stress and it seems that single women are more likely to have depression than married employed women.<sup>17</sup>

In this study, there was no relationship between nurses' work per week and nurses' work experience and occupational stress. Some studies have found a significant relationship between work experience and occupational stress.<sup>17,24</sup> It seems that more experienced nurses had better adaptation with the adversity of working environments and have a greater ability to deal with stress and tension in their profession, so they had less occupational stress. However, in our study no significant relationship was found. Since 80% of the participants in this study had less than 15 years of work experience, this might have attributed to the insignificant difference we found between groups in this regard.

The results of this study showed that sex was related to occupational stress. Female nurses had higher scores in the scale of demand while male nurses had higher scores on scales of relationship.

The relationship between sex and occupational stress among nurses is controversial in different studies.<sup>10,25,26</sup> Another study showed that male nurses had better support from supervisors and colleagues than female nurses, so the positive effects of co-worker support reduced stress in their workplace.<sup>27</sup>

The gender effects the association between the level of social support and personal strain so that female react more positive than male to social support.<sup>28</sup>

In other studies, there was no significant relationship between sex and job stress.<sup>29</sup> In this study, female nurses showed high scores of demand. This might be related to restricted physical ability in women. So with increasing workload and demand, they experience more stress. Male nurses also showed higher stress in relationship scales. Since most of the men participating in this study were employed in psychiatric hospitals, due to excessive violence and tension in this section, male nurses had

higher stress in this area than female ones.

We found differences in scales of demand, colleague support, and communication with respect to different educational levels. Nurses who had colleagues with bachelors and higher degrees had higher scores in the colleagues support and demand scales.

Due to increased responsibilities and workload, nurses with bachelor's degree experience more stress in these areas. Having a college degree and clinical data increases the theoretical and practical skills of nurses in dealing with stress and tension. Lee et al found that nurses with higher level of education, and less pre-job or on-job continuous education perceived more occupational stress.<sup>30</sup> We found no significant relationship between occupational stress and different work shifts.

Since our study was done in only one city it is suggested that this phenomenon be investigated in a wider range of geographic area, in other cities and countries and in nurses in semipublic and private hospitals and with more participants. We also compared only three types of wards.

## CONCLUSION

Nurses are closely connected with other people and responsibility of human life and dealing with the patients and incurable diseases make nursing a stressful job. Job stress is undoubtedly a common phenomenon among nurses and it is influenced several factors. Identification of the factors involved in stress and its control can reduce this effect. Therefore, supportive and effective interventions must be done to reduce job stress. Because of high levels of job stress in demand scale and workload in surgical and internal wards, activities must be performed in order to increase the number of nurses and reduce their shifts.

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