Frequency of depression, anxiety and stress in military Nurses

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Abstract
Aims: Nurses are among professional groups that are affected by psychological factors and stress and anxiety and stress are their common problems. The objective of this study was to examine the abundance of depression, anxiety and stress among a group of military nurses.

Methods: This descriptive cross-sectional study was performed from February 2008 until April 2009 on 272 nurses working in a selected military hospital who were selected by probable multi stage sampling method. Data was collected by a two-part questionnaire containing individual data and DASS-21 Standardized Questionnaire. The test consists of 21 items including three 7-question subscales of depression, anxiety and stress. Analysis was done by SPSS 15 software.

Results: Results showed 24.9% rate of depression, 27.9% anxiety and 23.8% stress among military nurses. Depression scores were higher among female nurses. There was co-relation between prevalence of stress and anxiety with level of education and ward.

Conclusion: The high prevalence of depression, anxiety and stress symptoms among military nurses is alarming. The development of adequate and appropriate support services for this group leads to healthy nurses and therefore health promotion.

Keywords: Depression, Anxiety, Stress, Military Nurses, DASS-21 Standardized Questionnaire

Introduction
We live in the era that despite technological improvements, disorders such as depression, anxiety and stress are common diseases of the century [1]. Gaining comfort and confidence and avoiding from depression are the most innate human needs and have always been among the fundamental human issues [2]. Emotional state is one of the issues that in spite of the progress of science and technology, has always been associated with human and no man has ever been able to completely avoid it [3]. On the other hand, mental health is one of the social needs since the desired performance of the society requires people to be in a favorable condition in terms of mental health. Accordingly, one of the objectives and plans of social systems is trying to increase welfare of the society [2]. For providing preventive planning and promoting community health, first off, picture of the health research community needs to be presented [4]. Clearly, any attempt on the access to health and mental relaxation which is both personal need and a social necessity requires accurate knowledge of the meaning of health and how to measure it. Among physical and mental illness, depression is the number one of the world [5]. Depression and anxiety with the prevalence rate of 10-20% in the year in the general population, is among the most common psychological disorders [6]. Depression is one of the major medical and social issues of the day and if continues will erode labor forces and capabilities of the individual and his social and economic situation. The estimated cost of depression in the United States is calculated more than 80 billion dollars a year [7]. Depression costs about 12 billion dollars annually in medical care and 44 billion dollars by loss of productivity [8]. Approximately 15% of the total population may experience a period of major depression in a period of their lives [9]. Stress has been described as “erosion of the body” from medical perspective. Actually stress is an essential integrate of the human life [10] and perhaps is the most general problem of today human life [11]. Occupational environment always influence individuals. In other words, job characteristics and mental properties have constant and dynamic interaction [12]. Angermeyer et al. found in a study that nurses are among those occupational categories that are exposed to stress and psychological problems and depression, anxiety and fatigue are their common problems [13]. Smith believes that nurses experience high amounts of stress in their job environment that can influence their mood and make them depressed [14]. Malekoti et al. revealed during a study that stress has a positive correlation with depression and anxiety.

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among hospital staff and treatment and administrative groups and its relation with depression and anxiety is significant [15]. Khajenasiri in a study conducted on nurses of Imam Khomeini hospital arrived to this conclusion that depression is minor in 73.1%, moderate in 21.5% and severe in 5.4% of people [16]. Institute of Occupational Health and Safety which has investigated the relationship between the occurrence of mental illness and job stress, reported that among 130 studied occupations, nurses allocated the rank of 27 in the acceptance of occupational psychological problems. The U.S. National Association of occupational Safety has introduced nursing at the top of 40 highly stressful occupations [17]. The concept of occupational stress and high occupational pressure is not as apparent in any profession as military units [18]. Given that, nurses who work in military environments are responsible for supporting military duties in addition to occupational pressures and heavy responsibilities of intense job of nursing. Because military hospitals must be always be ready to serve people in case of critical problems and disasters. On the other hand, nurses working in military hospitals are exposed to the unique stresses that are related to military environments such as restriction of personal freedom, being obliged to response for the performed behaviors, expecting and having concern for the moment of incident and confrontation and crisis intervention [19]. It is essential for organizations to apply specific programs in providing mental health to deal with mental and social illnesses of their employees which it is more important in military organizations. The nature of these organizations emphasizes the maintenance of dynamism and making constant changes in order to keep good performance and this will consequently cause incompatibility and various stresses. As the physical and mental health of nurses is directly associated with the quality of their performance in caring patients, having healthy work environment and mental health lead to the prevention of depression, anxiety and stress in nurses and ultimately increase of their satisfaction, their interest toward the job and efficiency.

Present study was conducted to evaluate depression, anxiety and stress in the nurses of military hospitals.

Methods

This is a descriptive, cross-sectional study. The study population was the nurses working in a military hospital in the winter of 2009. The inclusion criteria were the staff’s willingness to cooperate in research, having associate degree or higher in nursing, employment in the selected military hospitals and not accompanying a similar research simultaneously. The exclusion criteria of the study were not being critical conditions (such as death of a beloved person, fire, accident or migration). Required coordination was done by referring to the nursing office and presenting letters of introduction. By applying probable multistage sampling and calculating the percentage of depression, anxiety and stress and calculation of the sample size according to \( \alpha=0.05 \) prevalence in similar studies \( p=0.28 \), totally 310 questionnaires were distributed to the presences.

Given the reluctance of some subjects to participate in the study and being altered of some of the questionnaires, ultimately 272 acceptable questionnaires were obtained. The studied wards were 29 clinical wards of a hospital affiliated to the armed forces. Sufficient number of samples was randomly selected from each ward according to the number of nurses. The aim of the research was explained to the subjects by face to face method and after gaining their consent for participation, the written consent was obtained. Then the contents of the questionnaire and they method of its completion were described. By coding the method of questionnaires, certain confidence was given to subjects regarding the confidentiality of the information and this was mentioned on top of each questionnaire. Given that the clinical situation was not suitable at the department for completing the questionnaire, enough time was considered for completing the questionnaire.

The data collection was a two-part questionnaire. The first section was the personal information questionnaire, including the age, gender, marriage status, number of the children, education level, work experience, hours worked per week, the work place (ward), the work shift, the average monthly income, the type of residential place, the car type and the employment status of the spouse and the second part was DASS-21 standardized questionnaire which investigated depression, anxiety, stress (emotional reactions) of the nurses. This questionnaire which was developed for the first time by Lovibond & Lovibond in 1995 has the options of low, medium and high. The lowest score of each question was 0 and the highest was 3. According to a study, there is high correlation between Beck’s depression and anxiety questionnaire and DASS-21 scale of depression, anxiety and stress [20]. Crawford and Henry compared DASS-21 and two other tools related to depression and anxiety and a tool related to negative and positive affect and concluded that the best state for DASS-21 is obtained.
when all three items were concerned [21]. The reliability of this scale in Iran in a general population sample in Mashhad (n=400) is reported 0.7 for depression, 0.66 for anxiety and 0.76 for stress [22]. Moradipanah has reported the internal consistency of the scale by the Cronbach’s alpha of 0.94 for depression, 0.76 for anxiety and 0.89 for stress [23]. After collecting the questionnaires, DASS-21 was used for score calculation of subscales of the questionnaire. Data were analyzed by Kolmogorov-Smirnov test which did not show a normal distribution. Data analysis was done by SPSS15 software.

## Results

The average of age of male and female nurses was 38.69±7.8 and 35.53±4.93 respectively. The statistical indicators related to demographic characteristics are given in Table 1. In the study of occupational records from work shift perspective 21.4% of the employees worked at constant morning shifts and 78.6% worked in rotating shifts. The average of working hours per week was 55.27±19.47 hours and the average of work experience was 4.44±2.42 years. 192 people (6.70%) had overtime work and 80 people (4.29%) didn’t have had overtime work.

### Table 1- Relative and absolute frequency of demographic characteristics of nurses

<table>
<thead>
<tr>
<th>Personal characteristics</th>
<th>Variable</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>117</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>155</td>
<td>57</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married</td>
<td>229</td>
<td>84.2</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Widow</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Number of the Children</td>
<td>No children</td>
<td>44</td>
<td>16.2</td>
</tr>
<tr>
<td></td>
<td>One or two</td>
<td>176</td>
<td>64.7</td>
</tr>
<tr>
<td></td>
<td>Three or more</td>
<td>52</td>
<td>19.1</td>
</tr>
<tr>
<td>Education Level</td>
<td>Associate degree</td>
<td>39</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>Bachelor</td>
<td>221</td>
<td>81.3</td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>12</td>
<td>4.4</td>
</tr>
</tbody>
</table>

The frequency of depression, anxiety and stress among the nurses were %24.9, %27.9 and 23.8%, respectively. In depression measurement, 17.5% had mild to moderate and 7.5% had severe depression. In anxiety measurement, 19% had mild to moderate and 8.9% had severe anxiety. 24.8% had some degree of stress. Putting aside mild cases of the DASS scales since being non-pathological, 4.39% of the nurses did not have mental health (Diagram 1).

Scores of depression, anxiety and stress were higher in female nurses than male nurses. Regarding the relation of sub-scales of DASS-21 with demographic characteristics, there is significant relation between the age and depression and anxiety but there was no correlation between the age and depression. There was a significant relation between DASS-21 scale and the number of the children but the correlation between these two cases was weak. There was a significant association between the prevalence of depression and marital status, education level and hours of overtime per week.

### Diagram 1- Levels of depression, anxiety and stress in nurses

Stress also had relationship with work experience and the number of night shifts but no association was seen between depression and these indices. Also there was a significant correlation between stress and anxiety (r=0.706). There was a significant reverse coloration between anxiety and educational level and anxiety decreased with increase of educational level but in all three educational levels of associate, bachelor and master the stress was almost at the same level. Significant relation had been seen between the severity of depression and two educational levels of associate and bachelor’s degree. Among the investigated wards, stress and anxiety of nurses was severe and very severe at Intensive Care Unit, kidney transplant unit and emergency ward.

## Discussion

According to the World Health Organization’s statistics, the frequency of depression is 20-15% in the society. This amount is estimated 15 to 30% among the nurses.
Therefore the results of this study (24.9%) are completely consistent with these statistics. The prevalence of anxiety in researches on nurses has been estimated 25% [24] which in current study 27.9% of the nurses suffered some degrees of anxiety. Results showed that scores on depression, anxiety and stress in female nurses is higher than males. Based on studies in Europe and the United States, it is estimated that between 9 to 16% of men and 5 to 12% of women experienced a kind of major depressive disorder. Also it is estimated that between 4.5 to 9.3% of men and 2.3 to 3.2% of women suffer from this disorder in a period of time [25]. Women are twice more prone to depression and this ratio has also been reported in clinical populations [26]. In this study, there was a significant correlation between the prevalence of depression and marital status which is consistent with the results of Smith’s study. It revealed that single employed women are more likely to develop depression than married employed women [27]. It can be said in this regard that social supports, including family relations, diversely affect the stress rate and married nurses experience depression considerably lower as they receive higher support from their family [28].

In the present study, there was a relationship between job experience and stress and anxiety that this finding is consistent with previous studies [29]. The results of the study are consistent with Richy’s study that the nurses are those who experience high levels of stress in their daily life [30]. In a study by Smith about stress among nurses who face patients’ death, deal with colleagues, lack of preparedness for dealing with emotional issues of patients, lack of support by the organization that has selected them, high workload and uncertainty about instructions have been introduced as stressful factors related to nursing [27]. Due to the placement of those with masters’ degree in managerial posts, their stress is at higher level. According to the investigations in U.K, senior physicians and managers have high scores and beyond expectation in stress, anxiety and depression [31]. In the current study there was also a significant correlation between depression and anxiety severity and educational level. When the clinical information of the nurses is lower, a false sense of incompetency is developed within them. On the other hand, higher education brings financial welfare and thus leads to decrease in stress level [28].

According to the research conducted on the nurses of Intensive Care Units in 1991, physical environment was reported as the most important source of stress (81.3%) [32]. Nurses who work in Intensive Care Units are prone to higher levels of stress compared to those who work in general wards.

Awareness of the symptoms will lead to future interventions and increased mental health and occupational satisfaction in this group [33]. The results of current study are consistent with previous ones considering high degrees of stress, anxiety and depression in intensive care units. In this study, stress was associated with working hours and night work. Regarding the working hours, consistent with the results if this study Crawford expressed that increased working hours would increase conflicts between the familial and occupational tasks that can lead to occupational stress [34]. The average of occupational stress in work load dimension was higher in all people. Lee and Wang in the study of occupational stress of the nurses and its related factors have mentioned the working load and high responsibility as the major sources of stress [29]. Given that care and health sector is one of the most important areas of sustainable development of the health in human societies, therefore enhancement in service rendering and sufficient support will lead to healthy nurses and thereby society health promotion. Periodical study regarding levels of anxiety, depression and stress among nurses spatially nurses working at military hospitals is an essential work and is in line with prohibitive efforts of health system. Conducting comparative studies of these indicators among nurses of different countries will determine the difference of welfare and occupational level of this group and provide occupational welfare and mental safety of this patient and laborious class of the society.

It is worth to mention that lack of similar studies inside and outside the country and the confidentiality of the statistical data of military individuals are regarded as the limitations of this study and because of mentioned issues, comparison between similar individuals was not possible.

Conclusion

High degrees of depression, anxiety and stress are threatening among military nurses. The frequencies of depression, anxiety and stress are respectively 24.9%, 27.9% and 23.8% in nurses of military hospitals.

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