Assessment of occupational stress and its associated factors among health care professionals working in Gurage Zone Public Hospitals in Southern Ethiopia

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Research Article

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Abstract

Background: Job-related stress is harmful physical and emotional responses that occur when the requirements of the job don't match the capabilities and needs of the worker. Therefore, if work isn't properly managed, job stress can happen that leads to illness, absenteeism, high turnover, and decreased productivity that compromise provision of quality service to clients. Workers are backbones of countries development that are at risk of different occupational stresses. And, there's no information about job-related stress among healthcare professionals and predicting factors around the study area. So, this study is aimed to assess occupational related stress and predicting factors among health care professional working in Gurage Zone public hospitals, Southern Ethiopia by August 2021.

Method: Institutional based cross-sectional study was conducted to assess occupational related stress and predicting factors among health care professionals. A structured self-administered questionnaire was used to collect data from 345 study participants. The data was collected and analyzed by using Statistical Package for Social Science (SPSS) version.23. The association between dependent and independent variables were checked by using bivariant and multivariable logistic regression. Finally, descriptive writings, tables and graphs were used to describe study variables.

Result: The result showed that the prevalence of occupation (work-related) stress among healthcare professionals was 78.3%. Wards in which healthcare professionals are working, position of healthcare professionals, working hour and work shift have significant association with stress status of respondents. When compared to Medical ward, professionals working in other wards were 1.62 times more likely to have stress [AOR 1.62 (1.23, 2.13)]. Also, when compared to respondents who are working for 8 hour per day, those working more than 8 hour per day were 70 times more likely to have stress [AOR 70 (85, 582)].

Discussion and Conclusion: According to this study three out of four respondents were found to have stress among healthcare professionals. Regular trainings for healthcare professional should be needed in public hospitals to reduce stresses.

Introduction

Stress is a term for describing individual's negative interpretation for a real or subjective event as a threatening factor, which causes fear or anger(1). Job related stress is defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker(2). It occurs when the demands of a working environment over power the capacities of workers to cope with. Work related stress (WRS) is the response that individuals may face when they have job demands and pressures that mismatched their knowledge and abilities (3, 4). Healthcare settings are particular risks for occupational stress, burnout and job dissatisfaction because of the increased patient load and the high patient to health professional ratios(5). In general, an imbalance between work demands and the capacity to cope with such demands will cause stress(6, 7) . Impacts of stress in work were estimated to be approximately $5.4 billion every year worldwide(8). Half a million employee in Britanie was facing stress at an ill-health causing level(9).
Stress at workplace among health professionals predisposes to an inefficient organization, absenteeism from work, job dissatisfaction, and various physical, psychological as well as behavioral health problems. Work related stress causes physical and psychological disorders. It also causes change in a person's physiology that forces them to deviate from their normal functions and work environment(10). The effects of job stress are considered terrible to both employees and employers. For the organization, the results are disorganization, disruption in normal operations, and decrease in productivity. For the employee, the effects of job stress are more than that of the organization(11). Health care profession is generally considered a stressful and demanding profession(12). There is a number of evidence that health care profession is a stressful occupation, which can lead to disruptions in both psychological and physical health and can impair professional practice(13). Despite this, little has been done into this health issue. So, this study will assess occupational stress and its determinants among health care professionals.

Work related stress on nurses would lead to absenteeism and turnover, which would affect the quality of patient care. That result in increased mortality among patients, failure to rescue and patient dissatisfaction(14). Causes of stress in health care professionals include also physical labor, suffering and emotional demands of patients and families, work hours, shift work, interpersonal relationships like inter- and intra-professional conflict, and lack of supportive relationship or poor relationship with colleagues and supervisors are also potential sources of stress(15).

Stress is a nonspecific response of the body to any demand of change that have an impact on human conditions and health (16). Workplace stress occurs in all workers or employees and high among health-care professionals an important group that can be affected by workplace stress because of the nature of their work environment(17).

Impact of stress on health sector’s employees is more prevalent due to environment complexity (18). Workplace stress can have a number of impacts on health including mental and behavioral disorders such as exhaustion, burnout, anxiety and depression, as well as other physical impairments such as cardio-vascular disease and musculoskeletal disorders(19). In addition, stress can result in work absences, higher turnover, early retirement, lower productivity, and lower quality of services or products (20).

Job related stress has been found to be one of the major health problems. Job related stress incurs economic costs on the society and influences physical and psychological health of health care professionals and it can lead to burnout of health care professionals as well as a negative attitude toward professional activities and lack of appropriate communications with the patients(21). Stress contributes to health problems in health care professionals and decreases their efficiency, imposing a direct economic cost on employers and great impact on patients’ care(22).

The study conducted in Addis Ababa revealed that gender, work shift, illness, marital status, and work unit were significantly associated with workplace stress (23). A study conducted in Worabe, South West Ethiopia, pointed out that sex, age, religion, ethnicity, marital status, child rearing, professional qualification, monthly salary, work experiences and department of work were the contributing factor of workplace stress (24). The study done in Kampala Uganda also showed that work experience and number of children were significant risk factors of workplace stress(25). A study done in New Zealand showed that excessive paper work, health reforms, bureaucratic interference, excessive hours and on-call work were the major factors associated with workplace
stress(26). Another study done in Melbourne, Australia stated that determinants of workplace stress were social support, nurse empowerment and self-determination(27). Similarly, a study done in Jordan revealed that workplace stress was highest among general practitioners, dentists, and pharmacists and lowest among physician specialists (9). Similarly, a study done in Iran concluded that the risk factors of workplace stress were gender, hospital ward and working shift (28).

In Ethiopia, a study conducted in Jima Zone south west Ethiopia showed an average overall job related stress level of 58.46 ± 12.62, Addis Ababa, 37.8% of nurses reported experiencing occupational stress and in East Gojjam Zone Public hospitals northwest Ethiopia, 57.3% of nurses were occupationally stressful(29),(23),(30)).

With this regard, there are few studies conducted on job related stress and its predicting factors among healthcare professionals nationally and there are no specifically conducted study in Wolkite University public hospitals. Therefore, the objective of this study was to assess workplace stress and associated factors among health care professionals working in Wolkite University public hospitals. It could be used to guide preventive measures and to provide methods to reduce the job stress experienced by health care professionals in the study area.

**Method And Materials**

Gurage zone is one of the administrative zones in South Ethiopia. It has 13 districts and two town administrations. Wolkite town is the capital of Gurage zone. It is found 153 km southwest to Addis Ababa, the capital of Ethiopia. According to the 2007 national household census, Gurage zone has total population of 1,279,646, of which 657,568 are women. The study was conducted in Wolkite University specialized teaching hospital, Butajira general hospital and Gunchire primary hospital in Gurage Zone, SNNP region, Ethiopia by 2021. Hospital based cross sectional study design was conducted.

The sample size for this study was calculated by using a single population proportion formula. To calculate the sample size, the prevalence rate of job related stress taken from the previous research is 48.6 % (16). Our calculated sample size under objective 2 including non-response rate ni = 319*10% (31.9) + 319= 351 which was used to conduct this study. Out the total sample size, the data for this study was collected from 345 respondents which were 98.3% response rate.

The hospitals were purposively selected from all hospitals in the zone for this study. Based on the number of health professionals working in the hospital, the sample size was proportional allocation for healthcare departments in each hospital. By simple random sampling technique data was collected from 345 health care professionals.

A structured self-administered questionnaire was used to collect data from study participants. The questionnaire was adapted from literatures with modification to this study setting. The questionnaire developed by English version translated into Amharic language and then back into English after language experts in both cases participated to check its consistency. The questionnaire consists of two parts. Socio-demographics and work characteristics information, and modified expanded nursing stress scale (ENSS) which measures job related stress.
One day training was given for data collectors and pre-testing of questionnaire was done to ensure the quality of data at another hospital in the zone by using 5% of the sample size. Principal investigators and advisors did spot-checking and reviewing all the completed questionnaires to ensure completeness and consistency of the information that was collected. We are both the data collectors and principal investigators for our study. Data entry was started on the process of data collection time.

The coded data was entered into statistical package for social sciences (SPSS) version 23 for data analysis. The association between dependent and independent variables was checked by using simple bivariate logistic regression at p< 0.25 and those candidates selected were again analyzed by using multivariable logistic regression. The strength of association between the dependent and independent variables was determined by calculating the odds ratio. Finally, the variables which have significant association were identified on the basis of AOR with 95% CI and p< 0.05 in multivariable binary logistic regression. Descriptive writings, tables and graphs were used to describe study variables.

Ethical clearance letter was obtained from Wolkite University department of Nursing. During data collection, the purpose of the study was clearly explained to the participants and informed verbal consent was obtained from each study participant for the data collection. Issues of rights, privacy and confidentiality were ensured during data collection period. Confidentiality was kept by making anonymous and assuring information will not be accessible to anyone. Privacy was maintained by arranging silent and comfortable place to the interviewer and study subject. Participants were given the right to participate or not and to withdraw at any time when they feel discomfort.

The findings of this study was submitted and presented to Wolkite University, department of Nursing. Effort will be made to present this study in different symposiums. It will also be disseminated to interested institutions, and other concerned and interested organizations. Publication in peer reviewed, national or international journals will also be considered.

**Results**

From 351 total sample size 345 households were participated in this study with a response rate of 98.3%. About 195 (56.5%) of respondents are within the age range of 30-49 years. Among the respondents majority 228(66.1%) were females and 191 (55.4%) were bachelor degree holders. The marital status of respondents indicates that 174 (50.4%) were single. One hundred eighty nine (54.8%) of the respondents were followers of Orthodox Christianity followed by Muslims which accounts 88 (25.5%). Regarding their ward, 140(40.6%) of the respondents were from medical ward. Out of total respondents 188 (54.5%) were working more than 8 hour per day (24 hours). The detail of respondents characteristics were described below in table 1.

| Table 1: Socio-demographic Characteristics of study participants (n = 345) |
| Characteristics                          | Number | Percentage (%) |
|-----------------------------------------|--------|----------------|
| **Sex**                                 |        |                |
| Male                                    | 117    | 33.9           |
| Female                                  | 228    | 66.1           |
| **Age**                                 |        |                |
| 18-29                                   | 150    | 43.5           |
| 30-49                                   | 195    | 56.5           |
| **Religion**                            |        |                |
| Orthodox                                | 189    | 54.8           |
| Muslim                                  | 88     | 25.5           |
| Protestant                              | 68     | 19.7           |
| **Marital status**                      |        |                |
| Single                                  | 174    | 50.4           |
| Married                                 | 171    | 49.6           |
| **Level of education**                  |        |                |
| Diploma                                 | 136    | 39.4           |
| Bachelor                                | 191    | 55.4           |
| Masters and above                       | 18     | 5.2            |
| **Do you have children**                |        |                |
| Yes                                     | 124    | 35.9           |
| No                                      | 221    | 64.1           |
| **Monthly salary**                      |        |                |
| Less than 6000                          | 74     | 21.4           |
| Greater or equal to 6000                | 271    | 78.6           |
| **Work experience**                     |        |                |
| 2 year and below                        | 44     | 12.8           |
| More than 2 year                        | 301    | 87.2           |
| **Ward/unit where you work**            |        |                |
| Medical ward                            | 140    | 40.6           |
| Surgical ward                           | 76     | 22             |
| Gynecology                              | 18     | 5.2            |
| OPD                                     | 64     | 18.6           |
| Others                                  | 47     | 13.6           |
| **Position**                            |        |                |
| Staff                                   | 210    | 60.9           |
| Head of unit                            | 22     | 6.4            |
| Matron nurse                            | 56     | 16.2           |
| Supervisor                              | 8      | 2.3            |
| Case team director                      | 49     | 14.2           |
| **Working hour**                        |        |                |
| 8 hour                                  | 157    | 45.5           |
| Greater than 8 hour                     | 188    | 54.5           |
| **Work shift**                          |        |                |
| Rotating                                | 288    | 83.5           |
| Fixed                                   | 157    | 16.5           |
| **Job satisfaction**                    |        |                |
| No                                      | 95     | 27.5           |
| Yes                                     | 250    | 72.5           |
| **Known chronic medical illness**       |        |                |
| No                                      | 345    | 100            |
| Any medication for known chronic illness | 345 | 100 |
|----------------------------------------|-----|-----|
| Any substance                          |     |     |
| No                                     | 316 | 91.6|
| Yes                                    | 29  | 8.4 |
| Extra payment for additional load      |     |     |
| No                                     | 210 | 60.9|
| Yes                                    | 135 | 39.1|

Individuals’ responses to total questions modified from ENSS were used to assess the stress status of respondents. About a total of 53 questions were used with average mean score of 2.5 used as cut off point and those respondents scored 2.5 and above mean in the ENSS were categorized as stressed. The total respondents scored mean score of 2.5 and above were 270 (78.3%), which were categorized as stressed.

The association between dependent and independent variables was checked by using bivariate logistic regression at p< 0.25 and then candidates were selected for analysis by multivariable binary logistic regression. Based on this, out of total variables used, variables like marital status, ward/unit, working hour, position and work shift were identified as eligible by simple bivariate logistic regression for analysis by multivariable logistic regression. The strength of association between the dependent and independent variables was determined by calculating the odds ratio. Finally, the variables which have significant association were identified on the basis of AOR with 95% CI and p< 0.05 in multivariable logistic regression. By controlling confounding variables the result of multivariable logistic regression shows that except marital status the remaining four variables have significant association with stress status of respondents.

Accordingly, using binary logistic regression analysis, when compared to respondents who were single those married respondents were 1.76 times more likely to have stress [COR 1.76 (1.044, 2.967)]. In the same way compared to respondents who are working for 8 hour per day, those working more than 8 hour per day were 2.27 times more likely to have stress [COR 2.27 (1.35, 3.84)]. On the other hand, compared to fixed work shift, those respondents having rotating work shift were 0.184 times less likely to have stress [COR 0.184 (0.10, 0.34)]. In the same way, compared to professionals working as staff, professional in other working positions were 0.48 times less likely to have stress [COR 0.48 (0.41, 0.58)]. Also, compared to Medical ward, professionals working in other wards were 0.82 times less likely to have stress [COR 0.82 (0.76, 0.89)].

Multiple logistic regressions analysis shows ward, position, working hour and work shift have significant association with stress status of respondents. The result shows, when compared to respondents who are working for 8 hour per day, those working more than 8 hour per day were 70 times more likely to have stress [AOR 70 (85, 582)]. The reverse of simple binary logistic regression, when compared to Medical ward, professionals working in other wards were 1.62 times more likely to have stress [AOR 1.62 (1.23, 2.13)]. On the other hand, compared to fixed work shift, those respondents having rotating work shift were 0.01 times less likely to have stress [AOR 0.01 (0.001, 0.02)]. In the same way, compared to professionals working as staff, professional in other working positions were 0.01 times less likely to have stress [AOR 0.01 (0.002, 0.09)] (See table 2).
### Table 2: Logistic regression analysis result showing association between variables

| Characteristics                  | Stress status          | COR(95% CI)     | AOR(95% CI)     | COR P-value | AOR P-value |
|----------------------------------|------------------------|-----------------|-----------------|--------------|--------------|
|                                  | Not stressful No. (%)  | Stressful No. (%) |                 |              |              |
| Marital status                   |                        |                 |                 |              |              |
| Single                           | 46 (13.3)              | 128 (37.1)      | 1.76 (1.04, 2.97) | 0.03         | 0.94         |
| Married                          | 29 (8.4)               | 142 (41.2)      |                 |              |              |
| Ward/unit where you work         |                        |                 |                 |              |              |
| Medical ward                     | 0                      | 140 (40.6)      | 0.82 (0.76, 0.89) | 0.00         | 0.01         |
| Surgical ward                    | 29 (8.4)               | 47 (13.6)       |                 |              |              |
| Gynecology                       | 0                      | 18 (52.2)       |                 |              |              |
| OPD                              | 46 (13.4)              | 18 (52.2)       |                 |              |              |
| Others                           |                        |                 |                 |              |              |
| Position                         |                        |                 |                 |              |              |
| Staff                            | 5 (1.5)                | 205 (59.4)      | 0.48 (0.41, 0.58) | 0.00         | 0.00         |
| Head of unit                     | 4 (1.2)                | 18 (5.2)        |                 |              |              |
| Matron nurse                     | 8 (2.3)                | 0               |                 |              |              |
| Supervisor                       | 56 (16.2)              | 0               |                 |              |              |
| Case team director               | 2 (0.6)                | 47 (13.6)       |                 |              |              |
| Working hour                     |                        |                 |                 |              |              |
| 8 hour                           | 46 (13.3)              | 111 (32.2)      | 2.27 (1.35, 3.84) | 0.00         | 0.00         |
| Greater than 8 hour              | 29 (8.4)               | 159 (46.1)      |                 |              |              |
| Work shift                       |                        |                 |                 |              |              |
| Rotating                         | 46 (13.3)              | 242 (70.2)      | 0.18 (0.10, 0.34) | 0.00         | 0.00         |
| Fixed                            | 29 (8.4)               | 28 (8.1)        |                 |              |              |

### Discussion And Conclusion
The result of this study showed that about three fourth of the study participants have stress. Based on the result the working ward/unit and working hour are majorly identified as having a significant association and effect on stress status of health care professionals.

Based on our study, the prevalence of occupation (work related) stress is 78.3% which is higher than others study indifferent areas like among healthcare professionals working Addis Abeba public hospital 37.8% (23), healthcare staff in Iran 34.9%(33), healthcare professionals working Jima Zone public hospitals 58.46%(29), healthcare professionals working in East Gojam Zone public hospitals 57%(30) and based on national institute of occupational safety and health study 48.6%. This high prevalence of work related occupational stress may be due to lack of occupational and environmental professionals working in the three hospitals our study conducted.

This study showed working hour/work load, work shift and work site/unit are identified as having significant association with work related stress which is similar to the studies like study conducted in Spain on three hospitals (workload)(40) and work shift and type of ward/unit were identified by study conducted at Addis Abeba public hospital (23). Based on our study, using rotating work shift and working for 8 hour are some factors that resulted in reducing stress among professionals participated under this study.

According to this study three out of four respondents were found to have stress among healthcare professionals. Multiple logistic regressions were used to determine wither a variable is a factor or not based on stress status of respondents. Ward/unit, position, work shift and working hour have significant association with stress. Multiple logistic regressions analysis shows ward, position, working hour and work shift have significant association with stress status of respondents.

The result shows, when compared to respondents who are working for 8 hour per day, those working more than 8 hour per day were more likely to have stress. When compared to Medical ward, professionals working in other wards were more likely to have stress. On the other hand, compared to fixed work shift, those respondents having rotating work shift were less likely to have stress. In the same way, compared to professionals working as staff, professional in other working positions were less likely to have stress.

Strength of the study

- Good response rate

Limitation of the study

- The questioner was mostly focused on stress assessment questions of nursing professionals stress status

Recommendation

- Awareness creation by hospitals should be needed for healthcare professional about the importance avoiding occupational stresses among healthcare professionals in the public hospitals.
- The public hospitals should have to employee occupation health and safety professionals to keep the health and safety of healthcare professionals in the public hospitals.
Reducing the working hour to 8 per day and using rotational work shift should be employed by the public hospitals to reduce occupational stress.

Regular trainings for professional should be needed in public hospitals to reduce stress

Doing future researches on stress among healthcare professionals in a public hospitals and clinics should be needed to increase the knowledge on stress and to fill any identified gaps.

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Declarations

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