



General Health Status and Its Related Factors in the Nurses Working in the Educational Hospitals of Shiraz University of Medical Sciences, Shiraz, Iran, 2011

Najmeh Haseli¹, Leila Ghahramani^{2,*}, Mahin Nazari²

¹ Department of Epidemiology, School of Health and Nutrition, Shiraz University of Medical Sciences, Shiraz, IR Iran

² Department of Health Education and Promotion, School of Health and Nutrition, Shiraz University of Medical Sciences, Shiraz, IR Iran

* Corresponding author: Leila Ghahramani, Department of Health Education and Promotion, School of Health and Nutrition, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel: +98-9177923542, Fax: +98-7117260225, E-mail: ghahramanl@sums.ac.ir.

ABSTRACT

Background: Nursing is an extremely stressful profession. Nurses are confronted with a variety of personal, communicational and organizational stresses, which affect their health.

Objectives: The current study aimed to assess general health level and its related factors in employed nurses in educational hospitals affiliated to Shiraz University of medical sciences.

Materials and Methods: This cross-sectional study was performed on 126 nurses and practical nurses who work in educational hospitals affiliated to Shiraz University of medical sciences selected by multi stage sampling method. Data collecting tools included demographic characteristics and General Health Questionnaire-28 (GHQ-28). Descriptive statistics are presented and Chi-square test, t-test, and analysis of variance were used to analyze the data.

Results: Of 126 subjects 75 (59.5%) cases were suspects of mental disorders. Also 12.7% had physical disorders, 15.9% had anxiety and sleep disorders, 8.7% had social dysfunction and 6.3% had depression. Average score of mental health was 28.4. In this study mental health was significantly associated with job satisfaction and economic satisfaction ($P < 0.05$).

Conclusions: With regard to significant relation between mental health, job satisfaction, and economic satisfaction, a system for educating and stress reduction counseling should be established to help nurses effectively coping with stress. Also, improving the work environment, increasing staff, increasing salary, and decreasing working hours may reduce the nurses' exposure to stressful risk factors.

Keywords: Nursing Staff; Health; Mental Disorders; Iran

Copyright © 2013, Kashan University of Medical sciences.

▶ Article type: Research Article; Received: 20 Nov 2012, Revised: 06 Jan 2013, Accepted: 13 Jan 2013; DOI: 10.5812/nms.9132

▶ Implication for health policy/practice/research/medical education:

The findings this study can be used for planning by the authorities of mental health programs to educate nurses about stress reduction and encouraging them to have a more joyful lifestyle.

▶ Please cite this paper as:

Haseli N, Ghahramani L, Nazari M. General Health Status and Its Related Factors in the Nurses Working in the Educational Hospitals of Shiraz University of Medical Sciences, Shiraz, Iran, 2011. *Nurs Midwifery Stud.* 2013;2(1):146-51. DOI: 10.5812/nms.9132

▶ Copyright © 2013, Kashan University of Medical sciences.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Background

World Health Organization (W.H.O.) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, and emphasizes that none of these dimensions has priority over the other. Mental health is one dimension of the overall concept of health and refers to all of the methods and measures used for prevention, treatment, and rehabilitation of psychological disorders. The statistics reported regarding the prevalence of psychological disorders in Iran and other countries around the world show the necessity to pay more attention to mental health. According to W.H.O., almost 450 million individuals suffer from one type of psychological disorders, half of whom suffer from depression and anxiety (1). Furthermore, the studies conducted on the mental health status of the individuals of 15 years old and above in Iran have shown that an average of 21% of the society members have psychological disorders and females are more susceptible to such disorders in comparison to males (2). In general, paying attention to mental health is important in all aspects of life, including individual, social, and occupational life, mental disorders account for nearly 12% of the global burden of disease. By 2020 they will account for nearly 15% of disability-adjusted life-years lost to illness (3). Wilkinson quotes Britain's health education authorities and states that nursing, policing, social working, and teaching is high-tension jobs. In fact, occupational stress affects the individuals' health, reduces the mental health, and increases the probability of damages resulting from working. Moreover, working environments, such as operating rooms, burn units, and psychiatric departments, can highly affect the employees' mental health (4, 5). Nurses are an indispensable component of the work force in the health care system. However, many of them are known to work in a stressful environment which may affect their mental well-being (6). Several studies have shown that, Nursing is a stressful job and nurses are often faced with a variety of stress at work (7-12). In addition, the nurses often have to witness many tragic events of life: disease, trauma or even death which can be physically demanding and psychologically stressful. A growing mass of evidence has pointed out the link between adverse psychosocial factors in the work environment and the psychological and physical health in nurses of other countries (13-19). Considering the fact that nurses, as the main members of the health and treatment team, play a critical role in improving the society's health, lack of attention to their mental health can lead to reduction of efficiency, loss of workforce, and creation of physical as well as mental complications for both the nurse and patients (20, 21). Up to now, several studies have investigated the mental health status in various situations and the findings have confirmed that assessment of the individuals' mental health status can provide the managers, authorities, and planners of service providing centers

with valuable information about educational planning and prevention as well as treatment of psychological disorders (22, 23). According to the studies conducted on the issue in other countries, the prevalence of mental health disorders among nurses is higher compared to other social groups. For instance, various studies have reported the prevalence of mental health disorders among nurses as 41%, 34%, and 21% (24-26). Results of these studies indicated that hospital nursing is a profession that predisposes the workers to mental impairments such as anxiety and depression. Several Studies have shown that, in general, the prevalence of anxiety in nurses is higher than that of the whole population, although it may vary greatly from country to country or between different nursing specialties. The lowest reported prevalence (7%) was seen in Japanese nurses (27). The highest reported prevalence of anxiety (43.2%) was found in Iranian hospital nurses who had to work shifts (28). The prevalence of depressive symptoms among the nurses in Chinese was 61%, of whom 74% had mild depressive symptoms. As depressive symptoms may adversely affect quality of life and quality of care, consultation for the nurses with healthy life styles, work stress coping techniques and advice to administrator to improve social aspects of the work environment might be helpful to reduce the depressive symptoms in nurses (29).

2. Objectives

The current study aimed to determine the general health and investigate its relationship with individual factors among the nurses and practical nurses working in the educational hospitals affiliated to Shiraz University of Medical Sciences, Shiraz, Iran.

3. Materials and Methods

The population of this cross-sectional study consisted the nurses and practical nurses working in the educational hospitals affiliated to Shiraz University of Medical Sciences. According to the previous studies (28) conducted on the issue and the sample size formula (with $P = 28\%$, $\alpha = 0.05$ and $d = 0.3p$), and to compensate the probability attrition, sample size was increased 20%. A 126-subject sample size was determined for the current study. Sampling was carried out in multiple stages. First, 5 hospitals were randomly selected from 15 hospitals affiliated to Shiraz University of Medical Sciences. Then, in each selected hospital, stratified random sampling was performed; in such a way that each stratum represented one of the hospital wards and the subjects in each stratum were selected through convenience sampling. The study data were gathered using a questionnaire which included two sections. The first part included the participants' demographic information, including age, sex, marital status, level of education, working experience, working hours in a week, number of children, job satisfaction, and satisfaction with the economic status. In the second part, General Health Questionnaire-28 (GHQ-28) was used. This self-

administered questionnaire is designed to evaluate the status of mental health and psychological disorders in the society. Of course, this test is not a diagnostic one and can only be used in order to screen the psychological disorders among the society members (30). GHQ-28 was first developed by Goldberg in 1972 and included 60 items. However, the shortened versions of the questionnaire including 30, 28, and 12 items have also been utilized in various studies. The conducted studies on the epidemiology of psychological disorders in Iran which used GHQ-28 have reported the reliability and validity of the questionnaire to vary from 0.84 to 0.94 with the cut-off point of 6 and from 0.68 to 0.94 with the cut-off point of 23 (20). The 28-item version of the questionnaire utilized in the current study consists of 4 subscales: 1- Somatic symptoms in which the general health status and the physical symptoms the individual has experienced during the last month are investigated, 2- Anxiety in which clinical signs and symptoms of severe anxiety, insomnia, being under pressure, anger, and worry are assessed, 3- Social function which investigates the individuals' ability to perform daily activities, their satisfaction with doing their duties, feeling of being beneficent, ability to learn, and enjoying the daily activities, and 4- Depression symptoms which

investigate the specific signs of depression, such as the feeling of worthlessness, disappointment, feeling that life is worthless, suicide thoughts, wish for death, and inability to do tasks (20, 21, 31). In the current study, the questionnaire was scored according to the Likert scale (0, 1, 2, and 3) and the cut-off point of 23 was used in data analysis; in a way that the subjects with <22.9 scores were considered healthy, while those with > 23 scores were considered suffering from disorders.

3.1. Data Analysis

Descriptive results are presented through tables. Chi-square, t-test, and analysis of variance (ANOVA) were used in order to determine the relationship between the variables and mean differences. $P < 0.05$ was considered as statistically significant.

3.2. Ethical Considerations

At this study, the tests and their designers were kept anonymous and participants signed informed consents form and were assured about confidentiality of their personal information. Also the research ethics committee in the Shiraz University of Medical Sciences approved the study.

Table 1. The Relationship between the Mental Health Mean Scores and Demographic Characteristics of the Nurses Working in the Educational Hospitals of Shiraz University of Medical Sciences, Shiraz, Iran

Variable	Frequency, No. (%)	Mental Health, Mean \pm SD	P value
Age, y			0.1
20-30	71 (61.7)	28 \pm 14	
30-40	31 (27)	28.8 \pm 13.7	
40-50	10 (8.7)	30.7 \pm 13.5	
> 50	3 (2.6)	22.8 \pm 4.5	
Sex			0.2
female	95 (75.4)	29.2 \pm 13.2	
male	31 (24.6)	25.9 \pm 14.9	
Marital status			0.2
single	50 (39.7)	26.7 \pm 13.7	
married	72 (55)	29.6 \pm 13.6	
Level Educational			0.8
Diploma	16 (13.3)	28.3 \pm 15.1	
Under graduated	14 (11.7)	29.5 \pm 15.5	
Bachelor or higher	90 (75)	27.7 \pm 13	
Job satisfaction			0.001
Yes	53 (65.3)	22.6 \pm 12.5	
No	57 (46.7)	35.3 \pm 12.2	
Satisfaction of economic status			0.001
Yes	33 (27.5)	21.8 \pm 14	
No	87 (72.5)	31.4 \pm 12.2	

4. Results

Among the 126 nurses and practical nurses under study, 95 (75.4%) were female and 31 (24.6%) were male. The participants' age ranged from 21 to 58 years old with the mean age of 30.9 ± 7.9 years. In addition, the mean age of male and female subjects was 34.4 ± 9.6 and 29.7 ± 6.8 years; the highest frequency was related to 20-30.9 year age group. The results revealed no statistically significant differences between general health score in different age groups ($P > 0.05$). Among the 126 subjects under study, 50 (39.7%), 72 (55%), and 4 (5.3%) were single, married, and divorced or widowed, respectively. Among the married subjects, 40.3% did not have any children, while 59.7% had 1 to 3 children. The participants' mean working experience, weekly working hours, and overtime work was 8.29 ± 7.3 years, 45.4 ± 17.7 hours a week, and 15 ± 23.1 hours a week, respectively. In addition, 84.4% of the nurses worked in rotational shifts, while 15.6% worked day shifts. The subjects' mean score of general health was 28.4 ± 13.6 . The relationship between the demographic characteris-

tics and general health mean score is presented in *Table 1*. The study results showed no significant relationship between the nurses' mean general health and age, number of children, working experience, working shifts, working hours in a week, and overtime work hours in a week ($P > 0.05$). In this study, 51 subjects (40.5%) were healthy and 75 were (59.5%) suspected to have psychological disorders. Moreover, the prevalence of psychological disorders was 63.2%, 48.4%, 52%, and 64.5% among female, male, single, and married participants, respectively. Furthermore, the nurses' mean scores of somatic symptoms, anxiety and insomnia, social dysfunction, depression and tendency to suicide, and mental health were 7.6 ± 4.4 , 8.4 ± 4.7 , 7.9 ± 3.5 , 4.3 ± 4.4 , and 28.4 ± 13.6 , respectively. After classification of the nurses' scores in each subscale of GHQ-28 questionnaire into three categories of 0-6 (healthy), 7-13 (suspected), and 14-21 (with disorder), 12.7%, 15.9%, 8.7%, and 6.3% of the nurses had physical disorders, anxiety and insomnia disorders, social dysfunction, and depression, respectively (*Table 2*).

Table 2. Status of Mental Health Dimensions among the Nurses Working in the Hospitals Affiliated to Shiraz University of Medical Sciences, Shiraz, Iran

GHQ ^a dimensions	Somatic symptoms, No. (%)	Anxiety, No. (%)	Social dysfunction, No. (%)	Depression, No. (%)
Health	53 (42.1)	39 (31)	52 (41.3)	96 (76.2)
Suspected	57 (45.2)	67 (53.2)	63 (50)	22 (17.5)
With disorder	16 (12.7)	20 (15.9)	11 (8.7)	8 (6.3)

^a GHQ, General health questionnaire

5. Discussion

In the current study, the nurses' general health mean score was 28.4 which is comparable to the studies performed by Sahebi and Khaghanizadeh which reported the nurses' general health score as 23.2 (20, 31). In addition, the prevalence of mental health disorder in the present study was 59.5% which is 13% more than Sahebi's study. According to the studies conducted on the issue in other countries, the prevalence of mental health disorders among nurses is higher compared to other social groups. For instance, various studies have reported the prevalence of mental health disorders among nurses as 41%, 34%, and 21% (24-26). In the current study also, a considerable increase can be observed in all dimensions of mental health in comparison to other studies. In Sahebi's study, for example, 10.6% of the nurses suffered from anxiety and insomnia, while this measure has been reported as 15.9%. Several Studies have shown that, in general, the prevalence of anxiety in nurses is higher than that of the whole population, although it may vary greatly from country to country or among different nursing specialties. The lowest reported prevalence (7%) was seen in Japa-

nese nurses who were working in the acute care hospitals (including departments of internal medicine, surgery, intensive care, operating room and outpatient clinic) (27). The highest reported prevalence of anxiety (43.2%) was found in Iranian hospital nurses who had to work shifts (28). In Singapore, 21% of nurses in a general hospital were found to be suffering from anxiety disorders, but, interestingly, only a very small proportion actually sought help for their emotional problems (< 4%) (32). In the U.S., about 20% of ICU and general care nurses from different hospitals had symptoms consistent with possible anxiety (33). Results of these studies indicated that hospital nursing is a profession that predisposes the workers to mental impairments such as anxiety and depression. In the present study, overall, rotational shift working is a part of nursing occupation and night working can justify the increase in sleep disorders and social dysfunctions which deprive this group from normal social interactions. The prevalence of depressive symptoms among the nurses in Chinese was 61%, of whom 74% had mild depressive symptoms while the prevalence of depressive symptoms among the nurses in Iran was 6.3% and 17.5% were

suspected to have depression (29). The results of the present study revealed a significant relationship between mental health and job satisfaction as well as satisfaction with the economic status ($P < 0.05$). Significant relationships were also found between job satisfaction and shift working and satisfaction with economic status ($P < 0.05$). The nurses' satisfaction can be gained by cautiously and voluntarily placing them in departments, environment improvement using modern technologies, presenting mechanized services, increasing the salary, increasing the number of personnel, and reducing the working hours in order to improve the quality as well as efficiency in the working environment. As depressive symptoms may adversely affect quality of life and quality of care, consultation with the nurses with healthy life styles, providing work stress coping techniques and advice to administrator to improve social aspects of the work environment might be helpful to reduce the depressive symptoms in nurses (29). Also, during the last five decades there have been significant changes in the understanding of mental disorders. This is attributable to a combination of scientific advances in treatment and an increasing awareness of the need to protect the human rights of people with mental disorders in institutional care settings and in the community (3). Considering the inevitability of some stressors in the nursing occupation and the necessity to prevent the psychological as well as behavioral effects of stress on the individuals, the managers of health and treatment organizations should take actions in order to improve the working environment conditions and train the nurses regarding the coping methods. Furthermore, the considerable prevalence of mental health disorders requires special attention and specific interventions, including organizational practices such as encouragement of team work, engaging the personnel in making decisions, occupational supports, reducing the personal conflicts and ambiguities, and increasing control over occupational incidents. Psychological interventions are also other strategies to reduce the occupational stress and increase the compatibility in the working environment. A large number of researchers believe that not only these interventions should be conducted in the working environment, but their training should also be incorporated in the educational programs of the health and treatment personnel. Of course, for those with severe mental health disorders, special individual interventions are required, as well. Overall, the findings of the present study can be used for planning by the authorities of mental health programs to educate nurses about stress reduction and encouraging them to have a more joyful lifestyle. Also, educational workshops should be established for nurses to empower them to coping with stress and stressful situations properly. Also with regard to significant relation between mental health, job satisfaction, and economic satisfaction, improving the work environment, increasing staff, increasing salary, and decreasing

working hours may reduce the nurses' exposure to stressful risk factors. This study also had some limitations. Firstly, nurses may not give correct information about themselves in questionnaires, although we have solved this problem through trying to attract their consent and confidence about confidentiality of their information. Secondary, the small sample size of this study may limit the generalization of findings. Then, a large, multi-center study may be suggested.

Acknowledgments

Hereby, the authors would like to thank the authorities and personnel of the educational hospitals affiliated to Shiraz University of Medical Sciences, Shiraz, Iran and all the nurses who participated in the study.

Authors' Contribution

Najmeh Haseli (NH), Leila Ghahramani (LG) and Mahin Nazari (MN) participated in Study concept and design. NH and LG performed the data analysis, interpretation and drafting of the manuscript. NH, LG and MN made critical revision on the manuscript. NH performed data collection.

Financial Disclosure

None declared.

Funding/Support

None declared.

References

1. A public health approach to mental health. Geneva: World Health Organization: WHO; 2001; Available from: http://www.who.int/whr/2001/en/whr01_ch1_en.pdf.
2. Noorbala AA, Mohammad K, Bagheri Yazdi SA, Yasami MT. [Study of mental health status of individuals above 15 years of age in Islamic Republic of Iran in the year 1999]. *Hakim Res J*.2002;5(1):10-1.
3. Mental Health Policy and Service Guidance Package: the mental health context. Geneva: World Health Organization: WHO; 2003; Available from: http://www.who.int/mental_health/resources/en/context.PDF.
4. Kayastha R, Adhikary PR, Krishnamurthy V. Occupational stress among managers: a Nepalese survey. *Acad Res Int*.2012;2(3).
5. Shamloo S. [Mental Health]. Tehran: Roshd pub; 1999.
6. Gao YQ, Pan BC, Sun W, Wu H, Wang JN, Wang L. Anxiety symptoms among Chinese nurses and the associated factors: a cross sectional study. *BMC psychiatry*.2012;12(1):141.
7. Epstein DG. Extinguish workplace stress. *Nurs manag*.2010;41(10):34-37.
8. LeSergent CM, Haney CJ. Rural hospital nurse's stressors and coping strategies: a survey. *Int J Nurs Stud*.2005;42(3):315-24.
9. Letvak S, Buck R. Factors influencing work productivity and intent to stay in nursing. *Nurs Econ*.2008;26(3):159-65.
10. Lu KY, Chang LC, Wu HL. Relationships between professional commitment, job satisfaction, and work stress in public health nurses in Taiwan. *J Prof Nurs*.2007;23(2):110-6.
11. McGrath A, Reid N, Boore J. Occupational stress in nursing. *Int J Nurs Stud*.2003;40(5):555-565.
12. Sveinsdottir H, Biering P, Ramel A. Occupational stress, job satisfaction, and working environment among Icelandic

- dic nurses: a cross-sectional questionnaire survey. *Int J Nurs Stud.*2006;**43**(7):875-89.
13. Bakker AB, Killmer CH, Siegrist J, Schaufeli WB. Effort-reward imbalance and burnout among nurses. *J Adv Nurs.*2008;**31**(4):884-891.
 14. Cheng YL, Zhou JL, Tan SP. Depressive symptom in married women of childbearing age in Huanggang community of Shenzhen. *Chinese Gen Pract.*2007;**10**(21):1800-1802.
 15. Hasselhorn HM, Tackenberg P, Peter R. Effort-reward imbalance among nurses in stable countries and in countries in transition. *Int J Occup Environ Health.*2004;**10**(4):401-8.
 16. Lundstrom T, Pugliese G, Bartley J, Cox J, Guither C. Organizational and environmental factors that affect worker health and safety and patient outcomes. *Am J Infect Control.*2002;**30**(2):93-106.
 17. Malinauskiene V, Leisyte P, Malinauskas R. Psychosocial job characteristics, social support, and sense of coherence as determinants of mental health among nurses. *Medicina (Kaunas).*2009;**45**(11):910-917.
 18. Schulz M, Damkroger A, Heins C, Wehlitz L, Lohr M, Driessen M, et al. Effort-reward imbalance and burnout among German nurses in medical compared with psychiatric hospital settings. *J Psychiatr Ment Health Nurs.*2009;**16**(3):225-33.
 19. Weyers S, Peter R, Boggild H, Jeppesen HJ, Siegrist J. Psychosocial work stress is associated with poor self-rated health in Danish nurses: a test of the effort-reward imbalance model. *Scand J Caring Sci.*2006;**20**(1):26-34.
 20. Khanizadeh M, Sirati NIRM, Abdi F. [Assessing of mental health level of employed nurses in educational hospitals affiliated to Tehran medical sciences university]. *Quart J Fundam Ment Health.*2006;**8**(31-32):141-8.
 21. Rahimi A, Ahmadi F, Akhond MR. [An investigation of amount and factors affecting nurses' job stress in some hospitals in Tehran]. *Hayat.*2004;**10**(3).
 22. Hashemi Nazari SS, Khosravi J, Faghihzadeh S, Etemadzadeh SH. [A survey of mental health among fire department employees by GHQ-28 questionnaire in 2005, Tehran-Iran]. *Hakim.*2007;**10**(2):56-64.
 23. Toubaei S, Sahraeian A. Burnout and job satisfaction of nurses working in internal, surgery, psychiatry burn and burn wards. *Ofogh-e-Danesh J.*2007;**12**(4):40-45.
 24. Arafa MA, Nazel MWA, Ibrahim NK, Attia A. Predictors of psychological well being of nurses in Alexandria, Egypt. *Int J Nurs Pract.*2003;**9**(5):313-320.
 25. Fagin L, Brown D, Bartlett H, Leary J, Carson J. The Claybury Community Psychiatric Nurse Stress Study: is it more stressful to work in hospital or the community? *J Adv Nurs.*1995;**22**(2):347-58.
 26. Farrell GA. The mental health of hospital nurses in Tasmania as measured by the 12-item General Health Questionnaire. *J Adv Nurs.*1998;**28**(4):707-12.
 27. Kawano Y. Association of job-related stress factors with psychological and somatic symptoms among Japanese hospital nurses: effect of departmental environment in acute care hospitals. *J Occup Health.*2008;**50**(1):79-85.
 28. Ardekani ZZ, Kakooei H, Ayattollahi SM, Choobineh A, Seraji GN. Prevalence of mental disorders among shift work hospital nurses in Shiraz, Iran. *Pak J Biol Sci.*2008;**11**(12):1605-9.
 29. Gao YQ, Pan BC, Sun W, Wu H, Wang JN, Wang L. Depressive symptoms among Chinese nurses: prevalence and the associated factors. *J Adv Nurs.*2012;**68**(5):1166-75.
 30. Williams P, Goldberg DP, Mari J. The validity of the GHQ questionnaire. *Soc Psychiatry.*1987;**21**:15.
 31. Sahebi L, Ayatollahi SMT. [Mental health status of hospital staffs in shiraz]. *Ofogh-e-Danesh J.*2006;**12**(4):26-34.
 32. Chan AO, Huak CY. Influence of work environment on emotional health in a health care setting. *Occup Med (Lond).*2004;**54**(3):207-12.
 33. Mealer ML, Shelton A, Berg B, Rothbaum B, Moss M. Increased prevalence of post-traumatic stress disorder symptoms in critical care nurses. *Am J Respir Crit Care Med.*2007;**175**(7):693-7.