

*Original Article***Relationship between nurse's stress and environmental - occupational factors**

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**Abstract**

**Background:** Stress is one of the most common psychological issues for nurses. Its management and adaptation with it is vital and important. The National Association of Safety Professionals introduces nursing as a first stressful job among 40 stressful professions. If stress is successive, long, severe, and attempt to cope with it is unsuccessful, it will have a promotional role for diseases and can result in physical and psychological disorders. The aim of this study was to assess relationship between nurse's stress and environmental and occupational factors in Al-Zahra educational-health care center.

**Methods:** This was a cross-sectional study on 216 nurses. Subjects were selected with random convenience sampling method among nurses working in different wards of Al-Zahra hospital. Data gathering was done with questionnaire contained demographic information and identifying stress level. Data analysis was done in SPSS software using Kruskal-Wallis and Mann-Whiney U tests.

**Results:** Findings showed that 44.4% (93 subjects) had low stress level, 55.1% (118 subjects) had moderate stress level, and 0.5% (5 nurses) had severe stress level. There was no significant correlation with stress level and some demographic information such as age, gender, marriage status, shift wok, overcome work and number of children, but there was significant correlation with stress level and job satisfaction and leisure.

**Discussion:** Study results showed that stress level of nurses working in Al-Zahra hospital was moderate. Responses to this stress can affect nurse-patient relationship in workplace, among this, with appropriate and low-expenses methods can cope with stress and decrease its level. It is recommend that heath care services invest more on exercise and recreational fields.

**Key words:** Stress level, nursing, occupational, environmental factors

*IJNMR 2008; 13(1): 1-5*

Hospitals and other health care centers aimed to produce a product named "human health" and one of the noticeable staff in these centers are nurses.<sup>1</sup> 80 percent of staffs in health care system are nurses, who are in the first line for delivering health care services. They have a central role in this system. Because of staff shortage in hospitals they have most workload which results in early occupational, psychological and physical depreciation.<sup>2</sup> Stress is one of the most common psychological issues for nurses, and its management always is

an important concern for them.<sup>3</sup> Occupational stress is considered as the most important occupational hazard in modern era. Every year health care system charged 200 billions dollars on it. It results in decreasing productivity, absence of work, staff rotation in wards and a high expense of health care staffs. The National Association of Safety Professionals introduced nursing as a first stressful job among 40 stressful professions. Many stressful factors were identified in this profession.<sup>1</sup> Although Stress has relationship with the most factors leading

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death such as heart disease, cancer, immune syndrome and etc. but some times stress is considered as a normal reaction to some events such as death of lovely person, and in this circumstance it isn't known as a psychological disorder.<sup>4</sup> Humans are trying to adapt with stress, but if stress is successive, long, severe and attempt to cope with it is unsuccessful, it will result in abnormal adaptation. This abnormal adaptation can have a promotional role for many diseases.<sup>3</sup> Therefore chronic stress can cause physical and psychological disorders. Some of the most important stress-induced disorders are physical disorders (weight loss, sexual dysfunction, amenorrhea, and immune system suppression) and psychological disorders (depression, nervous anorexia).<sup>5</sup> Studies showed that both of environmental and family-related factors such as overcome work, break out with patient and their family, family and occupational problems, support of organization, nurse's ability and confidence have role in nurse's stress.<sup>6</sup> Also results indicated that 21/67 % of nurses showed psychological symptoms.<sup>7</sup> if stressful jobs is graded between 1 to 10, in Iran nursing get a grade about 5.6. This confirms the necessity of selection of this topic.<sup>8</sup> Al-Zahra hospital is the 4<sup>th</sup> grade hospitals with 750 active beds, that only mean of admission in its emergency ward and operating room is 120 and 70 patients daily. Considering this fact that professions such as nursing have high psychological demanding but limited decision-making authority, this article aimed to assess the relationship between nurse's stress and environmental and occupational factors in Al-Zahra educational-health care center.

## Methods

This was a cross-sectional study performed in 2006. Sample size was estimated to be 216 nurses selected with random convenience sampling method. Inclusion criteria were as following: working in different wards of Al-Zahra hospital, with associated, bachelors and master degree, no incurable disease, no experience of a

close-relative death in last 6 months. Data gathering was done with a questionnaire including 2 parts; part one including individual and social information (such as age, sex, marriage status, number of children) and occupational factors (such as shift work, overcome work, record of service, type of wards, job satisfaction) and environmental factors (such as family support, leisure, part two contained 20 questions for identifying stress level using Break Well questionnaire,<sup>9</sup> it contains 20 four option questions. Each questionnaire could gain score 20 to 80. Content validity index with 0.81 coefficient was considered for instrument validity; Questionnaire was given to nurses with describing the aim of study and gathered in the same day. Data analysis was done in SPSS software version 11 using Kruskal-Wallis and Mann-Whiney U tests. P-value under 0.05 was considered as significant.

## Results

The sample had a mean age of 31 years (SD = 6.1), with 53.4% of nurses aged 26-35 years. One hundred eighty two nurses (87.1%) were female and the rest were male. The sample had a mean record of service of 7.5 years (SD = 6.5). Record of service of 49.1% nurses was 0-5 years. 98.6% nurses had bachelor's science degree, 0.6% had master and 0.5% had associated degree. The majority was married (60.4%) and the rest were single (39.3%).

Findings showed that 44.4% (93 nurses) had low stress level, 55.1% (118 nurses) had moderate stress level and 0.5% (5 nurses) had severe stress level. The sample had a mean stress level of 42 (SD = 6).

Data analysis demonstrated that there is no significant correlation between stress level and some variables including age, gender, marriage status, number of children ( $p > 0.05$ ) (table 1). And also analysis showed that occupational factors (job satisfaction and having leisure) have a significant correlation with stress level ( $p < 0.05$ ), but there is no significant correlation between stress level and shift work, overcome work, record of service and type of ward ( $p = 0.034$ ) (tables 2 and 3).

**Table 1:** The relation between stress level and demographic factors in nurses working in Al-Zahra hospital

Stress level		mild N (%)	moderate N (%)	severe N (%)
	Variable			
Sex	male	81(44.5)	100(54.9)	1(0.6)
	female	13(48.1)	14(51.9)	0(0)
age	20-25	20(9.9)	28(13.9)	0(0)
	26-30	26(12.9)	28(13.9)	0(0)
	31-35	18(8.9)	35(17.3)	1(0.5)
	36>	26(12.9)	20(9.9)	0(0)
Marriage status	single	40(47.1)	44(51.8)	1(1.2)
	married	56(42.7)	75(57.3)	0(0)
Number of children	0	55(25.9)	68(32)	1(0.5)
	1	12(5.2)	21(9.9)	0(0)
	2	21(9.9)	18(8.5)	0(0)
	3	5(2.4)	9(4.2)	0(0)
	4	2(0.9)	0(0)	0(0)

**Table 2:** The relation between stress level and occupational factors in nurses who working in Al-Zahra hospital

Stress level		mild N (%)	moderate N (%)	severe N (%)
	Variable			
Shift work	morning	68(42)	93(57.4)	1(0.6)
	evening	18(51.4)	17(48.6)	0(0)
	night	7(50)	7(50)	0(0)
Overcome work	0-5	72(46.4)	82(52.9)	1(0.6)
	6-10	15(53.6)	13(46.4)	0(0)
	11-15	2(25)	6(75)	0(0)
	> 16	7(28)	18(75)	0(0)
ward	CCU-ICU	21(40)	31(60)	0(0)
	Operating room and emergency ward	9(40.9)	13(59.1)	0(0)
	Other wards	61(46.2)	70(53)	1(0.8)
Record of service	0-5	34(21.1)	45(28)	1(0.6)
	6-10	20(12.4)	23(14.3)	0(0)
	11-15	6(3.7)	8(5)	0(0)
	>16	12(7.5)	12(7.5)	0(0)

**Table 3:** The relation between stress level and environmental factors in nurses working in Al-Zahra hospital

Stress level		mild N (%)	moderate N (%)	severe N (%)
leisure	Variable			
	Yes (165)	79(47.9)	85(51.5)	1(0.6)
Job satisfaction	No (51)	17(33.3)	34(66.7)	0(0)
	satisfied	27(62.8)	16(37.2)	0(0)
	unsatisfied	12(31.6)	25(65.8)	1(2.6)
	Fairly satisfied	55(42.3)	75(57.7)	0(0)

## Discussion

Study results showed that stress level of nurses working in Al-Zahra hospital was moderate. Responses to this stress can affect nurse-patient relationship in workplace. In other hand reflection of this stress can manifest at home in family relationship, and finally it will have effect on personal communication with society. Break well believed that although physical and psychological effect of stress can be subtle but at the same time it can be destructive.<sup>9</sup> Ineffective coping with stress can be replaced with incorrect coping reaction and this incorrect reaction can have a promotional role for many physical and psychological diseases. Weinberg showed that 52.3% nurses and physicians have anxiety and depression disorders.<sup>10</sup> Wiener believes that chronic stress results in physical and psychological disorders such as weight loss, sexual dysfunction, amenorrhea, depression, immune system suppression and, nervous anorexia.<sup>5,11</sup> Psychological reactions to stress are deterioration of mental and physical health.<sup>12</sup> 20 percent of employees have moderate and severe stress.<sup>9</sup> Findings of current study indicated that stress level has no significant correlation with record of service, while Hinds showed that they have correlation with each other. Nurses who their record of service is 12 months have better reaction than persons who their record of service is 18 months or less than 3-6 months.<sup>12</sup> Vans and Kelly in a study on stress and extent of adaptation in nursing students showed that take an exam, extra homework and presence of gap be-

tween education and clinical setting caused stress.<sup>13</sup> In our study there was direct correlation between job satisfaction and stress level ( $P < 0.05$ ). Studies indicated that prevention of stress which is related to low job satisfaction is related to the strategy which is used for coping with this type of stress.<sup>9</sup> In current study there was no significant correlation between factors such as shift work, overcome work, record of service and stress level. Lee and Wang also stated that the major sources of occupational stress are workload and responsibility.<sup>14</sup>

Considering the importance of nursing profession and its direct effects on patient's health, it seems that it is possible to improve health and treatment status with enhancing job satisfaction and decreasing nurse's stress. Our results showed that stress level in nurses is moderate. Responses to this stress can affect nurse-patient relationship in workplace. On the other hand occupational stress results in increasing job-related accidents late and absence of work, and also decreasing productivity and responsibility and all of these will result in decreasing quality of care which is presented to the patients.<sup>14</sup> Among this circumstance with appropriate and low-expenses methods can cope with stress and decrease its level. It is recommend that health care services invest more on exercise and recreational fields. Many studies introduced new learning skills and activities especially communication skills as one of the best coping strategies with occupational stress.

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