

Research Article

## A Comparison of Hospital Stressors and their Related Factors: From the Perspective of the Cardiac and Internal Wards' Patients

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### ABSTRACT

**Background:** Stress is one of the human being's predicaments in the current century which has extended its effects on various aspects of peoples' lives. These unpleasant effects have indeed afflicted the patients even more and can aggravate their health status. Therefore, this study was conducted to examine the stressors inherent in the cardiac ward and internal ward of hospitals.

**Methods and materials:** This cross-sectional study was carried out in Sistaan-va-Baluchestaaan province, Zahedaan city in 2013 and all of the patients hospitalized in the cardiac and internal wards of the Khaatam Hospital and Imam Ali Hospital were taken as the population. Available sampling was used to extract a sample of 368 patients. Data was gathered by handing out a questionnaire produced by the researcher and the descriptive statistics, Chi-square, and ANOVA tests were used to analyze the data.

**Results:** Analyses indicate that the mean of stressors in the internal and cardiac wards are 60.36 and 44.90 respectively which are statistically significant. The mean of stressors' scores has a significant relationship with background factors such as level of education, hospitalization history, marital status, religion, and sex but did not render any significant relationship with other variables.

**Conclusion:** Since stress may lead to the deterioration of the patients' illness it is expected that the authorities detect the least stressors in hospitals and take action to moderate them. In this regard non-specialist units are in greater need for attention.

**Key Words:** Hospitals Stressors, Related Factor, Cardiac ward, Internal ward, Patients

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### INTRODUCTION

Stress is a general term used to describe psychological and physiological response patterns in the face of physical and emotional stimulation. Any stimuli and change which result in stress is called stressor or stress factor<sup>1</sup>. The relationship between stress and diseases, particularly cardiovascular diseases, has been identified and stressor condition helps the patient's deterioration. Stress is one of the most important phenomena of life in this century seen as a central issue in medical research due to the impact on people's physical and mental health<sup>2</sup>. According to the third WHO<sup>1</sup> report, cardiovascular diseases cause 12 million annual death worldwide<sup>3</sup> and it is predicted that, by 2020, cardiovascular diseases kill 25 million people annually and coronary artery disease will be the leading cause of mortality among humans worldwide. The etiology of cardiovascular disease will rise from almost 10% in 1990 to more than 20% in 2020<sup>4</sup>. In Iran, cardiovascular diseases are the most common cause of death<sup>5</sup>. Statistics

show that, by 2016, the mortality rate due to cardiovascular diseases will rise by 28% among females<sup>6</sup>. Patients in critical units experience numerous stressors. Sickness, facing with lack or anticipation of lack of hospitalization, is stress factor, resulting in patient's anxiety<sup>7</sup>. Studies show that negative mood was found to be associated with poor prognosis of heart diseases. During recovery phase, high level of hospital side effects-related anxiety consists of acute ischemia, arrhythmias, re-infarction, and cardiac death. Anxiety is an important predictor for next cardiac events of patients who develops myocardial infarction<sup>8</sup>. As many as 40 out of 100 sudden deaths were reported in a "stressful events" study<sup>9</sup>. The prevalence of sudden death and myocardial infarction rises after natural disasters such as earthquake<sup>1</sup>. Novaes et al. showed that hospitalized patients in ICU have the following stressors: pain, insomnia, having a nose tube, lack of independence, inadequate explanations about the disease, and inability to

Table 1: Demographic characteristics of patients in internal and critical wards

| Demographic characteristics | Critical wards<br>M±SD<br>N(%) | Internal ward<br>M±SD<br>N(%) |
|-----------------------------|--------------------------------|-------------------------------|
| Age                         | 41.2±11.2                      | 36.29±11.53                   |
| Gender                      |                                |                               |
| Female                      | 48(36.9)                       | 108(47)                       |
| Male                        | 82(63.1)                       | 122(53)                       |
| Marital                     |                                |                               |
| single                      | 35(29.9%)                      | 84(37.4%)                     |
| Married                     | 95(70.1%)                      | 144(62.6%)                    |
| Education                   | 10(7.7)                        | 57(24.8)                      |
| Illiterate                  | 16(12.2)                       | 28(12.2)                      |
| Primary                     | 27(20.8)                       | 28(12.2)                      |
| Guidance                    | 11(8.5)                        | 29(12.6)                      |
| High school and above       | 66(50.8)                       | 88(38.2)                      |
| Resident                    |                                |                               |
| rural                       | 103(79.2%)                     | 173(75.2%)                    |
| City                        | 27(20.8%)                      | 29(12.6)                      |
| Hospitalizations rate       |                                |                               |
| two                         | 40(30.8%)                      | 29(12.6%)                     |
| Three                       | 63(48.5%)                      | 129(56.1%)                    |
| Four and more               | 16(12.2%)                      | 28(12.2%)                     |
|                             | 11(8.5%)                       | 44(19.1%)                     |

Table 2: Physical, Economic, Ideological and religious factors in internal and cardiac wards

| Wards                             | Stressors   | Internal  | Cardiac   | P value |
|-----------------------------------|---|-----------|-----------|---------|
|                                   |   | M±SD      | M±SD      |         |
| Physical factors                  | Being in hospitals on weekends and holidays               | 1.33±5.1  | 1.13±0.4  | p<0/001 |
|                                   | Room and lounge wall color                                | 2.22±0.99 | 1.39±0.93 | P=0/390 |
|                                   | being hospitalized with critically ill patients           | 1.40±0.55 | 1.32±0.6  | P=0/491 |
|                                   | Being connected to cardiac monitoring device              | 1.73±0.83 | 1.29±0.64 | p<0/001 |
|                                   | 24-hour stay in wards                                     | 1.79±1.11 | 1.86±0.77 | p<0/001 |
|                                   | Unexpected hospitalization                                | 1.90±1.13 | 1.39±0.9  | P=0/002 |
|                                   | Far distance between home and hospital                    | 1.98±1.26 | 1.32±0.64 | p<0/001 |
|                                   | Room temperature  | 1.86±0.91 | 1.28±0.6  | p<0/001 |
|                                   | Hospital food   | 1.90±1.15 | 1.36±0.95 | P=0/012 |
|                                   | Change in meal time                                       | 1.73±1.04 | 1.31±0.65 | p<0/001 |
| Economic factors                  | Delays to respond the patient`s bell                      | 1.53±0.90 | 1.20±0.46 | p<0/001 |
|                                   | Insufficient budget of hospital fee                       | 1.75±0.92 | 1.27±0.64 | p<0/001 |
|                                   | Purchasing medicine by patients and relatives             | 1.70±0.96 | 1.26±0.64 | p<0/001 |
| Ideological and religious factors | Insurance problems  | 1.50±0.84 | 1.15±0.48 | p<0/001 |
|                                   | Difficulty in carrying out the rituals                    | 1.66±0.83 | 1.12±0.39 | p<0/001 |
|                                   | Inability to participate in religious ceremonies actively | 1.53±0.90 | 1.20±0.46 | p<0/001 |

move the arms and legs<sup>1</sup>. Given that a great deal of information is not available concerning the investigation of stressors in patients` points of views in Iran, and due to cultural differences and attitudes prevailing in different parts of Iran and the impact of these factors on perceived stress, this paper aims to study hospital stress factors in patients` point of views hospitalized in cardiology and internal wards in teaching hospitals in Zahedan, Iran in 2013. The paper aims to help patients for faster recovery through the identification of such stress factors.

**MATERIALS AND METHODS**

A descriptive-analytic study was performed among 368 PCCU patients in Khatam Al-Anbia and Ali-Ebne Ali Taleb teaching hospitals. Convenience sampling method was administered to collect data. Samples were chosen by referring to research environment, internal and cardiology critical units, in Ali-Ebne Abi Taleb and Khatam Al-Anbia hospitals. Entry criteria: cardiology or internal patients who were hospitalized and they had no history of surgery. The questionnaire used by experts and previous studies in this field was administered<sup>1,10,11</sup>. The questionnaire consists of five sections: the first section was for demographic features including age, gender, marital status, level of education, history of hospitalization, etc.; the

Table 3: Human factors in internal and cardiac wards

| Wards         | Stressors  | Internal  | Cardiac   | P value |
|---------------|--|-----------|-----------|---------|
|               |  | M±SD      | M±SD      |         |
| Human Factors | Hospitalization in rooms with many visitors                          | 1.40±0.92 | 1.20±0.52 | p<0/001 |
|               | Personnel and non-personnel`s noise in the ward                      | 1.73±0.77 | 1.20±0.51 | p<0/001 |
|               | Being far from family  | 1.37±0.72 | 1.30±0.69 | P=0/173 |
|               | Usage of specialized medical terms by nurses and doctors             | 1.99±1.13 | 1.4±0.69  | p<0/001 |
|               | Sadness as a result of hospitalization                               | 1.58±0.84 | 1.20±0.69 | p<0/001 |
|               | Blood provision-related problems for probable surgery                | 1.93±0.87 | 1.42±1.70 | P=0/964 |
|               | Fear of having a serious illness                                     | 1.46±0.87 | 1.20±0.56 | p<0/001 |
|               | Admission and hospitalization-related problems                       | 1.69±1.07 | 1.14±0.35 | p<0/001 |
|               | Not answering to requests and questions by male nurses               | 1.80±1.15 | 1.37±0.95 | P=0/001 |
|               | Being wakened by nurses for medicine and taking vital signs at night | 1.97±1.22 | 1.29±0.64 | p<0/001 |
|               | Wearing hospital uniforms  | 1.78±1.10 | 1.22±0.41 | p<0/001 |
|               | Electrocardiogram method   | 1.93±1.11 | 1.12±0.40 | p<0/001 |
|               | The method of treatment by hospital officials                        | 1.76±.87  | 1.26±0.49 | p<0/001 |
|               | Delays in helping patients   | 1.70±1.02 | 1.46±0.96 | P=0/086 |

second section consists of four sections with 30 items: 1. ten items for physical stress factors including presence in the hospital on weekends and holidays, room and lounge wall color, being hospitalized with critically ill patients, being connected to cardiac monitoring device, 24-hour stay in wards, far distance between home and hospital, room temperature, hospital foods, change in meal time, and delays to respond the patient`s bell. 2. Fourteen human stress factors including hospitalization in rooms with many visitors, personnel and non-personnel`s noise in the ward, being far from family, usage of specialized medical terms by nurses and doctors, sadness as a result of hospitalization, blood provision-related problems for possible surgery, etc. 3. Three economic stress factors including insufficient budget for hospitalization fee, medicine purchase by patients and their relatives, and insurance problems. 4. Three ideological and religious stress factors including inability to follow religious rituals, inability to participate in religious ceremonies, and insufficient budget for hospital fee. These factors were based on personal, sociological, economic, and cultural conditions of society. Also, 5-item Likert scale (extremely high, high, medium, low, and extremely low) was used. Sample size was chosen based on previous studies, average stress score of 60<sup>1,10,12</sup>, and replacing it in related formula. Also, questionnaires were filled out for illiterate samples by the researchers. In order to determine content validity, the stress factor questionnaire was given to 10 Nursing and Midwifery faculty members and two cardiovascular specialists for modification. Their points of views were taken into account to modify the questionnaire. Test-retest method was administered to determine reliability. Questionnaires were filled out in a two-week interval by 30 qualified patients. The correlation coefficient was reported 84%. All participants were free to participate.

Consent was taken prior to the study and patients were ensured about the confidentiality. The study was approved by the ethics committee of the University of Medical Sciences, Zahedan. SPSS (version 18, SPSS Inc., Chicago, IL) was used to analyze data. Frequency and frequency percentage were used to describe demographic characteristics. ANOVA test was used to study the relationship among demographic features including gender, residential location, marital status, and stress factors. Also, the relationship between level of education, number of hospitalization and stress factors was analyzed by t-test statistical test and then by descriptive statistical tests, variance analysis test, and t-test. Pearson correlation test was administered to compare stress factors in two groups.

**RESULTS**

The mean age of patients was reported 41.47 and 36.39 in cardiology ward and internal ward, respectively. The gender split in internal wards is 48 females (36.9%) and 82 males (63.1%). They were 108 female patients (47%) and 122 male patients (53%) in CCU. In terms of education, most patients in cardiology and internal wards had higher than high school certificate. Demographic characteristics are listed in Table 1. The results of ANOVA test showed that gender was found to be significantly associated with stress factor scores in internal wards (p<0.001). The results of t-test showed that level of education was significantly associated with stress factor scores in cardiology wards (p<0.016). Also, the results of ANOVA test showed that residential location was not found to be significantly associated with stress factors in internal wards (p=0.240). The results of ANOVA showed that marital status was not found to be significantly associated with stress factor scores in CCU (p=0.281). The results of t-test showed that

average score of stress factors was found to be significantly associated with the number of hospitalization in internal wards ( $p < 0.0001$ ). The comparison of physical stress factors in cardiology and internal wards showed that, "staying in hospitals on weekends and holidays", "being connected to cardiac monitoring device", "24-hour stay in ward", and "room temperature" were found to be significantly related ( $p < 0.001$ ). Also, a significant statistical difference was observed among all sociological, economic, and religious factors in cardiology and internal wards ( $p < 0.001$ ). (Table 2)

In human factor section, there factors including "being far from the family", "the blood provision problems for possible surgery", and "delays in helping patients" were not found to be significantly related in cardiology and internal wards ( $p > 0.05$ ) (Table 3)

## DISCUSSION

The average scores of stress factors in internal and cardiology wards showed that average scores of stress factors in cardiology wards are less than those of internal wards which might be associated with nature of cardiology wards, conditions, equipment, and type of care, leading to different levels of stress among patients in this ward. However, the researcher did not find similar study. This might be associated with the high quality of care in cardiology wards and special conditions of these wards concerning noise control and moderation which is effective in their stress. On the contrary, in internal wards, patients and doctors overcrowding and poor quality of nursing care can lead to patients' tension rise. The results of different studies showed that performance quality of nurses in critical units is more than that of nurses in non-critical units<sup>13,14</sup>. Taking this fact into account, it seems that mental peace and security of patients are associated with nursing care in above mentioned wards. Also, the number of hospitalization was more in cardiology ward which makes the familiarity of patients with ward and personnel possible, leading to reduced level of stress among patients in mentioned wards. Pearson correlation test showed that age was not found to be associated with average score of stress factors in this study ( $P = 0.109$  and  $r = -0.085$ ). The results of studies show that age is not found to be significantly associated with physiological stress factors which are consistent with this study<sup>15,16</sup>. However, the studies conducted by Ballard et al. and Cochran et al. showed that age was found to be significantly associated with therapeutic, physical, and environmental stressors which is inconsistent with the results of our study<sup>17,18</sup>. The average score of stress factors concerning gender is higher among females in cardiology ward. In the study conducted by Van Horn et al, the results showed that the averages of physiological stressor variables were found to be associated with gender so that these variables are higher among men than in women which is inconsistent with the results of this study<sup>19</sup>. It is claimed, while interpreting the

results of this study, that one reason to obtain higher scores concerning stressors among women than in men is associated with emotional and behavioral features of men and women which is consistent with the results of Heikkilä's study<sup>20</sup>. Considering special living condition of females in Sistan and Baluchistan province, Iran, some activities such as household chores, children's care, cooking, etc. can be effective in the creation of higher level of stress and tension. However, the study conducted by Nasiri et al. did not show any association between environmental stress factors and gender which is inconsistent with the results of this study<sup>21</sup>. The comparison of stressor average scores and level of education showed that average scores of stress factors were found to be associated with the level of education in internal wards. It means that illiterate people have fewer score than other groups; however, no association was found in cardiology ward. The results of the study conducted by Abou Atigh et al. showed that severity of stress was not found to be associated with different levels of education which is consistent with the results of this paper in cardiology ward<sup>11</sup>. In the study conducted by Rotondi et al., the level of education was not found to be associated with stressors which is not consistent with the results of this paper in cardiology ward<sup>22</sup>. It is claimed that this lack of association among cardiac patients is associated with patients' unawareness about the results of heart diseases and their consequences. The comparison of hospital-related stressor average scores and residential location hospitalized in internal and cardiology wards showed that no difference is seen between the scores of these two groups. The comparison of hospital-related stressor average scores and marital status showed that stressor average scores are higher among the single than the married. This is clearly obvious in internal wards; however, no difference was observed in cardiology ward. No association was found between stressors and marital status in the study conducted by Jafar Zadeh et al. which is consistent with the results of this paper in CCU; however, the results are different with those of internal wards<sup>23</sup>. The results of the study conducted by Heidari et al. showed that stress factors were not found to be significantly associated with marital status which is consistent with the results of this study<sup>24</sup>. The results of the study conducted by Afshar et al. did not show any association between stressors and marital status in case and control groups which is consistent with those of this study in cardiology ward and not internal wards<sup>25</sup>. The study of Nasiri et al. showed association between stress factors and marital status which is consistent with those of this study<sup>21</sup>. These resources also mentioned that spouse's social support can be effective in the level of perceived stress by individuals<sup>26</sup>. Since the single feel lonelier and have less support, this might be associated with higher level of stress perception in this study in the group of patients<sup>27</sup>. The comparison of stressor average scores and number of hospitalization

showed that the level of perceived stress is found to be associated with the number of hospitalization. As the number of hospitalization rises, their levels of stress also rise. Re-hospitalization is associated with pathogenicity and mortality rate<sup>28</sup>. The pressure of re-hospitalization is high for patients and their relatives due to state of concern, illness, and mortality. Also, re-hospitalization causes patient's dependency rise on relatives<sup>24</sup>, leaving adverse effects concerning the quality of life and well-being<sup>29</sup>. Prospective studies have shown that 12-75 percent of re-hospitalized cases are preventable through training, preparation before being released and offered care at homes<sup>30</sup>. Nurses, as the most important members of health professionals, are highly regarded. They need to have better perception of re-hospitalization after release<sup>28</sup> because nurses can provide the platform for treatment acceptance and follow up. This way, they will play an important role to prevent re-hospitalization.

### CONCLUSION

In this paper, only four stressors were not significant in both wards; however, other factors were different and significant in patients' opinions in internal and cardiology wards. In internal wards, important factors consist of room and lounge wall color, usage of specialized medical terms by nurses and doctors, far distance between home and hospital, and being wakened by nurses for medicine and taking vital signs during night. On the contrary, these factors in cardiology wards are blood-provision problems for possible surgery, usage of specialized medical terms by nurses and doctors, room and lounge wall color, and unexpected hospitalization. As it can be seen, stressors depend on wards and nurses are required to offer nursing care in internal wards and cardiology wards based on these factors.

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### REFERENCES

1. Novaes, M.F.P. et al. Stressors in ICU: perception of the patient, relatives and health care team. *Intensive care medicine* 25, 1421-1426 (1999).
2. Joosten, E., Demuynck, M., Detroyer, E. & Milisen, K. Prevalence of frailty and its ability to predict in hospital delirium, falls, and 6-month mortality in hospitalized older patients. *BMC geriatrics* 14, 1 (2014).
3. Mendis, S., Puska, P. & Norrving, B. *Global atlas on cardiovascular disease prevention and control*. (World Health Organization, 2011).
4. Montalescot, G. et al. 2013 ESC guidelines on the management of stable coronary artery disease. *European heart journal* 34, 2949-3003 (2013).
5. Kiani, F., Hesabi, N. & Arbabisarjou, A. Assessment of Risk Factors in Patients With Myocardial Infarction. *Global Journal of Health Science* 8, p255 (2015).
6. Wong, J. & Wong, S. Trends in lifestyle cardiovascular risk factors in women: analysis from the Canadian National Population Health Survey. *International journal of nursing studies* 39, 229-242 (2002).
7. Myhren, H., Ekeberg, O., Toien, K., Karlsson, S. & Stokland, O. Posttraumatic stress, anxiety and depression symptoms in patients during the first year post intensive care unit discharge. *Crit Care* 14, R14 (2010).
8. Canto, J.G. et al. Association of age and sex with myocardial infarction symptom presentation and in-hospital mortality. *Jama* 307, 813-822 (2012).
9. Sakakura, K. et al. Pathophysiology of atherosclerosis plaque progression. *Heart, Lung and Circulation* 22, 399-411 (2013).
10. So, H.M. & Chan, D.S.K. Perception of stressors by patients and nurses of critical care units in Hong Kong. *International journal of nursing studies* 41, 77-84 (2004).
11. Abuatiq, A., Burkard, J. & Clark, M.J. Literature Review: Patients' and Health Care Providers' Perceptions of Stressors in Critical Care Units. *Dimensions of Critical Care Nursing* 32, 22-27 (2013).
12. Hweidi, I.M. Jordanian patients' perception of stressors in critical care units: a questionnaire survey. *International journal of nursing studies* 44, 227-235 (2007).
13. Lahmann, N.A., Kottner, J., Dassen, T. & Tannen, A. Higher pressure ulcer risk on intensive care?—Comparison between general wards and intensive care units. *Journal of clinical nursing* 21, 354-361 (2012).
14. Ball, J.E., Murrells, T., Rafferty, A.M., Morrow, E. & Griffiths, P. 'Care left undone' during nursing shifts: associations with workload and perceived quality of care. *BMJ quality & safety*, bmjqs-2012-001767 (2013).
15. Rodin, J. Health, control, and aging. *The psychology of control and aging*, 139-165 (2014).
16. Tomiyama, A.J. et al. Does cellular aging relate to patterns of allostasis?: An examination of basal and stress reactive HPA axis activity and telomere length. *Physiology & Behavior* 106, 40-45 (2012).
17. Ballard, K.S. Identification of environmental stressors for patients in a surgical intensive care unit. *Issues in Mental Health Nursing* 3, 89-108 (1981).
18. Cochran, J. & Ganong, L.H. A comparison of nurses' and patients' perceptions of intensive care unit stressors. *Journal of Advanced Nursing* 14, 1038-1043 (1989).
19. Van Horn, E. & Tesh, A. The effect of critical care hospitalization on family members: stress and responses. *Dimensions of Critical Care Nursing* 19, 40&hyphen (2000).
20. Heikkilä, J., Paunonen, M., Virtanen, V. & Laippala, P. Gender differences in fears related to coronary arteriography. *Heart & Lung: The Journal of Acute and Critical Care* 28, 20-30 (1999).
21. Nasiri, M., Rahimiyan, B., Jahanshahi, M., Hajiyan, K. & Nikfar, J. Stressors associated with hospitalization in

- the stressful cardiac care unit. *Journal of Critical Care Nursing* 4, 141-148 (2011).
22. Rotondi, A.J. et al. Patients' recollections of stressful experiences while receiving prolonged mechanical ventilation in an intensive care unit\*. *Critical care medicine* 30, 746-752 (2002).
23. Jafarzadeh fakhari, m. & maskani, k. A comparison of the perceptions nurses and cardiac patients from both disease and hospital stressors. 2 13, 122-126 (2006).
24. Heydari, A., Ziaee, E.S. & Ebrahimzade, S. The Frequency of Rehospitalization and Its Contributing Factors in Patient with Cardiovascular Diseases Hospitalized in Selected Hospitals in Mashhad In 2010. *Quarterly of Horizon of Medical Sciences* 17, 65-71 (2011).
25. Afshar, H. et al. The Stressors and Perceived Social Support in the Patients with Ulcerative Colitis. *Journal of Isfahan Medical School* 28 (2011).
26. Martins, M.V., Peterson, B.D., Almeida, V.M. & Costa, M.E. Direct and indirect effects of perceived social support on women's infertility-related stress. *Human Reproduction*, der157 (2011).
27. Eom, C.S. et al. Impact of perceived social support on the mental health and health-related quality of life in cancer patients: results from a nationwide, multicenter survey in South Korea. *Psycho-Oncology* 22, 1283-1290 (2013).
28. Hekmatpou, D., Mohammadi, E., Ahmadi, F. & Arefi, S.h. Barriers of readmission control among patients with congestive heart failure: A qualitative study. *Arak University of Medical Sciences Journal* 11, 49-58 (2008).
29. Tindle, H. et al. Optimism, response to treatment of depression, and rehospitalization after coronary artery bypass graft surgery. *Psychosomatic medicine* 74, 200 (2012).
30. Benbassat, J. & Taragin, M. Hospital readmissions as a measure of quality of health care: advantages and limitations. *Archives of Internal Medicine* 160, 1074-1081 (2000).