

# Assessment of Occupational Stress and Associated Factors Among Nurses in East Gojjam Zone Public Hospitals Northwest Ethiopia, 2016

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**Abstract:** Background: Occupational stress has been reported to affect job satisfaction among nurses, thus compromising nursing care and placing patients' lives at risk. Nursing has been identified and reported by a number of studies as a stressful occupation. Occupational stress is a serious condition for nursing professionals that is directly associated with impaired and inappropriate performance and working within clinical settings. Objective: To assess the level of occupational stress and associated factors among nurses in East Gojjam Zone Public hospitals northwest Ethiopia 2016. Method: Institutional based cross-sectional study design was employed. Sampling method was simple random sampling and data were collected from March 8 to 23, 2016. Source population of the study were all nurses who work at public hospitals in East Gojjam zone public hospitals and sample size was 181 nurses from the four hospitals. After nurses were proportionally allocated to size from the four hospitals, data were collected through pretested self-administered structured questionnaire. Results: A total of 178 nurses were voluntarily agreed to participate in the study with a response rate of 98.3%. The study finding showed that 57.3% of nurses were occupationally stressful. Workload subscale was the most sources of stress followed by death and dying and uncertainty concerning treatment. Sex and work experience of respondents were significantly associated with occupational stress. All subscales of expanded nursing stress scale were positively correlated with over overall occupational stress. Conclusion: More than half of the nurses were occupationally stressful. Recommendation: The Amhara regional health bureau and study hospitals should develop stress reduction management programs.

**Keywords:** Occupational Stress, East Gojjam, Nurses

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## 1. Introduction

The national institute for occupational safety and health (NIOSH) defines occupational stress 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 [1]. In an organizational context, occupational stress is also known as job stress

and/or work stress. These terms are often used interchangeably in organizations, but its meaning refers to the same thing [2].

Individuals face stress in their personal and professional lives on a daily basis. There are multiple reasons that can cause stress and such reasons can change our current physical, psychological and behavioral responses, which ultimately results into negative outcomes, in personal lives as well as in job outcomes [3].

Nursing, by its very nature, an occupation subject to a high degree of stress. This profession involves working with people who are themselves suffering a considerable degree of stress. Patients are often difficult, frightened and resentful, and nurses can find themselves responding with a growing sense of irritability and frustration and nurses will opt to quite the profession [4]. Nurses directly confront severe illness and death, and it is considered a highly stressful occupation compared with other professions [5].

Occupational stress can lead to various negative consequences for the individual and the workplace. On the individual level poor physical health and poor mental health and on the organizational level organizational costs were reported [6]. Further more stress has a cost for individuals in terms of health, well-being and job dissatisfaction, as well as for organizations in terms of absenteeism and turnover, which in turn may impact upon the quality of patient care [7].

Study conducted in northwest England showed that nurses' health was adversely affected by higher levels of stressors which was related to lower job satisfaction [8]. Another study on a comparative study about the impact of stress on job satisfaction between Jordanian and Saudi nurses showed that Jordanian and Saudi nurses' job satisfaction was reduced by stress [9]. Further more study in Uganda showed that there was a significant negative association between occupational stress and job satisfaction among nurses [10].

Occupational stress is a serious condition for nursing professionals that is directly associated with impaired and inappropriate performance and working within clinical settings. These issues will result in the poor performance at the workplace [11]. For example study conducted on burnout in relation to specific contributing factors and health outcomes among Nurses: a systematic review showed that nurses who experience higher stress levels were less satisfied with their jobs [12].

Nursing is generally perceived as demanding profession. Along with the increased demand and progress in the nursing profession, stress among the nurses has also increased [13]. For example study done in Delhi India showed that prevalence of stress among nurses was 87.4% [14]. Another study conducted on Nurses in selected Jordanian Hospitals showed that occupational stress was present among 30% of the nurses [15]. More over study conducted in public Hospitals of Addis Ababa, Ethiopia 37.8% nurses reported experiencing occupational stress [16].

## 2. Methods

### Study Design and Sampling Procedure

Institutional based Cross-sectional study design was employed. The study was conducted in East Gojjam Zone Public Hospitals. In East Gojjam Zone there were 4 Hospitals (Debre Markos Referral Hospital, Lumamie Hospital, Bichena Hospiatl and Shegaw Motta Hospital) with a total of 284 nurses during this study. By simple random sampling

181 nurses were included in the study as the study participant.

### Instrument and Measurements

A structured self-administered questionnaire was used to collect data from study participants. Questionnaires were adopted from literatures with some modification and contextualized into local context.

Occupational stress was measured by modified expanded nursing stress scale (ENSS) which consists of 50 items with eight subscales with response options in a Likert scale format (1= never stressful, 2 = slightly stressful, 3 = moderately stressful, 4 = very much stressful). The subscales are: death and dying, inadequate emotional preparation, uncertainty concerning treatment, workload, conflict with physician, problems with peers, problems with supervisors and patient and family. Reliability of the instrument was established with an overall Cronbach's alpha score of 0.96 [17]. To determine the general overall level of occupational stress, respondents having average score of below mean value were classified as 'occupationally not stressful', and those with average score of mean value and above were considered as 'occupationally stressful'.

### Data Quality Control

Four health professionals one for each hospital were recruited for distributing and collecting the completed questionnaires. Training and orientation was given about the purpose of the study and details of the questionnaire. In order to evaluate the clarity of the questions in the questionnaire and to ensure the reactions of the respondents to the questions, the questionnaire was pre tested before actual data collection.

### Ethical Clearance

Ethical clearance and approval to conduct this research was obtained from research and ethical review board of department of nursing and midwifery, school of allied health science, college of

Health science, Addis Ababa University. After thoroughly discussing, the ultimate purpose and method of the study, permission was sought from the study hospitals.

### Data Processing and Analysis

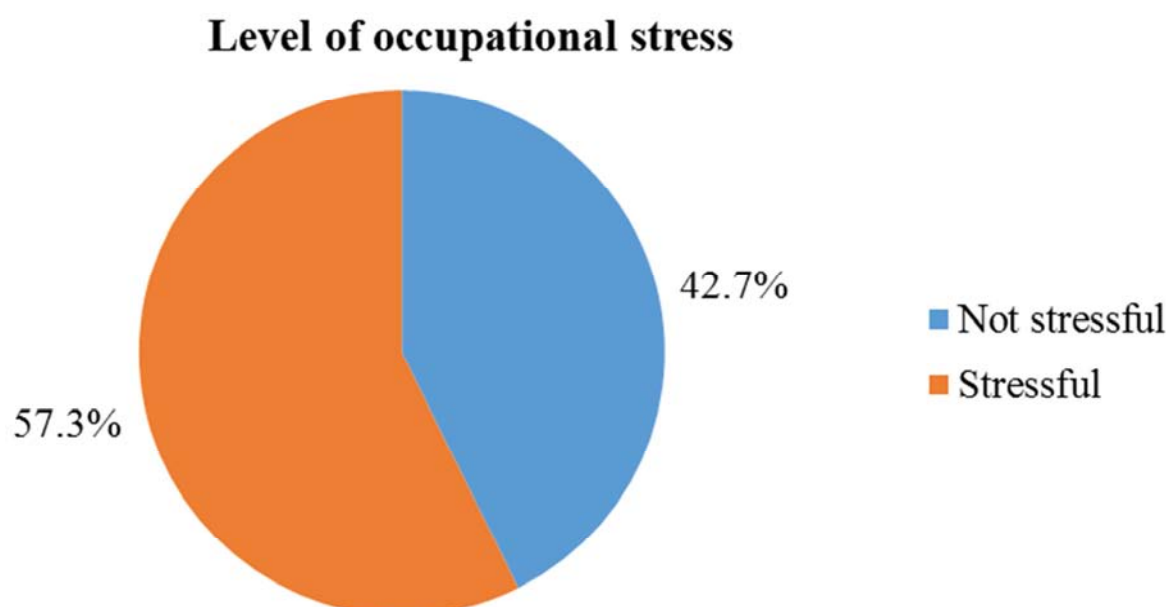
After the data were collected, it was coded and entered into Epi data version 3.1. Then the data were exported to SPSS version 23.00. Data analysis was done using descriptive and inferential statistics. Statistical analyses were performed with the use of binary logistic regression and Spearman's rank correlation.

## 3. Results

Generally from the aggregated average mean stress level of each sub scale, the three most sources of stress in this study were workload, death and dying and uncertainty concerning treatment respectively. The least source of stress sub scale was patient and their family with average mean 2.25 (Table 1).

**Table 1.** The response of nurses to the sub scale of ENSS, East Gojjam Zone Public Hospitals, Ethiopia, 2016(n=178).

Subscales	Never Stressful	Slightly Stressful	Moderately Stressful	Very much Stressful	Mean
	N (%)	N (%)	N (%)	N (%)	
Death and dying	4(2.2)	14(7.9)	90(50.6)	70(39.3)	2.99
Inadequate emotional preparation	8(4.5)	106(59.6)	0	64(36.0)	2.83
Uncertainty concerning treatment	4(2.2)	11(6.2)	93(52.2)	70(39.3)	2.92
workload	5(2.8%)	3(1.7%)	65(36.5%)	105(59%)	3.28
Conflict with physician	8(4.5)	37(20.8)	89(50.0)	44(24.7)	2.61
Problems with peers	7(3.9)	147(82.6)	0	24(13.5)	2.40
Problems with supervisors	4(2.2)	29(16.3)	102(57.3)	43(24.2)	2.64
Patient and their family	9(5.1)	72(40.4)	70(39.3)	27(15.2)	2.25

**Figure 1.** Overall level of occupational stress among nurses in East Gojjam Zone Public Hospitals, Ethiopia, 2016(n=178).

From 178 study participants 102(57.3%) of nurses were occupationally stressful (Figure 1).

#### Factors Associated with Occupational Stress

By adjusting potential confounders in multivariate backward logistic regression analysis sex of respondents and work experience were found to be significantly associated with occupational stress at  $p < 0.05$  (Table 2).

**Table 2.** Bivariate and multivariate binary logistic regression of factors associated with occupational stress of nurses in East Gojjam Zone Public Hospitals, Ethiopia, 2016 (N=178).

Variables		Occupational Stress		COR (95.0% C. I)	AOR (95.0% C. I)
		Yes N (%)	No N (%)		
Sex	Male	45(44.1)	57(55.9)	1.000	1.000
	Female	57(75.0)	19(25.0)	3.8(1.984-7.278)	5.402 (2.599-11.228)*
Age	≤25 years	35(70)	15(30)	1.000	1.000
	26-30 years	51(55.4)	41(44.6)	0.533 (0.257-1.108)	0.923 (0.376-2.266)
	>30 years	16(44.4)	20(55.6)	0.343 (0.140-0.838)	1.458 (0.350-6.068)
Work experience	<5 years	62(69.7)	27(30.3)	1.000	1.000
	5-10 years	33(47.8)	36(52.2)	0.399 (0.208-0.768)	0.259 (0.122-0.546)*
	>10 years	7(35.0)	13(65.0)	0.234 (0.084-0.653)	0.174 (0.056-0.536)*

COR=Crude Odds Ratio, AOR=Adjusted Odds Ratio, 1=Reference, \*Significant at  $p$ -value  $< 0.05$ , C. I=Confidence Interval

Overall occupational stress was significantly and positively correlated with each stress subscale. The most strong correlation was between uncertainty concerning treatment and overall occupational stress with correlation coefficient ( $r_s=0.665$ ) and others were moderately correlated (Table 3).

**Table 3.** Spearman correlation between overall occupational stress and subscales of stress at East Gojjam zone public hospitals, 2016.

	1	2	3	4	5	6	7	8	9
1	1.000								
2	.576**	1.000							
3	.549**	.294**	1.000						
4	.497**	.267**	.390**	1.000					
5	.514**	.324**	.412**	.287**	1.000				
6	.525**	.436**	.381**	.272**	.413**	1.000			
7	.575**	.341**	.232**	.255**	.206**	.229**	1.000		
8	.665**	.523**	.388**	.437**	.412**	.338**	.443**	1.000	
9	.397**	.243**	.245**	.262**	.322**	.128	.180*	.362**	1.000

\*\*Correlation is significant at the 0.01 level (2-tailed); \*Correlation is significant at the 0.05 level (2-tailed); 1: Over all occupational stress; 2: death and dying; 3: conflict with physician; 4: inadequate emotional preparation; 5: problems with peers; 6: problems with supervisors; 7: workload; 8: uncertainty concerning treatment; 9: patient and family

## 4. Discussion

This cross-sectional study revealed that the overall prevalence rate of occupational stress of this study was low (57.3%) compared to the previous study conducted on occupational stress amongst nurses from two tertiary care Hospitals in Delhi India from 87 nurses prevalence of stress among nurses was (87.4%) [14]. This difference might be due to relative small sample size in previous study and the tool difference. The current finding was high compared with study done in Isfahan, Iran (34.9%) of nurses reported their job was very or extremely stressful [18]. The difference might be the tool difference. It was also high compared with study in Addis Ababa Ethiopia the prevalence of stress among nurses was (37.8 %) [16]. This might be due to the fact that in this study the sample size was relatively small compared with that study done in Addis Ababa.

Descriptive analysis indicated that “workload” was the most and first source of stress for nurses. This was consistent with different studies in different countries. For example a study in Nepal showed that the first identified stressor among nurses was workload [19]. In Indonesia the major sources of stress was workload [20]. In Pakistan showed that the potent factors which cause enormous stress at work place among nurses was, excessive workload [21]. In educational hospitals in Ahwaz, Iran showed that the major sources of occupational stress among nurses was work load [22]. In Gombe state, Nigeria the first leading source of stress was workload [23]. And in Ethiopia, Addis Ababa public hospital among nurses showed that the most and first frequently reported sources of stress at the workplace was workload [16]. The possible explanation for this might be in most cases nurses were involved not only nursing activities but also other non-nursing activities and the other reason might be due to shortage of nursing staff as it was reported in this finding.

The second source of occupational stress in this study was death and dying subscale. It was consistent with other studies [23–27]. The possible explanation might be due to cultural and humanitarian compassionate of the study participants as it is emotional issues regarding patient’s death and dying.

In this study many of the socio-demographic variables were not significantly associated with over all occupational stress. This might be the tool used strength. Only sex and work experience were significantly associated with over all occupational stress in multivariate logistic regression.

Accordingly female nurses were 5.4 times more likely stressful than male nurses and significantly associated with occupational stress (AOD=5.402[2.599-11.228]). This finding was consistent with study done in Addis Ababa public hospitals, in India and Iran in which female nurses were more stressed than males nurse [16, 28, 29]. This might be females, most of the time they had multiple roles in the family and society in addition to the work. More over females in their nature might be compassion than males. But this finding was contradict with the findings in Iran, female nurses had 21% lower stress than male nurses [30]. This difference might be cultural and tool used difference.

Related with work experience those nurses who have had 5-10 years’ experience were 74.1% less likely stressful than those nurses who have had less than 5 years’ work experience and significantly associated with occupational stress (AOD=0.259[0.122-0.546]). And those nurses who have had greater than 10 work experience were 82.6% less likely stressful than those nurses who have had less than 5 years’ work experience and significantly associated with occupational stress (AOD=0.174[0.056-0.536]) This result was consistent with a study in Iran in which nurses with higher experience showed lower stress level than the nurses with one to five years of experience [30]. In general less year experienced nurses were more stressed. This might be nurses greater than 10 years’ experience had adapted with stressors through time and developed tolerance of the stressful situation. However this result was inconsistent compared with a study in Addis Ababa [16], where no significance association was found between occupational stress and work experience. This might be organizational difference.

Marital status was not significantly associated with occupational stress and this was consistent with other studies [14, 31]. But it was inconsistent in another study in India and Iran [18, 30, 32], where married nurses were mores stressed than single nurses.

## 5. Strengths and Limitations of the Study

### 5.1. Strengths of the Study

- a. The four public hospitals were included to make the study representative.
- b. This study is the first in its kind in the study area and could generate new ideas about the sources of stress among nurses for further studies.

### 5.2. Limitations of the Study

- a. The study was through questionnaire only so it might be subjected to response set bias from the respondents.
- b. Since it was cross sectional study design it is difficult to draw causal relationships.

## 6. Conclusion

In this cross sectional study more than half of the nurses were occupationally stressful. Individual factors like sex of respondents and work experience were significantly associated with overall occupational stress score. Psychological factors (death and dying, inadequate emotional preparation and uncertainty concerning treatment); physical factor (workload) and social factors (conflict with physician, problems with peers, problems with supervisors and patient and family) had positive significant correlation with overall occupational stress among nurses. Physical factor (work load) was the main sources of stress among nurses. The least stressful sub scale was patient and their family.

## Recommendation

Based on the findings of the study the following were recommended:

- a. The Amhara Regional Health Bureau should have a collaboration with policy makers to develop stress reduction management programs for hospital based nurses. More over trainings, seminars and workshops should be given for hospital based nurses related with stress reduction management program.
- b. Within the study Hospitals more nurses should be recruited to reduce nurse's workload and trainings and seminars related with stress should be organized.
- c. More studies should be conducted on a larger scale in a nationwide to identify sources of occupational stress.

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