

Occupational Stress and Associated Factors Among Nurses in Workers in Western Wollega Hospitals, Oromia Region, West Ethiopia

Dejene Hailu*, Mathewos Mekonnen & Bikila Tesfa

Department of Nursing, College of Health Sciences, Salale University, Fiche, Ethiopia

***Correspondence to:** Dr. Dejene Hailu, Department of Nursing, College of Health Sciences, Salale University, Fiche, Ethiopia.

Copyright

© 2020 Dr. Dejene Hailu, *et al.* This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 30 May 2020

Published: 12 June 2020

Keywords: *Nurse; Stress; Occupational Stress; West Wollega*

Abstract

Background

Occupational stress causes physiological and behavioral disturbances ranging from immune system dysfunction to psychiatric disorders which have been associated with increased risk to physical and mental health, and decreased work ability and life quality of the employees leading to low job satisfaction, lower levels of performance and productivity and organizational efficiency. Sources of stress for nurses have been described as many and varied.

Objective

To assess occupational stress and associated factors among nurses in western Wollega hospitals.

Methods

A hospital based cross-sectional study design with quantitative and qualitative methods in west Wollega hospitals from February 15-March 15, 2012. A total of 178 nurses were involved in quantitative data collection. And also 13 nurses were interviewed using interview guide. Finally quantitative data were analyzed using SPSS for windows version 16.0 through descriptive statistics, and multiple logistic regression methods.

Results

A total of 178 nurses were enrolled with the response rate 93.6%, majority 96(53.9%) were female, 62(34.8%) were found in age range 41 and 50 years. Out of the total respondent about 53(29.8%) of the nurses had occupational stress. occupational stress among nurses was significantly associated with age of the respondents in which whose age range between 41-50 years were 73.3 % less likely to have occupational stress compared to those age group less than 30 years (**AOR/95%CI =0.27/ 0.109- 0.654**), Nurses who were working for more than 40hours in a week are 3times more likely to have occupational stress as compared to nurses who were working for less than to 40hours per week and there is also significance association between nurses working in private and public hospitals in which those who were working in public hospitals are 3times more likely to have occupational stress.

Conclusion and Recommendations

Occupational stress among nurses working in west Wollega hospitals and it is significantly associated with socio-demographic factors (age,) and type of hospital (public and private) and working hours. Administrative bodies of west Wollega hospitals, OHB and west Wollega zonal department are recommended to design mechanisms to minimize working hour per week.

Introduction

Background

Occupational stress is a recognized problem of all professions including health care workers and part of everyday life for health professionals such as nurses, physicians, and hospital administrators since their main responsibility focuses upon providing help to patients who are usually encountering life crises [1]. Occupational stress is defined as harmful physical and emotional responses that occur when the requirements of a job do not match the capabilities, resources, or needs of the worker and can lead to poor health and even injury [2]. Nursing has been identified as an occupation that has high levels of stress [3]. In an investigation conducted by the National Institute for Occupational Safety and Health in the USA, nurses were found to be one of the occupations that had a higher than expected incidence of stress related health disorders [4] and generally perceived as a stressful and demanding profession [5]. Nursing is an occupation characterized by a number of features not experienced in most other professions. These include not only dealing with situations

involving death and dying (on a regular basis), but also more 'mundane' stressors such as working long hours, and working shifts and weekends. There is substantial evidence that nursing is a stressful occupation, which can lead to disruptions in both psychological and physical health and can impair professional practice [6].

Stress, up to a certain point, will improve people's performance and quality of life because it is healthy and essential that they should experience challenges within their lives [7], but if pressure becomes excessive, it loses its beneficial effect and becomes harmful [8].

Nowadays there is increasing recognition of the problem posed by occupational stress especially on nurses [9] excessive occupational stress has been associated with increased risk to physical and mental health, and decreased work ability and life quality of the employee. Nurses directly confront severe illness and death, and nursing is considered a highly stressful occupation compared with other professions. Results from previous studies suggest that occupational stress among nurses is the result of exposure to a combination of factors related to the working environment and personal factors. These factors are believed to be demographic characteristics, working situations, occupational roles [10].

Occupational stress in nursing was first assessed in 1960 by Menzies and that nurse's role has long been regarded as stress-filled based upon the physical labor, human suffering, work hours, staffing, and interpersonal relationships that are central to the work nurses do. Since the mid-1980s, however, nurses' work stress may be rising due to the increasing continuing rises in patient population serviced and working conditions [6,10].

Many researchers have focused on the causes and effects of work related stress among nurses because of the reason that nurses work in high-stress environments and their responsibility focuses upon providing help to patients who are usually encountering life crisis [11].

To sum up, many literatures seem to indicate that nurses generally experience a considerable amount of stress at work, which, in turn causes substantial costs at the individual and organizational levels.

Statement of the Problem

Occupational stress is known to be one of the major work-related health problems and one of the many problems facing employees in today's society. Increasingly, data is available to show that the nursing profession is particularly stressful as global problem. It has been associated with a variety of adverse attitudinal, behavioral, physical and emotional health consequences [12].

Occupational stress is a major problem for both individual employees and organizations, and can lead to burnout, illness, labor turnover, absenteeism, poor morale and reduced efficiency and performance [13].

Occupational stress particularly in the nursing profession has become a major problem in recent years: hospital nurses have been reported to be exposed to a high level of work stressors. Studies have revealed that nurses are under the greatest work stress and the highest physical and psychological strain among other health care professionals. Occupational stress has been implicated as a major contributing factor to growing job dissatisfaction, rapid turnover, and high attrition rates among nursing profession [11-12].

Projections show a shift by 2020 from infectious diseases to neuropsychological disorders. Neurological and psychiatric conditions could increase their share of the total global disease burden by almost 50%, from 10.5% to almost 15%. Nurses with different socio-demographic status will handle work demands differently. A survey conducted in the USA among adults aged 25 to 74 years, showed that increasing age is directly proportional to the level of stress. A Study among 717 nurses revealed that nurses in their 30's are more stressful than the other age-groups. This occurred since they are not skillful in coping than the older groups [14].

Occupational stress in nursing is continually associated with impaired organizational efficiency, high staff turnover, sickness absence and occupational accident rates, poor practice quality and increased health care costs and reduced job satisfaction. The effects of stress on nurses are numerous including: absenteeism, somatic complaints, coronary artery disease, alcoholism a drain on professional expertise and attempted suicide. Reviewing the literature on nurse occupational stress, it can be seen that all groups of nurses are affected by the stress phenomenon, hospice nurses, renal nurses, theatre nurses, student nurses. Furthermore, nurse stress is implicated in the increased incidence of psychiatric consultations sought by nurses and increased [15].

Stress is recognized as an inherent feature of the work life of nurses, and growing evidence suggest that it may be increasing in severity. It was found that job stress impacts not only on nurses' health but also their abilities to cope with job demands. This will seriously impair the provision of quality care and the efficacy of health service delivery to the final of employee withdrawal and reduced job performance [16].

Although many researches carried out relating to occupational stress in nurses but nothing has been written about occupational stress among nurses in Ethiopia and specifically in study area. The objective of this study was therefore, aimed to determine the level of occupational stress and identify factors among nurses working in West Wellega Zone Hospitals, Oromiya region.

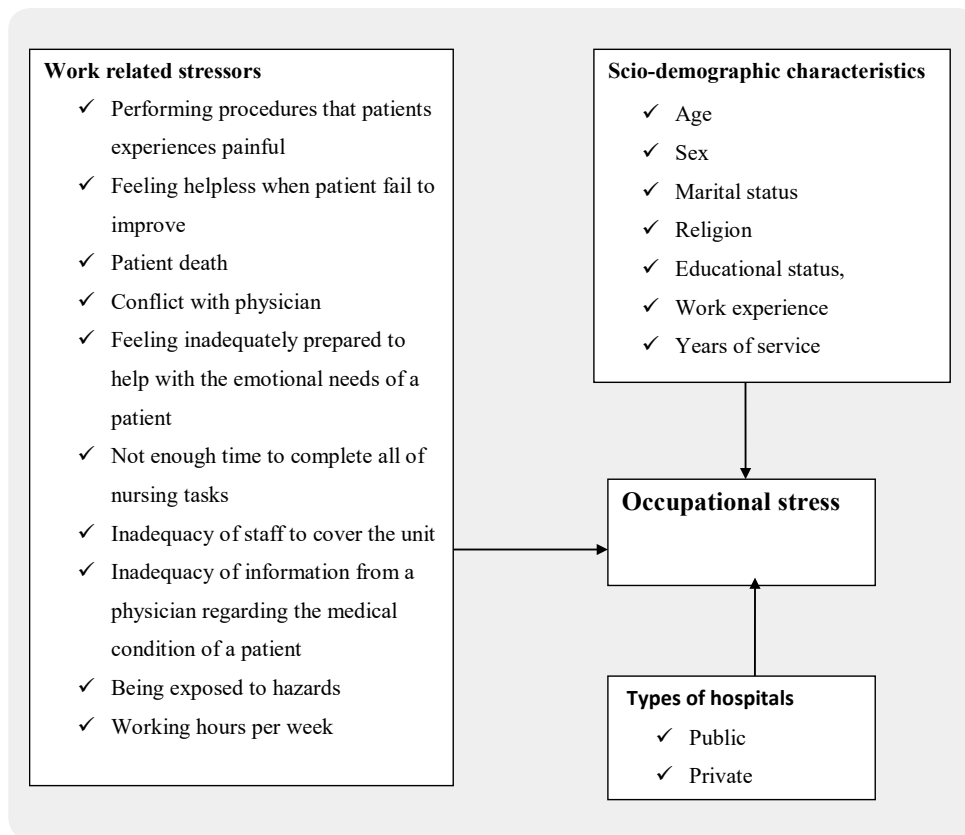


Figure 1: *Conceptual frame work for occupational stress among nurses*

This conceptual frame work was adapted from other study conducted in Canada [17].

Objective of the Study

General Objective

To assess occupational stress and associated factors among nurses in Western Wellega Hospitals, Oromia Region, West Ethiopia, February 15-March 15, 2012.

Specific Objective

1. To determine level of occupational stress among nurses working in Western Wellega Hospitals, Oromiya Region, West Ethiopia
2. To identify factors associated with occupational stress among nurses working in Western Wellega Hospitals, Oromiya Region, West Ethiopia

Methods and Materials

Study Area and Period

The study was conducted in Western Wollega hospitals (Ayira, Begi, Gimbi Adventist, Gimbi public and Nejo hospitals), from February 15 to March 15, 2012. Ayira hospital is found in West Wellega, in Ayira town and, 75km from Gimbi, 520km far from Addis Ababa. This hospital was established by Ethiopian Evangelical Church Mekane Yesus (EVCMY) in 1955. There are 80 beds and 65 health workers among them 44 nurses are working currently.

Begi hospital is located in Begi Town which is found in West Wellega 280km from Gimbi and 721km from Addis Ababa. There are 53 health workers including 35 nurses.

Gimbi Adventist Hospital is located in West Ethiopia, west Wellega in Gimbi town and was established in 1947 and has 42 nurses.

Gimbi public Hospital is also located at west Wellega in Gimbi town around 441km far from capital city Addis Ababa. This hospital was established in 2009 and comprises of 36 nurses and has 60 health professionals of different categories

Nejo hospital is located in Nejo town which is located 74km from Gimbi, 515km from capital city Addis Ababa There are 46 nurses among total of 78 health workers that are currently working in the hospital. In general, there are a total of 203 nurses in the three hospitals and all hospitals had similar characteristics in terms of clinical service provided types of patients seen bed capacity to staff strength.

Study Design

A facility based cross-sectional study was conducted

Population

Source Population

All Nurses who are working in western Wellega zone hospitals

Study Population

All nurses working in west Wollega hospitals and who holder of diploma and above

Inclusion and Exclusion Criteria's

Inclusion Criteria

Nurses diploma and above and who had more than 6 months' work experiences

Exclusion Criteria

Nurses who were not on duty or annual leave during data collection period

Sample Size Determination

4.5.1 Sample size determination

For Quantitative

All nurses (190) who fulfill inclusion criteria were involved in the study except head nurses.

For Quantitative

For the in-depth interview, nine head nurses were conveniently selected and involved in the study until saturation of ideas

Measurement and Variables

Data Collection Instrument and Procedure

Self-administered questionnaire adapted and used from the tool prepared previously to measure Depression, Anxiety and Stress (DASS) and also other study conducted in Malaysia [14,18] and others were prepared after reviewing literatures. The questionnaire was prepared initially in English and used without translation since participants were all educated and no problem was occurred during pretest. Data were collected through self-administered questionnaire by six trained data collection facilitator nurses recruited from nearby health centers.

For in-depth interview, semi structured interview guide was prepared and the interview was conducted by principal investigator. The interviews were tape recorded and note were taken by the investigator and one supervisor to catch points.

Study Variables

Independent Variables

Socio-Demographic Characteristics:

Age,

Sex

Marital status

Religion

Educational status

Work experience

Years of service

Type of Hospitals

Public

Private

Work Related Stressors

Performing procedures that patients experiences painful

Feeling helpless when patient fail to improve

Patient death

Conflict with physician

Feeling inadequately prepared to help with the emotional needs of a patient

Not enough time to complete all of my nursing tasks

Inadequacy of staff to cover the unit

Inadequacy of information from a physician regarding the medical condition of a patient

Being exposed to hazards

Working hours per week

Dependent Variable

Occupational stress

Operational Definition

Occupational stress: Occupational stress–Occupational stress was measured by 4likert scale Stress level which contains 14 items where:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time

3 Applied to me very much, or most of the

Interpretation: - from total score of 0-42

Normal =0-14

Mild =15-18

Moderate =19-25

Severe =26-33,

Extremely severe=34+

In this study subjects who scored in the range (0-14) on stress level were referred as **non-stressed**, while nurses who scored 15 and above were said to be **stressed** [14,18].

Data Processing & Analysis

After data collection, each questionnaire was checked for completeness and coded before data entry. Data was entered, cleaned (explored) by using SPSS for windows version 16.0. Different frequency tables, graphs and descriptive summaries were used to describe the study variables. To see the existence of association between dependent and independent variables bivariate analysis was conducted. Then variables that show association with the outcome variable were included in the multivariable logistic regression model and those reveal association with the dependent variable at 95% CI and p-value of <0.05 were considered to be statistically significant and reported. Odds ratio with its p-value and confidence interval were used or reported in each logistic regression analysis. The in-depth interview data were color coded and categorized accordingly then analyzed thematically and triangulated with the quantitative results.

Data Quality Control

Pre-test

Before the actual data collection, the quantitative questionnaire pre-tested in Nekemte hospital on 5% of the total nurses in West Wollega hospitals. For the reliability of the questionnaire, Crombach α coefficient was calculated, and items showed 0.83. The purpose of the pre-testing was to ensure that how the respondents were able to understand the questions and to check the wording, logic and skip order of the questions in a sensible way to the respondents for over all accuracy and consistency.

Data collection facilitators and supervisors have been given training for a day on the methods and approaches of data collection given by the principal investigator. Furthermore, the principal investigator and supervisors gave feedback and correction on daily basis for the facilitators before they deployed to the field and completeness, accuracy, and clarity of the collected was checked carefully. At the end of each data collection day the principal investigator also checked the completeness of filled questionnaires.

Ethical Consideration

Prior to data collection letter of ethical clearance was obtained from Jimma University Ethical Committee. Letter of permission obtained from the Ayira, Begi, GAH, Gimbi public and Nejo hospitals. Study participants were informed that they have a full right not to participate in the study and interrupt filling if not comfortable. But they were also informed that their participation in the study was very important.

Different measures taken to assure the confidentiality of the study subject's response such as writing their names or any identification in the questionnaire was not required.

Results

Socio-Demographic Characteristics

From 190 nurses a total of 178 nurses were involved in the study with the response rate of 93.6% from five Hospitals in West Wellega Zone. Among this 35(19.7%) from Ayira Hospital, 33 (18.5%) Begi Hospital, 36 (20.2%) Gimbi public hospital, 33 (18.5%) Hospital Gimbi Adventist Hospital and 41 (23.0%) were from Nejo Hospital. Of these, three institutions were government-based hospitals (Begi Hospital, Gimbi public Hospital and Nejo Hospital) while two (Ayira Hospital and Gimbi Advantest Hospital) were private-based hospitals.

From the total respondent majority 96(53.9%) were female, 62(34.8%) age between 41 and 50 ,150(84.3%) diploma level and single were 92(51.7%). A majority 151(84.8%) of them were Oromo, 132(74.2%)were protestant in religion and about half (51.1%) of the respondents had less than five years of work experience in nursing (Table1).

Table 1: *Socio-demographic characteristics of nurses in west Wollega, west Ethiopia, 2012*

Variable	Frequency	Percentage
Age		
<30	58	32.5
31-40	52	29.2
41-50	62	34.8
>50	6	3.4
Sex		
Female	96	53.9
Male	82	46.1
Ethnic group		
Oromo	151	84.8
Amhara	13	7.3
Tigre	9	5.1
Gurage	5	2.8

Religion		
Protestant	132	74.2
Orthodox	23	12.9
Muslim	13	7.3
Waaqeffataa	10	5.6
Marital status		
Single	92	51.7
Married	86	48.3
Educational status		
Diploma	150	84.3
B.Sc	28	15.7
Department		
Surgical ward	25	14
Medical ward	34	19.1
ICU	11	6.2
Gynecology and obstetrics	13	7.3
Operation room	9	5.1
MCH	12	6.7
Emergency	11	6.2
Surgical OPD	10	5.6
Pediatric ward	11	6.2
ART clinic	7	3.9
Medical OPD	12	6.7
Pediatric OPD	8	4.5
Ophthalmology	5	2.8
TB clinic	5	2.8
Psychiatry	2	1.1
Dental clinic	3	1.7
Qualification		
Clinical nurse	136	76.4
Midwifery nurse	18	10.1
Public nurse	18	10.1
Ophthalmic nurse	3	1.7
dental nurse	1	0.6

psychiatry nurse	2	1.1
No of nurses in Hospital		
Public	110	61.8
Begi	33	18.5
GPH	36	20.2
Nejo	41	23.0
Private	68	38.2
Ayira	35	19.7
GAH	33	18.5
Working hour		
>40	129	72.5
<40	49	27.5
Night shift		
Yes	63	35.4
No	115	64.6
Work experience		
<5years	90	50.6
5-10years	62	34.8
>10years	26	14.6

5.2 Occupational Stress Among West Wellega Hospital Nurses

Out of the total respondents 53(29.77%) have been experiencing occupational stress (Fig 2) among which about 26 (44.8%) were from age group <30, 14(26.9%) 31-40years, 12(19.4%) 41-50years and only one respondent from age group >50 years accounts. Out nurses with occupational stress about 41(77.3%) were from public hospitals, 12(17.6%) were from the private hospitals, 45(85%) were working >40hrs per week the rest 15% were working less than 40hrs per week (Table 2).

Table 2: Occupational stress among nurses in west Wollega hospitals February 15 –March 15, 2012

Variables	Occupational stress	
	No Stress N (%)	Stress N (%)
Age		
<30	32(55.2)	26(44.8)
31-40	38(73.1)	14(26.9)
41-50	50(80.6)	12(19.4)

>=51	5(83.3)	1(16.7)
Sex		
Male	55(67.1)	27(32.9)
Female	70(72.9)	26(27.1)
Marital status		
Single	61(66.3)	31(33.7)
Married	64(74.4)	22(25.6)
Educational status		
Diploma	98(69.5)	43(30.5)
B.Sc	27(73.0)	10(27.0)
Work experience		
<5 years	59(65.6)	31(34.4)
5-10 years	43(69.4)	19(30.6)
10+	23(88.5)	3(11.5)
Hospital type		
Public	69(62.7)	41(37.3)
Private	56(82.4)	12(17.6)
Working hour		
<=40	41(83.7)	8(16.3)
>40	84(65.1)	45(34.9)
Night shift working		
A. Yes	45(36%)	18(34%)
B. No	80(64%)	35(66%)

Magnitude of Occupational Stress Among Nurses in West Wollega Hospitals

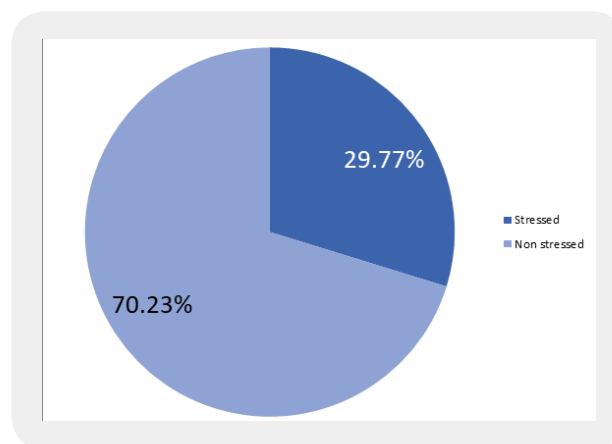


Figure 2: Magnitude of occupational stress among nurses working in west Wollega hospitals February15-March15, 2012

Level of Occupational Stress Among West Wollega Hospitals

From the result 31(58.5)% respondents were having mild, 20(37.7%) having moderate and 3.77% were having severe occupational stress.

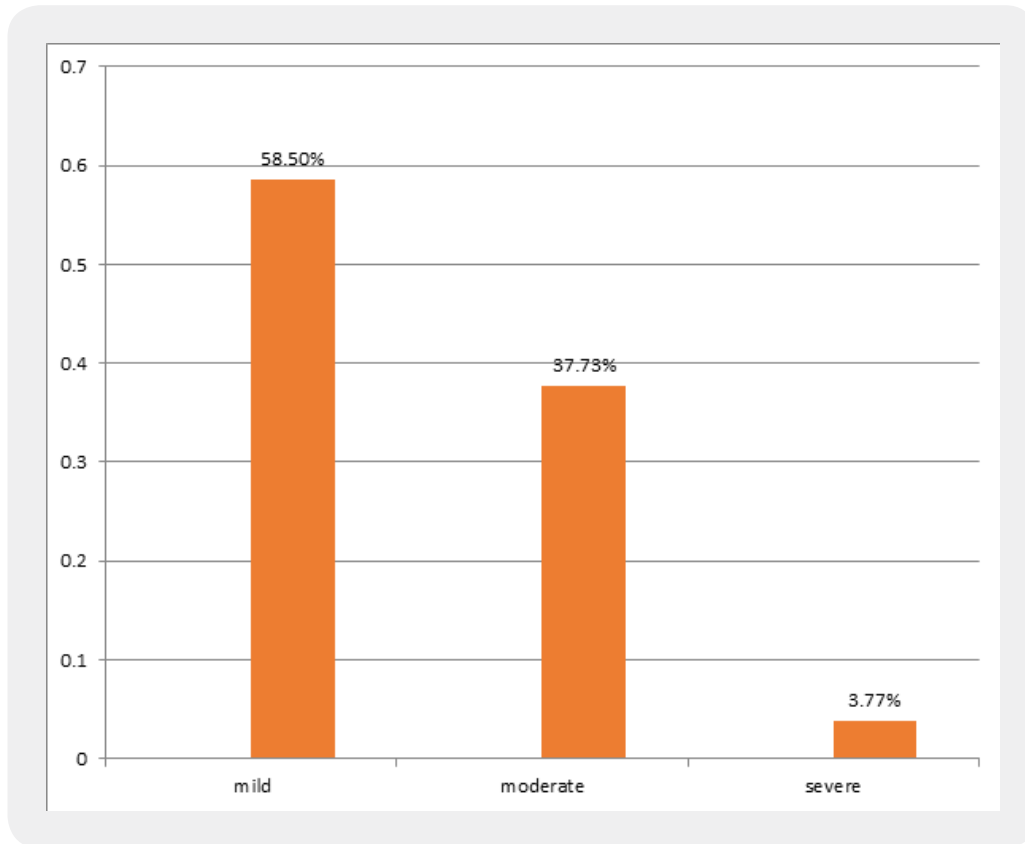


Figure 3: Level of occupational stress in West Wollega hospitals from February 15 -March15, 2012

Table 3: Sources of perceived stressors by nurses in West Wollega Hospitals February 15-March 15, 2012(n=178)

Stressor	Yes (%)	No (%)
Performing procedures that patients experiences painful	116(65.2)	62(34.8)
Feeling helpless when patient fail to improve	106(59.6)	72(40.4)
Patient death	136(76.4)	42(23.6)
Conflict with physician	80(44.9)	98(55.1)
Feeling inadequately prepared to help with the emotional needs of a patient	87(48.9)	91(51.1)
Not enough time to complete all of my nursing tasks	88(49.4)	90(50.6)

Inadequacy of staff to cover the unit	92(51.7)	86(48.3)
Inadequacy of information from a physician regarding the medical condition of a patient	83(46.6)	95(53.4)
Being exposed to health and safety hazards	121(68)	57(32)

As one key informant stated “...in this hospital I face stress in day to day activities even now I am upset and found it difficult to relax, feel become angry,...and factors that contribute to the situation are like, Performing procedures that patients experiences painful, feeling helpless when patient fail to improve and/or die, being exposed to health and safety hazards, lack of opportunity to share experiences and feelings are frequently facing stressors”

The other key informant stated “...most of the time I experiences nervous and feel angry up to state of difficulty to tolerate interruptions. This emotional disturbances followed after conflict with physician on day to day activities of patient care, feeling inadequately prepared to help with the emotional needs of a patient, not enough time to complete all of my nursing tasks and staff inadequacy to cover the unit feeling inadequately trained for what I have to do are the major stress inducing situations”

Factors Associated with Occupational Stress Among Nurses Working in West Wellega Hospitals

Multivariable logistic regression analysis shows that occupational stress among nurses was significantly associated with age of the respondents in which those who in age range between 41-50years were 73.3 % less likely to have occupational stress as compared to those age group less than 30years (**AOR/95%CI =0.27/ 0.109- 0.654**), Nurses who were working for more than 40hours in a week are 3times more likely to have occupational stress as compared to nurses who were working for less than equal to 40hours per week (**AOR/95%CI =3/1.22- 7.74**) and there is also significance association between nurses working in private and public hospitals in which those who were working in public hospitals are 3times more likely to have occupational stress as compared to their private counterpart (**AOR/95%CI =3/1.44- 7.24**).

Table 4: Logistic regression analysis of factors associated with occupational stress among nurses working in west Wellega Hospitals western Ethiopia, February - March 2012

Factors		COR/95%CI/P	AOR/95%CI/P
Age	<30	1	
	31-40	0.453/0.203-1.01/0.053	
	41-50	0.3/0.13-0.67/ 0.003	0.27(0.12-0.65/0.004
	>50	0.246/0.27-2.24/0.213	
Hospital type	Private	1	
	Public	2.77/1.33-5.78/0.005	3.23(1.44- 7.23/0.004
Working hour	<=40	1	
	>40	2.74/1.19-6.36/0.018	3.1/1.24- 7.74/0.016

Death of patient	Yes	0.32/0.12-0.80/0.015	
	No	1	
Being exposed to hazards	Yes	1	
	No	0.39/0.18-0.84/0.016	

Discussion

The results indicated that among nurses in West Wellega hospitals (N=190), 29.7% of them were having occupational stress, which is consistent with the study conducted in Hong Kong which was 27% [4].

Among nurses who were experiencing occupational stress most of the respondents (58.5%) were found to have mild occupational stress and 37.7% were having moderate stress. This result was inconsistent with study conducted in Malaysia in which 13.6% respondents were having mild stress and (5.5%) were in moderate occupational stress level. This difference may be due to the reason that the study in Malaysia was done on in-patient ward nurses only from which those nurses may face only selected stressors.

In the present study, the younger age groups less than 30 years' experience occupational stress which accommodates half of the total age groups. The study conducted in Taiwan in which young public health nurses and those with less experience perceived more occupational stress than older nurses support this finding [19]. The other study done by I Lee Hsiu-Hung Wang in two Taiwan cities Taipei City and Kaohsiung, among public health nurses revealed that younger nurses were more likely to have occupational stress [20]. The effect of age on occupational stress was compatible with the finding of the 2001 Taiwan national survey in which perceived stress was highest in the working population aged 25-35, and decreased in the increasing age [21]. This may be due to less adaptation of young nurses to the work environment and nature of the profession.

Nurses working in private hospitals were found less likely stressed when compared with nurses working in governmental hospitals which is consistent with the study conducted in Uganda, Kampala that public hospital had the highest mean score of occupational stress than private hospitals [22] also supported by a study done in Thailand where nurses in the public hospitals had more stress than those in private hospitals [23]. Although no study comparing the public and private hospitals has been conducted in Ethiopia, this may be an indication that there are differences in organizational support issues between the public and private may be contributing factors for organizational difference in stress magnitude.

Similarly, respondents those working more than forty hours per week were more likely stressed than respondents working less than forty hours per week. This reveals that working for long time out of the regular time given causes stress to nurses and showing an association between the working hour and stress level. This is supported by the study conducted in psychiatric institutions of Taiwan nurses [24].

Finally, as any cross-sectional study this study has its own Limitations as occupational stress measurement was made based on self-report rather than by physiological biochemical analyses of blood or by physical and mental status assessments. However, the use of validated and well-constructed measurement tool and triangulation is the strength of the study [25–38].

Conclusion

Based on the study the investigator's concluded that considerable occupational stress among nurses working in west Wollega hospitals. The point prevalence of stress among nurses working in west Wollega hospitals is 29.77%. The main factors associated with occupational stress among nurses working in west Wollega hospitals are socio-demographic factors (age,) and type of hospital (public and private) and working hours per weeks.

Competing Interests

All authors declare there is no conflict of interests.

Author's Contribution

Bikila Tesfa initiated the study, contributed to the study design, coordinated the data collection process and analyzed the data. Mathewos Mekonnen contributed to the study design, reviewed survey instruments, participated on data analysis and commented on the manuscript. Dejene Hailu contributed to the study design, survey instrument development, and data analysis and wrote the manuscript. All authors read and approved the final manuscript.

Acknowledgments

We would like to thank all study participants, respondents, and data collectors for their contribution in success of our work.

Bibliography

1. Burbeck, R., Coomber, S., Robinson, S. M. & Todd, C. (2002). Occupational stress in consultants in accident and emergency medicine: a national survey of levels of stress at work. *Emergency Medicine Journal*, 19(3), 234–238.
2. US Department of Health and Human Services (1999). *Stress at work*. Cincinnati, Ohio: NIOSH.
3. Xianyu, Y. & Lambert, V. A. (2006). Investigation of the relationships among workplace stressors, ways of coping, and the mental health of Chinese head nurses. *Nurs Health Science.*, 8(3), 147–155.
4. Lee, J. K. (2003). Job stress, coping and health perceptions of Hong Kong primary care nurses. *Int J Nurs Practices.*, 9(2), 86–91.

5. Gholamzadeh, S., Sharif, F. & Rad, F. D. (2011). Sources of Occupational Stress and Coping Strategies Among Nurses Who Work in Admission and Emergency Departments of Hospitals Related to Shiraz University of Medical Sciences. *IJNMR.*, 16(1), 41-46.
6. Huber, D. (2000). What are the Sources of Stress for Nurses? McCloskey & Grace H. Current Issues in Nursing. 4th ed. luis: Mosby.
7. Tehrani, N. & Ayling, L. (2008). Work-related stress. CIPD Stress at work.
8. Cooper, C. L., Cooper, R. D. & Eaker, L. H. (1988). Living with stress. Harmonsworth: Penguin.
9. Chang, E. M, Hancock, K. M., Johnson. A., Daly, J., *et al.* (2005). Role stress in nurses: review of related factors and strategies for moving forward. *Nursing and Health Sciences*, 7, 57-65.
10. Hui Wu, Tie-Shuang Chi, Li Chen, Lie Wang & Ya-Ping Jin (2010). Occupational stress among hospital nurses: cross-sectional survey. *Journal of Advanced Nursing*, 66(3), 627-634.
11. Tyson, P. D., Pongruengphant, R. & Agarwal, B. (2002). Coping with organisational stress among hospital nurses in southern Ontario. *Int J Nurs Stud.*, 39(4), 453-459.
12. Blegen, M. A. (1993). Nurses' job satisfaction: a meta-analysis of related variables. *Nursing Research*, 42(1), 36-41.
13. Gray-Toft, A. & Anderson, J. G. (1981). Stress among hospital nursing staff: Its causes and effects. *Soc Sci Med.*, 15(5), 639-647.
14. Sharifah Zainiyah, S. Y., Afiq, I. M., Chow, C. Y. & Siti Sara, D. (2011). Stress and its associated factors amongst ward nurses in a public hospital Kuala Lumpur. *Malaysian Journal of Public Health Medicine*, 11(1), 78-85.
15. Tully, A. (2004). Stress, sources of stress and ways of coping among psychiatric nursing students. *Journal of Psychiatric and Mental Health Nursing*, 11, 43-47.
16. Beehr, T. & Newman, J. (1995). Job Stress, Employee Health, and Organizational Effectiveness: A Facet Analysis, Model, and Literature Review. London: Routledge Publishers.
17. Dionne-Proulx, J., R. Pepin, R. (1993). Stress management in the nursing profession. *Journal of Nursing Management*, 1, 75-81.
18. Miller, R. L. (2006). Anxiety and stress in the postpartum: is there more to postnatal distress than depression? *BMC Psychiatry* [Internet].
19. Ming-Chen Yeh & Hui-Mei Huang (2007). Occupational Stress Among Newly-Graduated Nurses: An Exploratory Study 2007.

20. Lee, I. & Hsiu-Hung Wang (2002). Perceived Occupational Stress and Related Factors in Public Health Nurses. *Journal of Nursing Research*, 10(4).
21. Cheng, Y., Guo, Y. L. & Yeh, W. Y. (2001). A national survey of psychosocial job and their implications for health among working people in Taiwan. *Int Arch Occup Env Health*, 74, 495-504.
22. Rose, Nabirye, C., Kathleen Brown, C., Erica Pryor, R. & Elizabeth Maples, H. (2011). Occupational stress, job satisfaction and job performance among hospital nurses in Kampala, Uganda. *Journal of Nursing Management*, 19(6), 760-768.
23. Aoki, M., Keiwkarnka, B. & Chompikul, J. (2011). Job stress among nurses in public hospitals in Ratchaburi province, Thailand. *Journal of Public Health and Development*, 9(1)
24. Hsiu-Chuan Shen, Yawen Cheng, Perng-Jy Tsai, Su-hsing S Lee & Yueliang Leon Guo (2005). Occupational Stress in Nurses in Psychiatric Institutions in Taiwan. *Journal of Occupational Health*, 47(3), 218-225.
25. Cox, T., Griffiths, A. & Cox, S. (1996). Work-related stress in nursing: Controlling the risk to health. International Labour Office Geneva.
26. Mojinyinola, J. K. (2006). Effects of Job Stress on Health, Personal and Work Behaviour of Nurses in Public Hospitals in Ibadan Metropolis. *Ethno-Med*.
27. Evans, L. (2002). An exploration of district nurses' perception of occupational stress. *The British Journal of Nursing*, 11(8), 576-585.
28. HO, C. S. (2009). Analysis of Occupational Stressors of Public Health Nurses in Taiwan. C. S. Ho. *Asian Journal of Health and Information Sciences*, 4(2-3), 93-102.
29. Liu, W. W., Lin, S. H. & Pan, F. C. (2010). Job Stressors and Coping Mechanisms among Emergency Department Nurses in the Armed Force Hospitals of Taiwan. *International Journal of Human and Social Sciences*, 5(10).
30. Gholamzadeh, S., Sharif, F. & Rad, F. D. (2011). Sources of occupational stress and coping strategies among nurses who are working in Admission and Emergency Department in Hospitals affiliated to Shiraz University of Medical Sciences. 16(1), 41-46.
31. (1995). Attitudes of nurses towards 8-h and 12-h shift systems. *Work Stress*, 9, 134-139.
32. Sveinsdottir, H., Biering, P. & Ramel, A. (2006). Occupational stress, job satisfaction, and working environment among Icelandic nurses: A cross-sectional questionnaire survey International. *Journal of Nursing Studies*, 43(7), 875-889.

-
33. White, L. (2000). *Foundations of Nursing: Caring for the Whole Person*. USA: Georgia, Cengage Learning Press.
 34. Callaghan, P., Tak-Ying, S. A. & Wyatt, P. A. (2000). Factors related to stress and coping among Chinese in Hong Kong. *J Adv Nurs.*, 31(6), 1518-1527.
 35. Lee, I. & Wang, H. (2002). Perceived occupational stress and related factors in public health nurses. *The Journal of Nursing Research*, 10(4), 253-259.
 36. Kirkcaldy, B. D. & Martin, T. (2000). Job stress and satisfaction among nurses: individual differences. *Stress Medicine*, 16(2), 77-89.
 37. Wynne, R., Clarkin, N. & McNieve, A. (1993). The experience of stress amongst Irish nurses - main report. Work Research Centre, Dublin. Ireland: Nursing research Institution.
 38. Cheng, Y., Guo, Y. L. & Yeh, W. Y. (2001). A national survey of psychosocial job stressors and their implications for health among working people in Taiwan. *Int Arch Occup Env Health.*, 74(7), 495-504.