

**JOB RELATED STRESS AMONG NURSES WORKING IN JIMMA
ZONE PUBLIC HOSPITALS, SOUTH WEST ETHIOPIA**

BY

TADESSE DAGGET TESFAYE (BSc.N)

**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES
OF JIMMA UNIVERSITY IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN
ADULT HEALTH NURSING.**

JUNE, 2014

JIMMA, ETHIOPIA

**JIMMA UNIVERSITY COLLEGE OF PUBLIC HEALTH AND
MEDICAL SCIENCES**

DEPARTMENT OF NURSING

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BY

TADESSE DAGGET TEFAYE (BSc.N)

ADVISORS

PROFESSOR TEFERA BELACHEW (MD, MSc, DLSHTM, PhD)

Mr. ASHAGRE MOLLA (BSc.N, MSc.N)

JUNE, 2014

JIMMA, ETHIOPIA.

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research project and for provision of required progress reports as per terms and conditions of the College of Public Health and Medical sciences in effect at the time of grant is forwarded as the result of this application.

Name of the student: **Tadesse Dagget Tesfaye**

Date._____ **Signature** _____

This thesis has been submitted for examination with my approval as University advisor

APPROVAL OF THE ADVISORS & EXAMINER

Name of the first Advisor: **Professor Tefera Belachew (MD, MSc, DLSHTM, PhD)**

Date._____ **Signature** _____

Name of the Second Advisor: **Ashagre Molla (BSc.N, MSc.N)**

Date._____ **Signature** _____

Name of the Internal Examiner: **Bedilu Deribe (BSc.N, MSc.N)**

Date._____ **Signature** _____

DEDICATION

I dedicated this paper for:

★ *Baba (Dagget Tesfaye Jember) & Mama*

(Angwach Jegine Damte) who live no day for self,

rather all days & all their life for their children,

★ *For My beloved (Hiwote Ahmed Said),*

★ *My family, friends and people whom you share*

me your undue love & support in my life journey.

ABSTRACT

Background: *Unmanaged stress leads to high levels of employee dissatisfaction, illness, absenteeism, high turnover, and decreased productivity which compromise provision of quality service to clients. Nursing, by virtue of its nature, is a profession subjected to high degree of stress. Occupational stress exists in all professions, but nurses appear to experience more stress at work compared to other health care workers. However there is paucity of information on nurses' Job stress in Jimma zone public hospital nurses. Hence this study would contribute its own share through providing home based findings.*

Objective: *To assess job related stress among nurses working in Jimma Zone public hospitals, South-West Ethiopia, 2014.*

Method: *Institution based cross sectional study was conducted from March 10 to April 10, 2014 through census on nurses who are working in Jimma Zone public hospitals using English version structured self-administered questionnaire. IBM SPSS Statistics Version 20 used, the data summarized, organized in tables, graphs and described with percentage mean scores. Independent t-test, ANOVA, linear & multiple regressions used.*

Result: *A total of 341 nurses working in Jimma Zone public hospitals given the questionnaire, response rate was 92.3% (315). This study indicated average overall job related stress level of 58.46 ± 12.62 . One third of nurses had high stress. The highest level of job related stress was on the subscale of dealing with death & dying with percentage mean score of 62.94 followed by uncertainty regarding patient treatment 57.72 and workload 57.6. While job related stress from sexual harassment had the lowest percentage mean score of 46.19. Social support & plan-ful problem solving were the most preferred stress management mechanisms while escape-avoidance coping strategy least used.*

Conclusion: *Overall job related stress varies across working unit. Working in chronic illness follow-up clinic, Mutual understanding at work between nurse & physician and Job satisfaction were negatively associated predictors of job related stress. While working in OPD & escape-avoidance coping strategy (mal-adaptive coping approach) were negatively associated predictors of job related stress. Jimma Zone public hospitals managers shall hire adequate number of nurses as well as allocating nurses in the units (departments) with consideration of workload of units.*

Key Words: *Job related stress, Coping strategy, Nurses' stress.*

Acknowledgment

First & foremost I would like to greatly thank God, who gave me those blessed days I lived to work vigilantly.

I deeply appreciate my advisors, Professor Tefera Belachew and Mr. Ashagre Molla for their unceasing advice & support from proposal preparation to the end of thesis writing.

I also thank my friends and instructors for their genuine advice they provide for me throughout my study.

Lastly, but not least I would like to thank Nursing directors, Head nurses, Shift leader, data collectors and nurses of Jimma University Specialized Hospital, Shenan Gibe and Limu Genet Hospitals for their collaboration and participation for conduct of the research.

TABLE OF CONTENTS

Content	Page
ABSTRACT	I
Acknowledgment	II
TABLE OF CONTENTS	III
List of Figures	V
List of Table.....	VI
Acronyms/Abbreviation	VII
CHAPTER ONE: INTRODUCTION.....	1
1.1. Background	1
1.2. Statement of the Problem	3
CHAPTER TWO: LITERATUREREVIEW	5
2.2. Significance of the Study	10
CHAPTER THREE: OBJECTIVES.....	11
3.1. General Objective.....	11
3.2. Specific Objectives	11
CHAPTER FOUR: METHODS & MATERIALS	12
4.1. Study Area and Period.....	12
4.2. Study Design	12
4.3. Population.....	12
4.3.1. Source population	12
4.3.2. Study population.....	12
4.4. Inclusion Criteria.....	13
4.5. Sample Size Determination	13
4.6. Study Variables	13

4.6.1. Independent Variables	13
4.6.2. Dependent Variable	13
4.7. Operational Definitions & Definition of Terms	14
4.8. Data Collection Instrument	16
4.9. Data Collection Personnel	18
4.10. Data Quality Control	18
4.11. Data Processing and Analysis	18
4.12. Ethical Consideration	19
4.13. Dissemination of the Results	20
CHAPTER FIVE: RESULTS	21
CHAPTER SIX: DISCUSSION	39
CHAPTER SEVEN: CONCLUSION & RECOMMENDATION	44
7.1. CONCLUSION	44
7.2. RECOMMENDATIONS	45
References	46
Annexes	50

List of Figures

Figure	Page
Figure 1 Conceptual Framework Developed for Job Stress among Nurse Working in Jimma Zone Public Hospitals 2014.....	9
Figure 2 Bar graph showing the level of job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.	25

List of Table

Table.....	Page
Table 1 The Socio-demographic characteristics among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.....	22
Table 2 Descriptive statistics for job satisfaction among nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.....	23
Table 3 Descriptive statistics for nurse physician communication related factors among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.	24
Table 4 Frequency distribution of each item of Job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.(N=315).....	26
Table 5 Percentage mean score of Job related stress sub scale among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014. (n=315).....	28
Table 6 Frequency distribution of each item of Coping Strategy among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.(N=315).....	29
Table 7 Percentage Mean Score of Coping strategy Sub scales & overall coping approaches among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014. (n=315).....	30
Table 8 Independent Samples test for overall job related stress versus socio-demographic characteristics among Nurse working in Jimma zone public hospitals, 2014.	31
Table 9 Independent Samples test for job related sub scales versus working hospital among Nurse working in Jimma zone public hospitals, 2014.	32
Table 10 Descriptive statistics for respondents overall job related stress score with in working unit/department.	33
Table 11 ANOVA for job related stress subscales score with in working unit/department .	34
Table 12 Bi-variate analysis result of Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.....	36
Table 13 Multi-variable Linear Regression predicting Job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.	37

Acronyms/Abbreviation

ETB	Ethiopian Birr
CSA	Central Statistics Agency
ICU	Intensive Care Unit
JU	Jimma University
JUSH	Jimma University Specialized Hospital
MMSS	McCloskey/Mueller Satisfaction Scale
OPD	Outpatient department
Pt.	Patient
Rx	Treatment
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION

1.1. Background

Nurses play a pivotal role in any health care institution and encompass the largest workforce in any health care institution; they act as direct caregivers who serve a hospital twenty-four hours a day, seven days a week. This gives nurses a unique perspective on both patient care and hospital operations (1). Nurses occupy a particularly interesting position in the provision of health care. Often they are the sole intermediary between the physician and the patient and in the front line of health services (2). Nurses work long hours; 12-hour shifts are common, especially in hospitals, and the job is physically taxing. In addition, nurses deal with human suffering on a daily basis. Nursing requires a high level of vigilance to assure patient safety in an environment that is complex and may even be chaotic. Medical emergencies added to the tension of patient care, and nurses also deal with grief and loss when a patient dies. All of these factors can increase a nurse's stress level and affect nurse health (3).

Stress is often described as a feeling of being overloaded, wound-up tight, tense and worried (4). It is a disruptive condition that occurs in response to adverse influences from the internal or external environments (5). There are two kinds of distress: acute and chronic. Acute Stress is typically intense, flares quickly, and disappears quickly; fight or flight. While chronic stress is the cost of daily living: bills, kids, jobs...this is the stress we tend to ignore or push down. If left uncontrolled this stress affects health, body and immune system (3).

The circumstances that cause stress are referred to as stressors; they vary in duration of occurrence and severity. Stressors are forces within the environment that usually threaten an organism's existence (6).

Some of signs of stress are physical signs (like increased heart rate, chest pains, dry mouth, headaches, muscle aches, stiffness or pain etc.), behavioral signs (like increased smoking, drinking, drug use, yelling, swearing, aggression, changes in eating habits (increase or decrease), changes in sleeping habits (increase or decrease), nervousness (nail biting, fidgeting, pacing etc.), mental signs (such as difficulty concentrating, decreased memory, difficulty making decisions, mind going blank or mind racing, confusion, loss of sense of humor, decreased libido, inattentiveness, bad dreams etc.), and emotional signs (like anxiety, short temper ,frustration, worry, fear, anger, irritability, impatience etc. (7,8).

While coping has been described as any cognitive or behavioral efforts to manage, minimize, or tolerate events that individuals perceive as potentially threatening to their well-being. Coping does not imply success in dealing with situations and coping responses to stressors can also be maladaptive. According to Folkman & Lazarus transactional theories of stress (cited in Mark & Smith 2012), it place emphasis on subjective perceptions of stressors, and individual differences in ways of coping, viewing problems, past experience, personality-type etc. All these may be important in informing and affecting the workplace–individual stress interaction (9). Lazarus and Folkman 1984 identified two forms of coping: problem-focused and emotion- focused. Problem-focused coping strategies are similar to problem-solving tactics. These strategies encompass efforts to define the problem, generate alternative solutions, weigh the costs and benefits of various actions, take actions to change what is changeable, and, if necessary, learn new skills. Emotion-focused coping strategies are directed toward decreasing emotional distress. These tactics include such efforts as distancing, avoiding, selective attention, blaming, minimizing, wishful thinking, venting emotions, seeking social support, exercising, and meditating. Emotion-focused coping is the more common form of coping used when events are not change able (10).

1.2. Statement of the Problem

The working environment is one of the most important resources of occupational stress(11).Stress at work is one of the major psychosocial risks at work. Work related stress is a problem and is of great concern to employees, employers, psychologists and counselors(6).

Nursing, by virtue of its nature, is a profession subjected to high degree of stress(12). Occupational stress exists in all professions, but the nursing profession appears to experience more stress at work compared to other health care workers (11,13,14). Perceived stressful work increases the desire to leave the employer(15). Job stress in the nursing profession has been a global problem with rates of 9.20%-68.0% of nurses suffering from stress being reported in the worldwide literature. The success in delivering quality patient care depends on the efficiency and motivation of the nursing personnel(16,17).Stress is an important part of life, and is a necessary part of coping with everyday challenges. Problems start to occur when the stress response is inappropriate to the size of the challenge. If not managed, high stress levels result in high levels of employee dissatisfaction, illness, absenteeism, high turnover, decreased productivity, and as a result, difficulty in providing quality service to clients (18).Stress contributes to health problems in nurses and decreases their efficiency(19).

The industries with the highest estimated prevalence rate of work-related stress in Great Britain averaged over three years from 2009/10 - 2011/12 were; Human health and social work activities with 2,090 cases per 100, 000 people working in 12 months, education with 1,780 cases per 100,000 people, and public administration and defense with 1,810 cases per 100,000 people working in 12 months. These industries have significantly higher estimated prevalence rates of work-related stress than across all industries averaged over 2009/10 - 2011/12. Particularly, Nurses with 2,730 cases per 100,000 people working in 12 months, teaching and education professionals with 2,340 cases per 100,000 people, and welfare and housing associate professionals with 2,290 per 100, 000 people. which indicates prevalence rate of work-related stress for nurses higher than others(20).

High levels of stress and burnout among nurses has been reported in South Africa researches (21). Job-related stress indicated as major reasons for turnover in South African Nurses (22).

Workplace stress has impact on employee productivity through increased absenteeism and presenteeism; imposing a direct economic cost on employers. Workplace stress on employees has

been linked to a wide range of mental and physical health conditions. High levels of workplace stress can cause: nervousness, tension, strain, anxiety, and depression increase the chances of cardiovascular disease. Workplace stress is costing the Australian economy \$14.81 billion a year which is \$9.69billion due to stress-related presenteeism and \$5.12billion due to stress-related absenteeism. And stress-related presenteeism and absenteeism are directly costing employers \$6.63billion and \$3.48billion which is total of \$10.11 billion a year. 3.2 days per worker are lost each year through workplace stress which is 2.1 & 1.1 days lost per worker per year due to stress-related presenteeism and absenteeism respectively(23).

Jennings stated stress as a significant health problem and has been regarded as an occupational hazard since the mid-1950s(24). As cited in Papageorgiou et al. 2007 the important one who will be harmed due to nurses' stress is the patient. A nurse under stress will care for patients in a cold, indifferent and depersonalized way, with apathy and disappointment. Moreover, it is possible that a nurse under stress withdraws, behaves negatively and has a short-temper, is often absent from work, and performs in a less effective manner comparing to her/his best and she/he has often wishes to quit the profession(25).

Studies have generally linked nurses stress to the following factors: Work overload, time pressure, lack of social support, exposure to infectious diseases, needle stick injuries, exposure to work-related violence or threats, sleep deprivation, role ambiguity and conflict, lack of career development options, dealing with difficult or seriously ill patients & understaffing, (26). According to World Health Organization (WHO) Health Statistics Report of 2013 staffing for Nursing and midwifery personnel per 10, 000 populations globally it is 29.0, through WHO region: African Region, Region of the Americas, South-East Asia Region, European Region, Eastern Mediterranean Region, and Western Pacific Region holds 9.1, 71.5, 9.9, 84.2, 15.9, and 19.5 per 10,000 populations respectively. In Ethiopia health workforce nursing and midwifery personnel are 2.5 per 10,000 populations which is very low when compared to others (27).

There is a growing demand for nurses in 21st century at varied level from health post to specialized referral hospitals for nurses contribution in provision of care, preventive, promotive, and curative aspects though much investigation is done in most developed & some developing countries on stressors, stress and coping strategies among nurses. Despite this fact to the best knowledge of the investigator there is no study about stress and coping strategies among nurses in our country Ethiopia that has 2.5 nurses & midwifery per 10,000 population(27) especially in nurses working in Jimma Zone public hospitals had not yet seriously examined.

CHAPTER TWO: LITERATURE REVIEW

In this paper the terms job stress, work-related stress, and occupational stress are used interchangeably because jobs, work, and occupations are indistinguishable concepts.

A quantitative design survey employed, with a self-administered questionnaire to study occupational stress among hospital nurses in Gaza-Palestine, using study population of the entire cohort of nurses who were working in the 16 hospitals in Gaza (1801 nurses; 985 males) indicated that the most severe occupational stressors were: Not enough staff to adequately cover the unit, Lack of drugs and equipments required for nursing care and Unpredictable staffing and scheduling respectively. The most frequent occupational stressors were: Watching a patient suffers and Lack of drugs and equipments required for nursing care. As subscales, workload and death & dying were the most frequent and severe occupational stressors. Severity of occupational stressors was significantly associated with age, night shifts, specialization and qualifications. Frequency of occupational stressors was significantly associated with hospital type, experience specialization and night shifts (17).

A cross sectional study on Nurses' Perceived Job Related Stress and Job Satisfaction in Amman Private Hospitals through convenience sample of 73 nurses showed the lack of enough staff to adequately cover the unit is the most stressful event perceived by the staff nurses. While by sub scale uncertainty concerning treatment was most stressful. There were no significant statistical differences in perceived job related stress due to gender, age, and working department. However there was significant negative relationship between the perceived job related stress and the job satisfaction of the staff nurses (28).

A study conducted in India on job stress and job satisfaction among nursing personnel through census method incorporating 210 respondents showed that that experienced nurses have more stress when compared to other nurses. Stress score significantly differed across the departments, Nurses working in ICU have more stress when compared to nurses working in other departments (29).

A cross sectional study done in United Arab Emirates on Relationship between nurse's stress and environmental – occupational factors on 216 nurses selected with random convenience sampling method among nurses working in different wards of Al-Zahra hospital showed that

42 ± 6 mean stress level. Nurses level of stress were 44.4% (93 subjects) had low stress level, 55.1% (118 subjects) had moderate stress level, and 0.5% (5 nurses) had stress level. There significant correlation with stress level and job satisfaction and leisure. While there were no significant correlation between stress level and age, gender, marriage status, & number of children(30).

Qualitative and quantitative survey conducted by Loo-See Beh & Leap-Han Loo to investigate the prominent causes and effects of job stress and coping mechanism among nurses in public health services in Hospital A, in the state of Selangor Darul Ehsan, in Malaysia with a total of 185 female nurses' samples selected with simple random sampling. The results indicated that work overload, & conflict within & between groups were always a source of job stress. Centralization; low participation in decision-making were sometimes a source of stress. While conditions that are never sources of stress are rotating work shift and frequent relocation unit of work. Six most preferred coping mechanisms among nurses to reduce stress in the workplace were to have a close friend to confide in, compartmentalize work and home life, hobbies, leisure activities, recreation & turn to prayer or spiritual thoughts, plan instead of responding to pressure, and building work-group norms of cooperation not competition. Coping mechanisms never preferred by nurses by descending order were use of tranquilizers/drugs, leave job for another, and take it out on family or friends. In summary Leap-Han study showed that coping mechanisms among nurses' by descending order were control, social support, escape, and symptom management (2).

A cross sectional study on stress and its associated factors amongst ward nurses in a public hospital Kuala Lumpur conducted using stratified random sampling method among 114 staff nurses from 5 different departments in a public hospital in Kuala Lumpur. This study used self-administered questionnaire, the Depression, Anxiety, and Stress Scale (DASS). The prevalence of stress at the department of Medicine was found to be higher compared to other departments studied. There was also a statistical significant relationship between the prevalence of stress and types of department. The association between prevalence of stress and age, marital status, financial status and working shift were not found to be statistically significant (13).

A cross-sectional study which was conducted to study job stress among nurses in public hospitals in Ratchaburi province, Thailand with 194 nurses showed that slightly over a quarter of the respondents (26.2%) were categorized into the high-risk group for job stress, job stress was found to be significantly associated with workload, work relationships and social support. More than 70% of the respondents thought that their workloads were heavy. It was also found that heavy workloads caused high stress to nurses. Over 60% of respondents thought their work relationships were good. The nurses who thought that they had good relationships at work had lower job stress. The proportion of the subjects who thought that social support was good and thought it was moderate were almost equal, whereas no one thought their social support was poor. The more support they received, the less job stress they experienced (31).

Review done to examination sources and effects of work-related stress in nursing indicated a number of aspects of working life have been linked to stress. Aspects of the work itself can be stressful, namely work overload and role-based factors such as lack of power, role ambiguity, and role conflict. Threats to career development and achievement, including threat of redundancy, being undervalued and unclear promotion prospects are stressful. Stress is associated with reduced efficiency, decreased capacity to perform, a lack of concern for the organization (11).

A cross section study conducted using non probability convenience sampling technique on job stress, coping strategies and the job quality index of nurses working in selected multi-specialty hospitals towards human resource development on 60 nurses revealed that strong negative relation between job stress and coping, i.e. when active coping increases, job stress decreases. Also it indicated that there is a positive relationship between coping strategy and organizational support, and support from the nursing service. Motivation will help to improve the work environment thereby decrease the job stress. In this study 95% of them opt for discussion with their spouse or loved ones and 93.33% of them think for an alternative solution to solve the problem, 93.33% engage themselves in hobbies like reading, listening music, 98.33% try not to show frustration even though it bothers them. 96.66% discuss the problem with colleagues, where as 86.66% of them put the problem aside and 99.33% of them seek help from the superiors. Hence, majority of the nurses expressed the use of active

coping strategies and few use avoidance coping strategies like blame someone else for their problem(8.33%), sleep more than usual(5%), and eat more (1.33%) (16).

An exploratory analytical survey on shift duty and stress coping strategies among nurses in the University College Hospital, Ibadan, aimed at identifying the effect of shift duty and the coping strategies used to adjust to the stress of shift work among nurses working in the University College Hospital, Ibadan in Nigeria with 166 nurses working in various wards selected by a stratified random sampling revealed that shift duty was reported as stressful by 79 (47.6%) of the nurses studied. Stress coping responses of nurses were largely based on planning and active coping. this study indicated a need for establishment of counseling unit within the hospital where nurses or even other health workers could be guided and counseled on positive coping strategies for effective delivery of nursing care to the patients (32).

A cross-sectional study conducted using 150 nurses selected by purposive, non-probability sampling method to study stress and coping strategies amongst registered nurses working in a South African tertiary hospital revealed that registered nurses are stressed. The greatest perceived source of stress appears to be workload followed by emotional issues related to death and dying. Registered nurses seem to be resorting more to positive reappraisal, Planful problem solving and seeking social support (33).

One American Nurses Association study on nurses (cited on Sandra P. Thomas book entitled Transforming Nurses' Stress and Anger) found that sexual harassment as the greater the nurse's distress, the less likely the incident would be reported (34)

A cross sectional study conducted to explore the relationship between occupational stress and organizational commitment among nurses in selected Jordanian hospitals using systematic random sample of 150 nursing personnel reveals that there were a statistical significant occupational stress difference across working unit /department. Most of nurses with highest occupational stress were working in specialized units, while the least were in surgical departments. Organizational commitment is statistically significantly & negatively correlated to occupational stress (35).

Conceptual Framework of the Study

The conceptual frame work was developed after reviewing different literatures by the investigator.

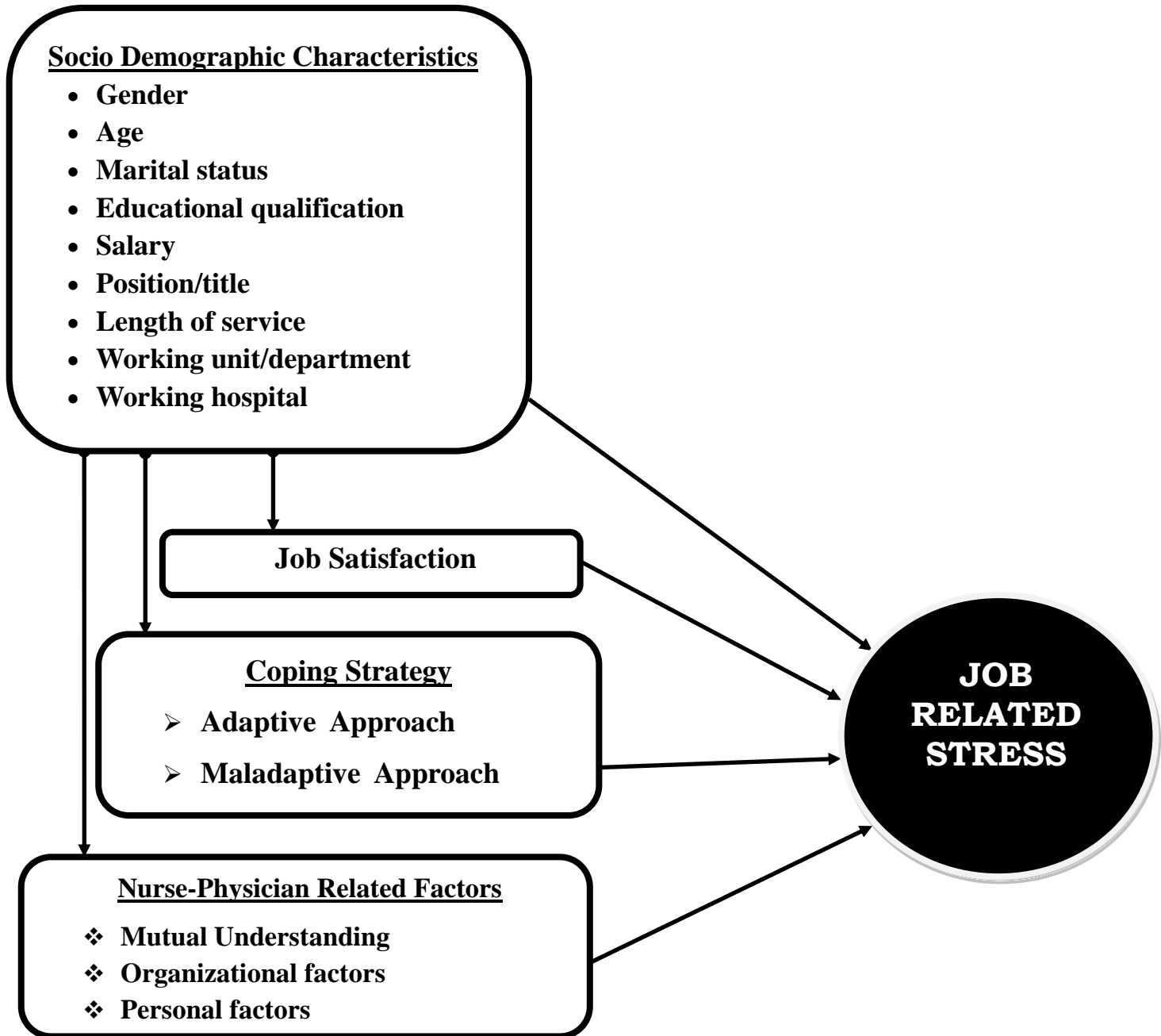


Figure 1 Conceptual Framework Developed for Job Stress among Nurse Working in Jimma Zone Public Hospitals 2014.

2.2. Significance of the Study

This research attempts to identify the major sources of job related stress, and coping mechanism adopted among nurses to reduce job stress in Jimma zone public hospitals.

Several investigations on stress and coping mechanism were done in many developed countries and some African countries. However research on stress issues and on how to overcome it among nurses working in hospital in Ethiopia to the best knowledge of the investigator is still in not studied.

Findings from this study help hospital administrator to design and implement strategies that help nurses to cope job stress effectively that improves the quality of life at work and their excellence in provision of quality care. Hence this study will contribute its own share through providing home based findings especially about Jimma zone public hospital nurses.

Findings will serve as baseline information for further research activities in the area.

CHAPTER THREE: OBJECTIVES

3.1. General Objective

To assess job related stress among nurses working in Jimma Zone public hospitals, South- West Ethiopia, 2014.

3.2. Specific Objectives

1. To determine the level of job related stress among nurses working in Jimma zone public hospitals, South West Ethiopia, 2014.
2. To identify predictors of job related stress among nurses working in Jimma Zone public hospitals, South West Ethiopia, 2014.
3. To describe coping strategies for job related stress among nurses working in Jimma Zone public hospitals, South West Ethiopia, 2014.

CHAPTER FOUR: METHODS & MATERIALS

4.1. Study Area and Period

Jimma is the town of Jimma zone which is one of 18 zone of the Oromia Regional State found at 352 KMs from Addis Ababa, the capital city of Ethiopia, in the South western part of the country. Based on the 2007 Census conducted by the CSA, this Zone has a total population of 2,486,155 of these 1,250,527 are men and 1,235,628 women; with an area of 15,568.58 square kilometers(36).

In this zone there are three public hospitals namely, Jimma University specialized hospital (JUSH), Shenen Gibe and Limu Genet hospital. The first two are situated at Jimma town where as the later one is in Limu town which is 72 km far from Jimma town. There were 433 nurses working in these public hospitals. Except JUSH both are district level. JUSH plays a pivotal role in this zone and it is the only teaching and referral hospital in the southwestern part of the country, and provides specialized clinical services to about 15 million people(37). It provides generalized service to in-patients and out-patients on a referral system in southwest part of the country. The study was conducted from March 10 to April 10, 2014 in three public hospitals found in Jimma Zone, Oromia Regional state.

4.2. Study Design

Institution based cross sectional study was conducted

4.3. Population

4.3.1. Source population

The source population for this study includes all nurses who are working in Jimma Zone Public Hospitals.

4.3.2. Study population

- All nurses who were available at work at Jimma Zone public hospitals during data collection period.

4.4. Inclusion Criteria

- ✓ Nurses who were available at work at the hospital during data collection period
- ✓ Nurses with greater or equal to 6 months of work experience included in the study

4.5. Sample Size Determination

The total population of nurse in the three public hospitals was 433. From these 73 were less than six months of experience and the remaining 360 were greater than six months of experience. Hence, the investigator conducted census.

4.6. Study Variables

4.6.1. Independent Variables

- **Socio-demographic Characteristics:** Age, sex, marital status, educational qualification, position/title, working unit, length of service, working hospital and salary.
- **Job Satisfaction**
- **Coping strategy (adaptive coping, maladaptive coping)**
- **Nurse-Physician Communication Related Factors** (Mutual Understanding , personal factors, & organizational factor)

4.6.2. Dependent Variable

- ★ Job related Stress.

4.7. Operational Definitions & Definition of Terms

Job related stress: Stress experienced by the nurse related to workload, conflict, dealing with death & dying, uncertainty regarding patient treatment, organizational decisions, inadequate preparation, lack of support, and sexual harassment in work place and these subscales have a total of 26 items, their sum score range minimum score of 26 and maximum of 104 which indicates the higher the score the more the nurse stressed. Tertial classification used to categorize low, moderate & high level of stress. Percentage means score calculated for each sub scales to weight their rank.

Coping Strategy: a strategy that helps people to reduce stress and solve problems which is measured through adaptive approach & maladaptive approach sub scales. Percentage means score calculated for each sub scales to weight their rank.

- **Adaptive approach** - attempts to manage or alter the problem causing the stress measured through planful problem solving, symptom management, social support & self controlling and these subscales having a total of 13 items and their sum score range a minimum score of 13 and maximum of 52 which indicates the higher the score the more preferred coping strategy used by the nurse .
- **Maladaptive approach** -attempts to regulate stressful situation through escape-avoidance indicators which are: make plans to change/leave the career, avoid stressful situation, take it out on family or friends, accept the situation and to absentee from work and their sum score range a minimum score of 5 and maximum of 20 which indicates the higher the score the more preferred coping strategy used by the nurse.

Conflict: Disagreement between health care providers particularly between nurse and nurse or nurse and physicians measured through 4 items and their sum ranges from minimum of 4 to maximum of 16 indicating the higher the sum the higher stress from conflict.

Workload: Work burden related to not enough staff to cover the unit, performing too many non-nursing tasks, not enough time to complete nursing tasks. This subscale measured through five items, their sum score range a minimum score of 5 and maximum of 20 indicating the higher the sum score the more the nurse stressed from workload.

Dealing with death & dying: the frequency of participation of a nurse in caring for a patient who suffers, fails to improve & or dying patient that makes stressful measured through 3 items and their sum ranges from minimum of 3 to maximum of 12 indicating the higher the sum the higher stress from dealing with death & dying.

Organizational decisions: Activities deemed to be task of organization like shift rotation, working unit allocation and decision making measured through 3 items and their sum ranges from minimum of 3 to maximum of 12 indicating the higher the sum the higher stress from organizational decisions.

Lack of support: insufficient /inadequate help for nurses'; lack of support of immediate supervisor, absence of opportunity to share experiences and to vent problems in their working unit/department measured through 3 items and their sum ranges from minimum of 3 to maximum of 12 indicating the higher the sum the higher stress from lack of support.

Sexual harassment: Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature in work environment its ranges from minimum of 1 to maximum of 4 indicating the higher the score the higher stress from sexual harassment.

Inadequate preparation: Feeling of insufficiently prepared to help with emotional needs of patient and patient's family measured through 3 items and their sum ranges from minimum of 3 to maximum of 12 indicating the higher the sum the higher stress from inadequate preparation.

Uncertainty regarding patient treatment: Doubt regarding: the medical condition, treatment of a patient, what to do in absence of physician at a medical emergency, what to be told about the patient's condition and its treatment for a patient or a patient's family measured through 4 items and their sum ranges from minimum of 4 to maximum of 12 indicating the higher the sum the higher stress from uncertainty regarding patient treatment.

Job satisfaction: Satisfaction perceived by the nurses about their job which is measured by a 4 point Likert type scale of McCloskey/Mueller Satisfaction Scale having a total of 29 items

and their sum score ranging from a minimum of 29 to maximum of 116. The higher the score, the more satisfied the nurse.

Nurse-Physician Communication Related Factors

- **Personal factor:** A factor that affects nurse physician communication due to negligence of duty, uncooperativeness and poor attitude at work which was measured by 3 items and their sum ranges from minimum of 3 to maximum of 15 indicating the higher the sum the low nurse-physician communication.
- **Organizational factor:** A factor that affects nurse-physician communication/collaboration which arises from organizational constraints measured by 6 items and their sum ranges from minimum of 6 to maximum of 30 indicating the higher the sum the lower nurse-physician communication.

Mutual Understanding: Nurse-physicians listen to each other, discuss, & take into account each other's schedule when making plans to treat a patient together measured by 3 items and their sum ranges from minimum of 3 to maximum of 15 indicating the higher the sum the higher nurse-physician communication.

4.8. Data Collection Instrument

Data were collected using English version structured self-administered questionnaire.

Items of questionnaire developed through adaption from expanded nursing stress scale which was developed by Gray-Toft and Anderson and Revised by Susan E. French, Rhonda Lenton, Vivienne Walters, & John Eyles(38), McCloskey/Mueller Satisfaction Scale (MMSS) and other relevant literatures. It contains six sections that suit the purpose of the study.

Part-I consists of nine demographic questions.

Part-II contains 26 items which help to measure job related stress among nurses. The items are divided into seven major sub scales. They are workload (item 201, 203, 223, 224& 226), lack of support (item 205,207 & 209), conflict (item 202,204,206, & 208), uncertainty regarding patient treatment (item 210, 212, 214, & 216), dealing with death & dying (item 211, 213, & 215), inadequate preparation (item 218,220, & 222), organizational decisions

(item 217, 219& 221) and sexual harassment (item 225). Each of the items is represented by a four-point Likert item. Likert item has options from 1 to 4 where 1 represents “if the condition is never a cause of stress”, 2 “if the condition is sometimes a cause of stress”, 3 “if the condition is frequently a cause of stress” and 4 “if the condition is always a cause of stress”. Respondents asked to indicate how often the causes of job stress stated in questionnaire occurred in their work life. The higher the score, the more the respondent agrees that the situation is stressful. The total stress score that provides the overall levels of stress among nurses obtained by adding all the scores on 26 items together.

Part-III contains eighteen items on coping mechanism used to cope with job stress. The items are divided into five types of coping mechanisms. They are Planful problem solving (item 301, 303, 305, 307, & 309), self-control mechanism (item 302 & 304), social support (item 306, 308, & 310), symptom management mechanism (item 314, 316 & 317) and escape/avoidance mechanism (item 311, 312, 313, 315, & 318). Respondents requested to score each item rated on four-point Likert item with score ranging from 1- 4 where 1 “ I never do this”, 2 “ I sometimes do this”, 3 “I frequently do this” and 4 “I always do this”. To identify coping strategy the total score for adaptive approach obtained by adding all the scores of 13 items and their sum score range a minimum score of 13 and maximum of 52 which indicates the higher the score the preferred coping strategy used by the nurse while for maladaptive approach the score of the 5 items added and their sum score range a minimum score of 5 and maximum of 20 which indicates the higher the score the preferred coping strategy used by the nurse .

Part IV, V & VI are regarding nurse-physician communication related factors; Part IV & V: Personal and organizational factors which was measured through nine items and Part V: Mutual understanding at work that could predict job related stress measured through three items which was adapted from a study conducted in Iran.

Part VI: Job satisfaction measured through the McCloskey/Mueller Satisfaction Scale (MMSS) which has 29 questions.

Questionnaire was pretested on nurses working at Woliso St. Luke Hospital before the start of actual data collection and necessary comments and feedback taken and incorporated. Overall Cronbach’s alpha score for overall stress measuring items 0.84, adaptive coping

measuring items 0.86, maladaptive coping measuring items 0.76, nurse-physician related factors (Organizational factors 0.88, Personal factors 0.92, & Mutual understanding 0.78) and job satisfaction had 0.90.

4.9. Data Collection Personnel

A total of five diploma nurses: three for JUSH, one for Shenen Gibe and one for Limu Genet were recruited to distribute, and to facilitate data collection. They were trained and oriented for one day on the questionnaire and the way of data collection.

4.10. Data Quality Control

The collected data was reviewed and checked for completeness by the facilitator/data collectors and principal investigator. For each shift the questionnaire were distributed after the purpose of the study explained and told to return when they finish.

4.11. Data Processing and Analysis

The data was edited, entered into Epi-Data version 3.1 and exported to IBM SPSS Statistics Version 20 for analysis. The results was summarized and presented by tables, and charts. Percentage, frequency and mean calculated.

For overall job related stress the participant's responses on each item score summed: a stress score ranging from a minimum of 26 and maximum score of 116. The higher the sum the more the stressed the nurse. The level of stress calculated through tertial the lower to low stress, the middle to moderate & the higher to high stress.

For job related stress subscales, the participant's responses on each item of respective sub scale score summed the summed stress score indicate the higher the sum the more the nurse stressed from the sub scale. Subscales mean score converted to percentage mean score.

To identify coping strategy: the total score for adaptive approach obtained by adding all the scores of 13 items and their sum score range a minimum score of 13 and maximum of 52 which indicates the higher the score the preferred coping strategy used by the nurse. While for maladaptive approach the score of the 5 items added and their sum score range a

minimum score of 5 and maximum of 20 which indicates the higher the score the preferred coping strategy used by the nurse.

For coping strategies subscales, the participant's responses on each item of respective subscale score summed to give sub scale score. Subscales mean score converted to percentage mean score .It indicate the higher the score the more the nurse preferred way of coping strategy.

For job satisfaction the participant's responses on each item score summed: a job score ranging from a minimum of 29 and maximum score of 104.Then the overall score of job satisfaction taken as independent variable.

Sum of each Nurse Physician communication related factor (personal factor, organizational factor & mutual understanding) sub scales taken as independent variables independently.

First overall stress scores were compared by independent variables using an independent sample t-test and ANOVA after checking the assumptions. For the purpose of analysis dummy variables created: Working hospital in to referral vs. district, marital status in to single vs. ever married, and title/position in to clinical staff nurse vs. clinical staff managers.

After checking the assumptions bi-variate and multivariable linear regression done to see the association between the predictor and the outcome variables. Predictor variables that had p-value < 0.25 at bi-variate linear regression taken in to multivariable linear regression. β -coefficients were used to show independent predictors of stress. Variable with P-value of less than 0.05 taken as statistical significant.

4.12. Ethical Consideration

Ethical clearance and approval letter to conduct the research was obtained from Jimma University College of public health and Medical sciences, institutional review board. Then a letter was secured from the university to respective hospital management to gain support for the study. Prior to administering the questionnaires, the aims of the study were explained to the participants, also told that participation is voluntarily, confidential and anonymity ensured throughout the execution of the study as participants were not required to disclose

personal information on the questionnaire. Besides verbal consent were obtained from study participants.

4.13. Dissemination of the Results

The final report will be disseminated to the department of nursing, College of public health and medical sciences, Jimma University. Also the study findings will be disseminated to the Jimma University Specialized Hospital, Limu Genet hospital, Shenan Gibe hospital, Jimma zone health office, and other relevant bodies. Attempts will be made to publish the findings in scientific journal.

CHAPTER FIVE: RESULTS

5.1. Socio-demographic characteristics

A total of 341 nurses who are working in three Jimma Zone public hospitals (JUSH, Shenengibe & Limu Genet Hospital) were given to respond to self-administered questionnaire, from these 321 returns the questionnaire, however 6 questionnaires were incomplete hence discarded & 315 used which makes the response rate 92.38% (315). Respondent were 85.7% (270) from JUSH, 6.3% (20) from Shenengibe and 7.9% (25) from Limu Genet hospital.

Minimum age of the respondents were 21 years, mean age 27.95 ± 6.83 years and a maximum of 58 years old. The average length of service of the respondents was 5.17 with a minimum of 8 months to a maximum of 39 years and the average monthly salary was 1857 ETB with minimum of 1233 ETB and maximum 4820 ETB (**Table 1**).

Table 1 The Socio-demographic characteristics among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

		N=315	
		N	%
Hospital	Jimma University Specialized Hospital	270	85.7
	Shenen Gibe Hospital	20	6.3
	Limu Genet Hospital	25	7.9
Gender	Male	160	50.8
	Female	155	49.2
Marital status	Married	136	43.2
	Single	172	54.6
	Divorced	7	2.2
Working Unit/department	Medical ward	54	17.1
	Surgical ward	65	20.6
	Intensive Care Unit (ICU)	10	3.2
	Major Operation room	21	6.7
	Psychiatry	9	2.9
	Pediatrics	45	14.3
	Obstetrics & Gynecology	23	7.3
	Ophthalmology	13	4.1
	Chronic Illness Follow Up Clinic	19	6.0
	OPD	56	17.8
Age	≤ 24 years	103	32.7
	25-29 years	151	47.9
	30-34 years	18	5.7
	≥35 years	43	13.7
Work Experience in Nursing	$\frac{1}{2}$ year - 5 years	243	77.1
	6-10 years	38	12.1
	>10 years	34	10.8
Rank/position	Staff nurse	283	89.8
	Head nurse	27	8.6
	Supervisor nurse	2	0.6
	Matron Nurse	3	1.0
Educational Qualification	Diploma	194	61.6
	BSc.N	121	38.4
Salary	≤ 1427 Birr	119	37.8
	1428-1800 Birr	45	14.3
	1801-2250 Birr	129	41.0
	≥ 2251 Birr	22	7.0

5.2. Job satisfaction score of respondents

Regarding job satisfaction score the minimum score was 29 and the maximum score was 116 while the overall mean of job satisfaction of the study participating nurses in Jimma zone public hospitals in this study was 67.25 ± 13.90 (**Table 2**).

Table 2 Descriptive statistics for job satisfaction among nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

Item	Mean	Std. Dev
Pay (Salary) you receive from your hospital as nurse	1.62	0.87
Annual leave you receive from the hospital	2.32	0.91
Sick leave you receive from the hospital	2.37	0.978
Hours that you work in the hospital	2.51	1.02
Flexibility in scheduling your working hours	2.44	0.939
Your satisfaction in your shift rotation	2.61	0.938
Opportunity for part-time work	2.07	0.991
Flexibility in scheduling your weekends off	2.08	0.994
Compensation for working weekends & Holidays	1.98	0.936
Maternity leave time given by the hospital	2.88	0.92
Recognition from your head nurse for your work	2.6	0.925
Interaction with your nursing peers	3.0	0.849
Interaction with the physicians you work with	2.59	0.924
Availability of medical equipment/supplies to deliver nursing care in your unit.	2.04	0.945
Satisfaction with the nursing care given to your clients	2.89	0.887
Opportunities for social contact with your colleagues after work	2.55	0.888
Opportunities for interact professionally with other disciplines	2.4	0.901
Opportunities for further education/degree or post graduate study in nursing	2.02	1.043
Opportunities to participate in morning rounds	2.41	0.996
Opportunity to make autonomous nursing care decisions	2.47	0.951
Opportunities for on job training/short term training	1.7	0.941
Recognition for your work from supervisors	2.17	0.95
Recognition for your work from your coworkers/peers	2.78	0.898
Encouragement you received from your matron	2.19	1.012
Opportunities to participate in nursing research	1.47	0.762
Opportunities to write and publish	1.29	0.675
Your responsibility in your unit/ward	2.76	0.949
Your control over conditions in your working unit/ward	2.76	0.915
Consideration given to your opinion and suggestions for change in the work setting or office practice	2.49	0.941

5.3. Nurse Physician Communication related factors

Nurse-Physician Communication Related Factors sub scales score: Personal factor subscale had a minimum score of 3 and maximum score of 15 with mean score of 8.94 ± 3.48 . Organizational factor sub scale had a minimum score of 6 and maximum of 30 with mean score of 21.42 ± 5.74 . While mutual understanding sub scale had a minimum score 3 and maximum 15 with mean 8.74 ± 2.93 . (**Table 3**)

Table 3 Descriptive statistics for nurse physician communication related factors among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

Factor	Min	Max	Mean	Std. Dev
Personal factor	3	15	8.94	3.48
Poor attitude to work	1	5	2.97	1.32
Uncooperativeness at work	1	5	2.97	1.32
Negligence of duty	1	5	3.01	1.34
Organizational factors	6	30	21.42	5.74
Differential treating of nurse and physician in the hospital	1	5	3.29	1.30
Absence of forum to discuss the issue of nurse-physician communication in the hospital	1	5	3.62	1.30
Lack of clarity in roles & responsibilities in the hospital	1	5	3.54	1.24
Lack of shared vision in the hospital	1	5	3.62	1.19
Frequent supply shortage in the unit	1	5	3.71	1.19
Malfunctioning of equipment in unit	1	5	3.65	1.22
Mutual understanding Items	3	15	8.74	2.93
The nurse and physicians discuss mechanism to maintain patient safety	1	5	3.07	1.19
The nurse and the physicians take into account each other's schedule when making plans to treat a patient together	1	5	2.79	1.15
Physicians and nurse listen to each other	1	5	3.05	1.13

5.4. Description of Job Stress

The overall job related stress score had minimum total stress score of 28 and maximum of 99 with mean 58.46 ± 12.62 .

Based on data driven tertial rank classification which is lowest score indicates low stress, medium score indicates moderate stress & highest score indicates highest stress; 33.3% (105) of nurses had low stress, 34% (107) of nurses had moderate stress, and 32.7% (103) of nurses had high stress (**Figure 2**).

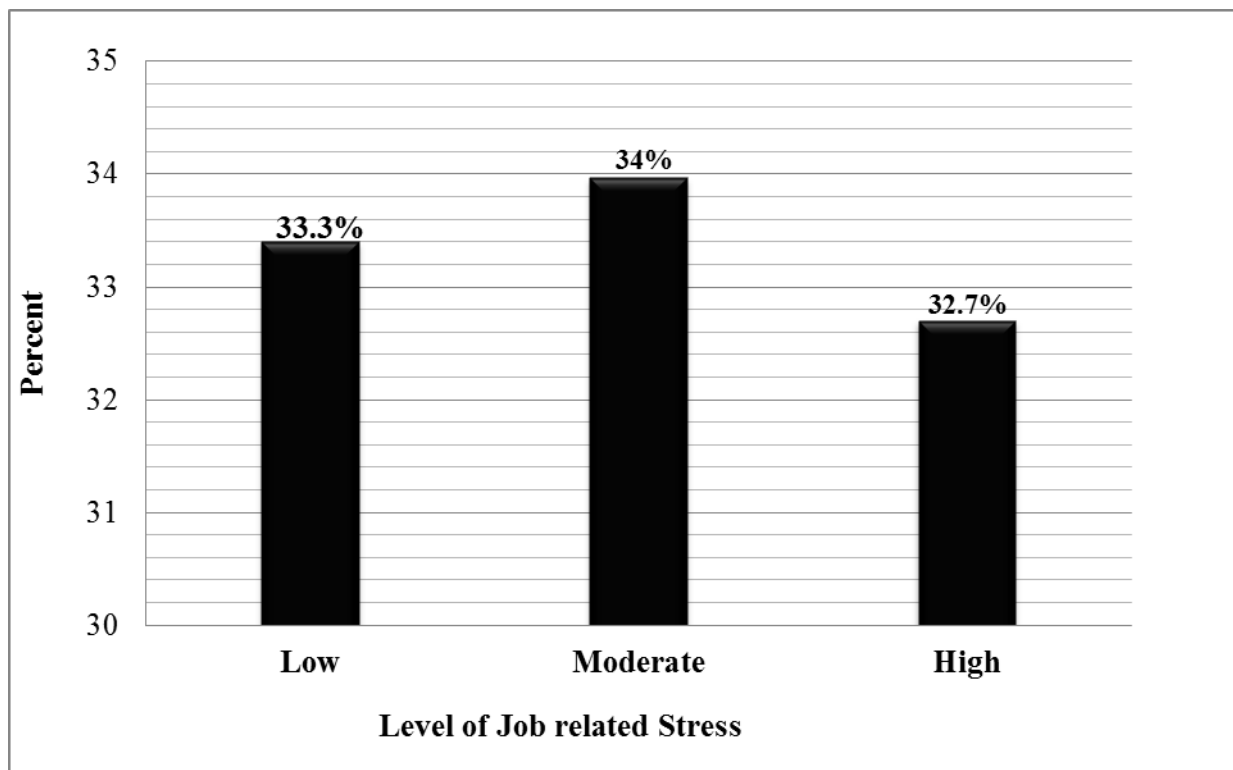


Figure 2 Bar graph showing the level of job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

The most stressful conditions rated among nurses in descending order were: the death of a patient (2.87 ± 1.04), watching a patient suffer (2.61 ± 1.05), Centralization; low participation in decision making (2.51 ± 0.99), a physician not being present in a medical emergency (2.44 ± 1.01).

Not enough staff to adequately cover the unit was frequent stressful condition among 33.3 % (106) of nurses.

The least stressful conditions rated among nurses in descending order were: being sexually harassed/ requests for sexual favors, and other verbal or physical conduct of a sexual nature in work environment (1.85 ± 1.03), difficulty in working with a specific nurse in the unit (1.9 ± 0.94), not enough time to respond to the needs of patients' families (2.06 ± 0.86), feeling as my support is helpless in the case of a patient who fails to improve (2.08 ± 1), and frequent change of unit of work (2.09 ± 0.91) (**Table 4**).

Table 4 Frequency distribution of each item of Job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.(N=315)

Sub scale	How often the condition stated below makes you stressful	Never Stressful		Sometimes Stressful		Frequently Stressful		Always /Very Frequently/ Stressful		Mean	Std. Dev.
		n	%	n	%	n	%	N	%		
Work load	Not enough staff to adequately cover the unit.	39	12.4	113	35.9	106	33.7	57	18.1	2.57	0.926
	Not enough time to complete all of my nursing tasks.	84	26.7	125	39.7	81	25.7	25	7.9	2.15	0.906
	Not enough time to provide emotional support to the patient.	67	21.3	141	44.8	82	26.0	25	7.9	2.21	0.866
	Too many non-nursing tasks required, such as clerical work.	48	15.2	122	38.7	97	30.8	48	15.2	2.46	0.928
	Not enough time to respond to the needs of patients' families.	79	25.1	146	46.3	60	19.0	30	9.5	2.13	0.899
Conflict	Conflict with physician.	83	26.3	142	45.1	54	17.1	36	11.4	2.14	0.94
	Disagreement concerning the treatment of a patient.	85	27.0	144	45.7	59	18.7	27	8.6	2.09	0.89
	Conflict with a nurse supervisor.	103	32.7	111	35.2	54	17.1	47	14.9	2.14	1.04
	Difficulty in working with a specific nurse in the unit.	132	41.9	108	34.3	50	15.9	25	7.9	1.90	0.94

Lack of support	Lack of opportunity to talk openly with other unit personnel about problems in the unit.	70	22.2	101	32.1	88	27.9	56	17.8	2.41	1.023
	Lack of opportunity to share experiences and feelings with other personnel in the unit.	86	27.3	123	39.0	68	21.6	38	12.1	2.18	0.97
	Lack of support of my immediate supervisor.	110	34.9	103	32.7	56	17.8	46	14.6	2.12	1.04
Uncertainty regarding patient treatment	Inadequate information from a physician regarding the medical condition of a patient.	68	21.6	121	38.4	86	27.3	40	12.7	2.31	0.95
	A physician ordering what appears to be inappropriate treatment for a patient.	63	20.0	121	38.4	86	27.3	45	14.3	2.36	0.96
	A physician not being present in a medical emergency.	63	20.0	107	34.0	88	27.9	57	18.1	2.44	1.01
	Not knowing what a patient or a patient's family ought to be told about the patient's condition & treatment.	75	23.8	149	47.3	68	21.6	23	7.3	2.12	0.85
Dealing with death & dying	Feeling as my support is helpless in the case of a patient who fails to improve.	110	34.9	109	34.6	58	18.4	38	12.1	2.08	1.00
	Watching a patient suffer.	52	16.5	106	33.7	71	22.5	86	27.3	2.61	1.05
	The death of a patient.	30	9.5	103	32.7	60	19.0	122	38.7	2.87	1.04
Organizational decisions	Frequent change of unit of work.	87	27.6	142	45.1	56	17.8	30	9.5	2.09	0.91
	Rotating work shift.	94	29.8	125	39.7	51	16.2	45	14.3	2.15	1.00
	Centralization; low participation in decision making.	53	16.8	111	35.2	88	27.9	63	20.0	2.51	0.99
Inadequate preparation	Feeling inadequately prepared to help with emotional needs of a patient.	69	21.9	145	46.0	70	22.2	31	9.8	2.20	0.89
	Being asked a question by a patient for which I do not have satisfactory answer.	81	25.7	134	42.5	72	22.9	28	8.9	2.15	0.90
	Feeling inadequately prepared to help with the emotional needs of a patient's family.	66	21.0	141	44.8	82	26.0	26	8.3	2.22	0.86
Sexual harassment	Being sexually harassed/ requests for sexual favors, and other verbal or physical conduct of a sexual nature in work environment.	163	51.7	69	21.9	51	16.2	32	10.2	1.85	1.03

Percentages mean score of job related stress for sub scales calculated by using:

$$\text{Percentage mean score of job related stress} = \left(\frac{\text{Actual computed mean score}}{\text{Maximum potential score}} \right) * 100$$

Out of the eight subscales, the highest level of job related stress was on the subscale of dealing with death & dying with percentage mean score of 62.94 followed by uncertainty regarding patient treatment 57.72 and work overload 57.6. While job related stress from sexual harassment had the lowest percentage mean score of 46.19 (**Table 5**).

Table 5 Percentage mean score of Job related stress sub scale among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014. (n=315)

Sub scale	Mean Subscale Score	Std. Dev	Mean (%)	Minimum (%)	Maximum (%)
Stress from dealing with death & dying	7.55	2.407	62.94	25	100
Stress from uncertainty regarding pt. treatment	9.23	2.694	57.72	25	100
Stress from workload	11.52	2.876	57.60	25	100
Stress from organizational decisions	6.75	1.989	56.27	25	100
Stress from lack of support	6.72	2.273	55.98	25	100
Stress from inadequate preparation	6.57	2.073	54.71	25	100
Stress from conflict	8.27	2.742	51.67	25	100
Stress from sexual harassments	1.85	1.032	46.19	25	100
Overall job related stress	58.46	12.62	56.28		

5.5. Description of Coping Strategies

Concerning Coping strategy mostly used by nurses were; just concentrating on what they have to do next (2.99 ± 0.861), make a plan of action and following it (2.9 ± 0.917), developing coworker/peer support (2.76 ± 0.955), and having a close friend to tell (2.66 ± 1.038).

Coping strategy that least used among nurses were; do not want to come to work when stressed (1.93 ± 0.99), directly expressing anger on family or friends (1.95 ± 0.963), trying to feel better by taking drinks like tea, coffee, soft drinks more than usual (2.23 ± 1.046) and accept the situation because there is nothing to do (2.24 ± 1.051) (**Table 6**).

Table 6 Frequency distribution of each item of Coping Strategy among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.(N=315)

Sub scale	Item	I never do this		I sometimes do this		I frequently do this		I always do this		Mean	Std. Dev
		n	%	n	%	n	%	n	%		
Planful problem solving	I provide independent time for work place and home life activity	58	18.4	88	27.9	90	28.6	79	25.1	2.60	1.055
	I build satisfactory relationship with supervisor/Matron	69	21.9	106	33.7	89	28.3	51	16.2	2.39	1.001
	I seek help from the head nurse/supervisor or physicians	57	18.1	136	43.2	86	27.3	36	11.4	2.32	0.900
	I just concentrated on what I had to do next	13	4.1	79	25.1	121	38.4	102	32.4	2.99	0.861
	I made a plan of action and followed it	21	6.7	86	27.3	111	35.2	97	30.8	2.90	0.917
Self-control mechanism	I tried to keep my feelings to myself	39	12.4	113	35.9	102	32.4	61	19.4	2.59	0.938
	I tried to keep my feelings to myself from interfering with other thing too much	30	9.5	127	40.3	106	33.7	52	16.5	2.57	0.876
Social support	I have a close friend to share/tell	50	15.9	90	28.6	91	28.9	84	26.7	2.66	1.038
	I discuss problem with family members	49	15.6	97	30.8	86	27.3	83	26.3	2.64	1.035
	I develop coworker/peer support	34	10.8	89	28.3	112	35.6	80	25.4	2.76	0.955
Symptom management	I tried to make myself feel better by taking drinks like tea, coffee, soft drinks more than usual	97	30.8	96	30.5	75	23.8	47	14.9	2.23	1.046
	I tried to make myself feel better by	55	17.5	101	32.1	96	30.5	63	20.0	2.53	1.001

Sub scale	Item	I never do this		I sometimes do this		I frequently do this		I always do this		Mean	Std. Dev
		n	%	n	%	n	%	n	%		
			engage in hobbies, leisure activities and recreation								
	I turn to prayer or spiritual thoughts	49	15.6	95	30.2	88	27.9	83	26.3	2.65	1.034
	I make plans to change/Leave/ the career	56	17.8	87	27.6	99	31.4	73	23.2	2.60	1.031
Escape/avoidance	I did not want to come to work when i am stressed	131	41.6	108	34.3	42	13.3	34	10.8	1.93	0.990
	I avoid being in stressor situation if I can	51	16.2	88	27.9	96	30.5	80	25.4	2.65	1.031
	I directly express my anger on my family or friends	124	39.4	113	35.9	48	15.2	30	9.5	1.95	0.963
	I accept this situation because there is nothing I can do to change it	92	29.2	109	34.6	61	19.4	53	16.8	2.24	1.051

Coping strategy had five sub scales from these the most used strategy were social support followed by planful problem solving while escape avoidance was the least used strategy to manage stress among nurses (**Table 7**).

Table 7 Percentage Mean Score of Coping strategy Sub scales & overall coping approaches among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014. (n=315)

Coping strategy	Sub-scale	Mean	Std. Deviation	Mean %	Minimum %	Maximum %
Adaptive	Social support	8.06	2.271	67.12	25	100
	Planful problem solving	13.2	2.827	66.02	25	100
	Self-control	5.16	1.539	64.45	25	100
	Symptom management	7.41	2.343	61.75	25	100
	Total adaptive approach score	33.83	6.732	65.07	25	100
Maladaptive	Escape-avoidance	11.37	3.278	56.86	25	100

An independent sample t-test was done to see mean of overall job related stress & each subscales of job related stress versus socio-demographic variables.

An independent samples t-test for the overall mean of job related stress indicated that there was no statistically significant difference in mean scores for sex, marital status, working hospital, educational qualification and position (**Table 8**).

Table 8 Independent Samples test for overall job related stress versus socio-demographic characteristics among Nurse working in Jimma zone public hospitals, 2014.

Dependent Variable	Independent Variable		Mean	Std. Dev	t	P-value
Overall Job Related Stress	Sex	Male	58.78	12.264	0.454	0.650
		Female	58.13	13.000		
	Marital status	Single	58.23	13.014	-0.346	0.730
		Ever Married	58.73	12.159		
	Working Hospital	Referral Hospital	58.42	12.850	-0.133	0.894
		District Hospital	58.69	11.237		
	Educational Qualification	Diploma	58.39	11.398	0.116	0.907
		B.Sc.	58.56	14.405		
	Position/title	Clinical staff manager	58.53	12.644	0.319	0.750
		Clinical staff nurse	57.78	12.541		

Independent samples test for each job related sub scales: workload, conflict, lack of support, uncertainty regarding patient treatment, dealing with death & dying, organizational decisions, inadequate preparation, & sexual harassment with sex, marital status, working hospital, educational qualification, & position done independently.

Inadequate preparation had statistically significant mean scores difference across working hospitals i.e., district hospital nurses (7.04 ± 1.665) had higher mean stress score from inadequate preparation than referral hospital (6.49 ± 2.126); $t(70.13) = -1.98$, $p = 0.049$ (Table 10). The rest seven subscales versus sex, marital status, educational qualification, working hospital & position had not statistically significant mean differences

Table 9 Independent Samples test for job related sub scales versus working hospital among Nurse working in Jimma zone public hospitals, 2014.

Subscale	Independent Variable		Mean	Std. Dev	t	P-value
Workload	Working	Referral Hospital	11.08	2.89	-0.99	0.323
	Hospital	District Hospital	11.53	2.42		
Conflict	Working	Referral Hospital	8.29	2.76	0.29	0.770
	Hospital	District Hospital	8.16	2.62		
Lack of support	Working	Referral Hospital	6.75	2.26	0.65	0.511
	Hospital	District Hospital	6.51	2.351		
Uncertainty regarding Rx	Working	Referral Hospital	9.30	2.72	1.11	0.268
	Hospital	District Hospital	8.82	2.49		
Death & dying	Working	Referral Hospital	7.61	2.43	1.12	0.260
	Hospital	District Hospital	7.18	2.23		
Organizational decision	Working	Referral Hospital	6.72	1.99	-0.65	0.511
	Hospital	District Hospital	6.93	1.94		
Inadequate preparation	Working	Referral Hospital	6.49	2.12	-1.98	0.049*
	Hospital	District Hospital	7.04	1.66		
Sexual Harassment	Working	Referral Hospital	1.80	1.01	-1.85	0.064
	Hospital	District Hospital	2.11	1.11		

* $p < 0.05$

One way ANOVA was conducted with respondents' overall job related stress versus age category, salary, work experience in nursing and working unit. There were no statistically significant mean difference of job related stress across age category, salary and work experience in nursing while there was a statistically significant mean difference between the groups across working unit/department. $F(9, 305) = 2.450, p = 0.010$.

A one-way ANOVA showed statistically significant mean difference of overall job related stress across working unit. $F(9, 305) = 2.2450, p = 0.010$. Post-hoc comparisons using the LSD test indicated that the mean score of overall job related stress for nurses working in major operation room (64.05 ± 13.72) was higher than Surgical ward (55.03 ± 10.605),

ophthalmology (53.92±12.919) and Chronic Illness Follow up Clinic (51.05±8.316). Overall job related stress for nurses working in OPD (61.38±12.70) was significantly different from Surgical ward (55.03± 10.605) and from Chronic Illness Follow up Clinic (51.05±8.316). Overall job related stress for nurses working in ICU (60.80±9.039), Obstetrics & Gynecology (59.65 ±14.850), Medical ward (59.33±10.94), and Pediatrics (59.22±15.325) were significantly different from Chronic Illness Follow up Clinic (51.05±8.316) (**Table 10**).

Table 10 Descriptive statistics for respondents overall job related stress score with in working unit/department.

<i>Working unit</i>	<i>n</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Between groups F</i>	<i>p</i>
Medical ward	54	59.33	10.944	2.450	0.010*
Surgical ward	65	55.03	10.605		
Intensive Care Unit (ICU)	10	60.80	9.390		
Major Operation room	21	64.05	13.728		
Psychiatry	9	59.44	12.187		
Pediatrics	45	59.22	15.325		
Obstetrics & Gynecology	23	59.65	14.850		
Ophthalmology	13	53.92	12.919		
Chronic Illness Follow Up Clinic	19	51.05	8.316		
OPD	56	61.38	12.703		
Total	315	58.46	12.616		

**p-value* < 0.05

One way ANOVA for job related stress subscales with age category, salary, work-experience in nursing and working unit were done. There were no statistically significant mean difference across age category, salary and work experience in nursing while there were statistically significant mean differences between groups for three subscales i.e. workload, dealing with death & dying and organizational decisions across working units/departments (Table 11).

Table 11 ANOVA for job related stress subscales score with in working unit/department

ANOVA						
Subscale		Sum of Squares	df	Mean Square	F	p-value
Workload	Between Groups	301.418	9	33.491	4.45	0.000**
	Within Groups	2295.198	305	7.525		
	Total	2596.616	314			
Conflict	Between Groups	74.32	9	8.258	1.101	0.362
	Within Groups	2287.27	305	7.499		
	Total	2361.60	314			
Lack of support	Between Groups	72.08	9	8.010	1.576	0.121
	Within Groups	1549.76	305	5.081		
	Total	1621.85	314			
Uncertainty regarding Rx	Between Groups	100.17	9	11.130	1.558	0.127
	Within Groups	2178.44	305	7.142		
	Total	2278.61	314			
Death & dying	Between Groups	146.65	9	16.295	2.970	0.002**
	Within Groups	1673.23	305	5.486		
	Total	1819.88	314			
Organizational decision	Between Groups	81.09	9	9.010	2.366	0.013*
	Within Groups	1161.59	305	3.809		
	Total	1242.68	314			
Inadequate preparation	Between Groups	67.76	9	7.529	1.792	0.069
	Within Groups	1281.65	305	4.202		
	Total	1349.41	314			
Sexual Harassment	Between Groups	15.47	9	1.720	1.643	0.102
	Within Groups	319.21	305	1.047		
	Total	334.686	314			

* $p < 0.05$, ** $p < 0.01$

Multiple comparison analyses were conducted on each of the sub scales separately with Working unit/department as the independent variable and the result showed as follows:

- ❖ Nurses in Major Operation room (13.9 ± 2.4) scored significantly higher stress on workload as compared to Medical ward (12.13 ± 2.706), Pediatrics (11.04 ± 3.778), Surgical ward (10.88 ± 2.355), Obstetrics & Gynecology (10.87 ± 3.293), Ophthalmology (10.54 ± 2.696), Chronic Illness Follow up Clinic (9.95 ± 1.649). But there were no statistical significant difference with ICU (13.8 ± 1.87), OPD (11.77 ± 2.435) and Psychiatry (11.67 ± 3.082).
- ❖ Nurses working in ICU (13.8 ± 1.87) scored significantly higher stress on workload as compared to Chronic Illness Follow up Clinic (9.95 ± 1.649).
- ❖ Stress from dealing with death and dying found to be significantly higher among nurses working in Intensive Care Unit (8.9 ± 1.449), Obstetrics & Gynecology (8.57 ± 2.332), Major Operation room (8.43 ± 2.315), and Pediatrics (8.07 ± 2.58) than ophthalmology (5.46 ± 2.22).
- ❖ Nurses working in Intensive care units (8.90 ± 1.449) scored significantly higher stress on dealing with death and dying as compared to Obstetrics & gynecology (8.57 ± 2.332), major Operation room (8.43 ± 2.315), pediatrics (8.07 ± 2.58) and ophthalmology (5.46 ± 2.222).
- ❖ Nurses working in OPD (7.14 ± 2.058) scored significantly higher on organizational decision higher than Chronic Illness Follow Up Clinic (5.37 ± 1.674)

All predictor variables were entered in to the bivariate analysis independently and the result as showed below on **Table 12** indicated that 11 predictor variables have p- value < 0.25 and these taken as candidate variables for multiple linear regression model.

Table 12 Bi-variate analysis result of Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

Variables	Unstandardized Coefficients		<i>t</i>	<i>p</i> -value	95 % Confidence Interval for β	
	β	Std. Error			Lower Bound	Upper Bound
Working Hospital	0.27	2.034	0.133	0.894	-3.733	4.273
Sex	-0.646	1.424	-0.454	0.65	-3.447	2.155
Age	0.046	0.104	0.441	0.659	-0.159	0.251
Marital status	0.495	1.43	0.346	0.73	-2.318	3.308
Length of service	-0.007	0.112	-0.06	0.952	-0.227	0.214
Educational qualification	0.17	1.464	0.116	0.907	-2.71	3.05
Position/title	-0.752	2.356	-0.319	0.75	-5.388	3.884
Salary	0.001	0.001	0.483	0.629	-0.002	0.003
Working unit/department						
Medical ward	1.057	1.888	0.56	0.576	-2.657	4.772
Surgical ward	-4.317	1.742	-2.478	0.014*	-7.745	-0.889
Intensive Care Unit	2.42	4.058	0.596	0.551	-5.566	10.405
Major operation room	5.99	2.834	2.114	0.035*	0.414	11.566
Psychiatry	1.016	4.273	0.238	0.812	-7.391	9.424
Pediatrics Ward	0.893	2.034	0.439	0.661	-3.109	4.894
Obstetrics & Gynecology	1.289	2.736	0.471	0.638	-4.093	6.672
Ophthalmology	-4.729	3.569	-1.325	0.186*	-11.752	2.293
Chronic illness follow-up clinic	-7.88	2.957	-2.665	0.008*	-13.698	-2.062
Outpatient department	3.549	1.851	1.917	0.056*	-0.094	7.191
Adaptive coping approach	0.132	0.106	1.246	0.214*	-0.076	0.34
Maladaptive/ Escape-avoidance coping approach	0.95	0.211	4.507	0.000*	0.535	1.365
Mutual understanding at work	-0.689	0.24	-2.867	0.004*	-1.162	-0.216
Personal factor	0.407	0.203	2.002	0.046*	0.007	0.807
Organizational factor	0.194	0.124	1.569	0.118*	-0.049	0.438
Job Satisfaction	-0.393	0.046	-8.504	0.000*	-0.484	-0.302

***P-value <0.25**

Table 13 Multi-variable Linear Regression predicting Job related stress among Nurses working in Jimma Zone Public Hospitals, South-west Ethiopia, 2014.

Predictor Variables	Unstandardized Coefficients		t	p-value	95% Confidence Interval for β	
	β	Std. Error			Lower Bound	Upper Bound
(Constant)	74.416	4.975	14.959	0.000	64.627	84.204
Sex	0.231	1.269	0.182	0.856	-2.267	2.729
Age	0.086	0.094	0.916	0.361	-0.099	0.271
Mutual understanding at work	-0.497	0.221	-2.25	0.025*	-0.932	-0.062
Job satisfaction	-0.343	0.046	-7.435	0.000*	-0.434	-0.252
Escape-avoidance	0.767	0.194	3.943	0.000*	0.384	1.15
Working unit/department						
Chronic illness follow-up clinic	-5.964	2.684	-2.222	0.027*	-11.245	-0.682
Outpatient department	3.309	1.677	1.973	0.049*	0.009	6.609
Dependent Variable : Overall Job Related Stress score						
Max VIF=1.092, *p<0.05, **p<0.001, Adjusted R²=0.243, F=15.415, p=0.000						

Enter method was used and step by step predictor variable with largest p-value removed until the final model built. The overall model was significant ($F=15.415, p=0.000$)

Mutual understanding at work, job satisfaction, escape-avoidance, working in chronic illness follow-up clinic, and working in outpatient department predictor variables of overall job related stress. These *statistically* significant variables ($p<0.05$) explains 24.3% of the variance in the outcome variable (Job related stress).

As shown above on table 13 the multiple variable linear regression model indicated that mutual understanding at work between nurse & physician , job satisfaction and working in chronic illness follow-up clinic had inverse association with overall job related stress which is statistically significant i.e. $p=0.025$, $p=0.000$, & $p=0.027$ respectively.

Escape-avoidance coping strategy & working in outpatient department had a positive & statistically significant association with job related stress. While age and sex were not found to be statistically significant predictors of job related stress.

A unit increase at mutual understanding at work between nurse and physician would likely decrease job related stress by -0.497. A unit increase on job satisfaction would likely decrease -0.343 on job related stress. A unit increase at escape-avoidance coping mechanism would likely increase on job related stress by 0.767. Working in chronic illness follow-up clinic would likely decrease 5.964 on job related stress than other units. While working in OPD would likely increase 3.309 on job related stress than other units.

Comparing the contribution of each independent variable, the largest beta coefficient is Working in chronic illness follow-up clinic ($\beta = -5.964$, $p = 0.027$). This variable makes the strongest unique contribution to explaining the dependent variable (Job related stress), when the variance explained by all other variables in the model is controlled for. The β value for job satisfaction was the lowest ($\beta = 0.343$, $p = 0.000$), indicating that it made less of a unique contribution to the model when the variance explained by all other variables in the model is controlled for.

CHAPTER SIX: DISCUSSION

This study respondents (n=315) indicated mean overall job related stress level of 58.08 ± 12.62 which were 33.4% of nurses had low stress, 34% moderate stress and 32.7% had high stress. In contradiction to current study a study done in United Arab Emirates showed that mean stress level 42 ± 6 & nurses level of stress were 44.4% had low stress level, 55.1% had moderate stress level, and 0.5% had high stress level(30) which shows the overall mean stress score & high level stress lower than this study. This discrepancy may be due to staffing/workload difference of these two studies.

The highest stressful condition that nurses rated as always stressful were the death of a patient followed by watching a patient suffer. This may be due to linking death with clinical failure. Not enough staff to adequately cover the unit was frequently stressful condition. In line with this a study done in Jordan showed that the lack of enough staff to adequately cover the unit is the most stressful event perceived by the staff nurses (28).

The least stressful conditions rated among nurses were being sexually harassed in work environment. In contradiction to this American Nurse Association study found that sexual harassment as the greater the nurse's distress, the less likely the incident would be reported (34) this difference may be due to the sensitivity nature of the subject matter inquired.

This study indicated that higher overall job related stress from dealing with death & dying subscale followed by uncertainty regarding patient treatment and workload which is consistent with a study done in Gaza-Palestine that stated death & dying and workload as the most frequent and severe occupational stressors (17). In line with this a study conducted in South African tertiary hospital revealed that the greatest perceived source of stress appears to be workload followed by emotional issues related to death and dying (33).

This study indicated that there is no variation in overall job related stress across age & sex. This finding is consistent with a study done in Kuala Lumpur that reveals that age was not found to be statistically significant (13). Also supported by A study done in Jordan there were no significant statistical differences in perceived job related stress due to gender (28).

Finding of this study also indicated that there is no variation in job related stress due to educational qualification, position, working hospital, & length of service (experience in nursing). Contradictory to this finding on length of service study conducted in India indicated that nurses with a total nursing experience of 11-20 years feel more stress (29) this could be due to age distribution of this study mean age 27.95 ± 6.83 years which indicates study subjects are younger.

Current study showed that job related stress variation between working units/departments: nurses working in major operation room, OPD, obstetrics & gynecology, pediatrics & medical ward had higher stress in the order stated here than those nurses who are working in chronic illness follow up clinics. However this finding is inconsistent with Jordan study which reveals that there were no significant statistical differences in perceived job related stress due to work unit (28). This discrepancy may be due to man power/ staff allocation difference across units.

This study revealed that nurses who are working in ICU are more stressed than those in obstetrics & gynecology, pediatrics and ophthalmology nurses with regarding to dealing with death and dying. This may be due nature of the unit in which the admission of critical patient & death in ICU would be higher than others.

Nurses working in Major Operation room had higher stress from workload than Medical ward, Pediatrics, Surgical ward, Obstetrics & Gynecology, Ophthalmology, and Chronic Illness Follow up Clinic. But there were no statistical significant difference with ICU, OPD and Psychiatry. This difference may be due to prolonged standing of nurses until major operation ends which would make nurses more stressed than other unit nurses where there is no longstanding.

Nurses working at OPD had higher stress than those in chronic illness follow up clinics from organizational decisions this would be due to random and frequent rotation of nurses within OPD units in short intervals.

In general current study showed that their existed overall job related variation between working units/departments. In line with the present study findings from Jordan study supports that occupational stress difference across working unit (35).

In this study working unit /department particularly working in chronic illness follow-up clinic & OPD, mutual understanding at work between nurse & physician, job satisfaction and escape-avoidance coping strategy were predictor variables for overall job related stress. However, age & sex were not predictors. As revealed in this study working in chronic illness follow-up clinic had significantly lower job related stress than other units this may be due to nurse who are working in this unit help patients who are stable & ambulatory patient who need follow-up and this would not make nurses stressed when compared to units where there are critical care, dealing with death and dying etc. While to the contrary working in OPD found to be more stressful than other units this may be due presence of emergency departments like medical emergency & surgical emergency OPDs where there would be management of casualty, unexpected numbers of patients at any time than other units and this would possibly make them more stressful. This also supported by a study done in emergency department Nurses in Taiwan which reveals stresses are inevitable in all emergency departments (39).

Current study showed that the presence of mutual understanding between nurse & physician decreases job related stress among nurses. This could be because of the relationship between mutual understanding and collaboration where true collaboration requires mutual understanding, open & honest communication, and equitable, shared decision making powers (40) which in turn these would decrease job related stress among nurses by increasing nurses autonomy & decreasing conflict between them. Besides the presence of collaborative practice also improve job satisfaction(41,42).

In this study job satisfaction was also a predictor of job related stress in which their association is inverse; as job satisfaction increases nurse's stress would decrease. This finding is supported by a study done in Sao Paulo that reveals dissatisfaction with work could lead to stress(43) . Also similar with a study done in Kampala, Uganda that reveals there were significant negative relationships between occupational stress job satisfaction(44).

It has also found that nurses who were using escape-avoidance coping strategy (mal-adaptive coping approach) would likely increase their stress. This may be due to escape-

avoidance coping strategy increase mood disturbance, mood disturbance would leads to dissatisfaction and this dissatisfaction would lead to stress.

The highest rated coping strategy that nurses use always & frequently were just concentrating on what they have to do next. Seeking help from head nurses/ supervisors or physicians, do not want to come to work when stressed and directly expressing anger on family or friends were the least used coping mechanisms.

Regarding overall coping strategy used among nurses this study indicated that adaptive coping strategy used mostly than maladaptive coping (escape-avoidance). This is congruent with a study done in Mangalore study that stated majority of the nurses used active coping strategies(adaptive coping) and few use avoidance coping strategies (16) and supported by study conducted in Ibadan showed that stress coping responses of nurses were largely based on planning and active coping (32).

From adaptive coping strategies social support followed by planful problem solving were dominantly used coping strategies among nurses. This is congruent with study done in Mangalore & Gaza-Palestine that stated nurses' commonly used coping mechanisms include problem solving & social support (16,17).

Strengths of the study

- ★ The data collected through census (large sample size)
- ★ All functional public hospitals under Jimma zone were included in the study.

Limitation of the study

- The generalization of the findings is limited to nurses working in public hospitals i.e., not generalizable for nurses who are working in health center & private clinics.

CHAPTER SEVEN: CONCLUSION & RECOMMENDATION

7.1. CONCLUSION

- ★ This study indicated overall level of job related stress among nurses working in Jimma Zone public hospitals were high stress among one-third of nurses. These one third's of nurses are at high risk of developing burn out, absentisem, job dissatisfaction & turn over which would in turn compromise organization outcome & health condition of nurses.
- ★ Job related stress from dealing with death & dying, uncertainty regarding patient treatment and work load were higher in descending order while from sexual harassment & conflict least.
- ★ Overall job related stress varies across working unit.
- ★ Not enough staff to adequately cover the unit was frequently stressful condition.
- ★ Working in chronic illness follow-up clinic, mutual understanding at work between nurse & physician and job satisfaction were negatively associated predictors of job related stress. While working in OPD & escape-avoidance coping strategy (mal-adaptive coping approach) were positively associated predictors of job related stress.
- ★ Social support & planful problem solving were the most preferred stress management mechanisms while escape-avoidance coping strategy least used.

7.2. RECOMMENDATIONS

- ★ Nursing by virtue of its nature is subjected to stressful events like dealing with critically ill patients & deaths, hence Jimma Zone public hospitals managers shall provide job orientation about possible nature of each unit during hiring of new employees, during rotation and even on job trainings on how to cope with or how to manage stressful events in the hospital/work environment.
- ★ Jimma Zone public hospitals managers shall hire adequate number of nurses as well as allocating nurses in the units (departments) with consideration of workload of units.
- ★ Jimma Zone public hospitals managers, nurses & physicians shall promote nurses and physician information sharing regarding patient treatment & caring through different mechanisms like active involvement of nurses & physicians in charge of the unit during rounds, conducting periodical discussions between nurses and physicians regarding patient care which would in turn minimize uncertainty regarding patient treatment & maximize mutual understanding.
- ★ Further researches need to be conducted to explore a lot & intervene on job related stress.

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Annexes

Annex-01: Questionnaire

Consent form

Dear Sir/Madam! This is a study aimed to assess the sources of stress among nurses working in Jimma Zone public hospitals. It is evident that the findings of this study *will help both the nursing management and staff* nurses to be more aware of the Job related stress and how they could be better managed. Your participation in this study will contribute a lot to meet the objectives of the study and your participation is totally with your voluntariness and you can stop your participation in the study at any time.

Be assured that the **information you provide** would be used for research purposes only and would be treated as **confidential**.

Are you willing to participate? A. yes B. No

If yes continue, if no thank him/her and go to the next respondent

Principal Investigator

Tadesse Dagget Tesfaye

Tel: 0920-84-70-80

Email: tadesse.dagget@yahoo.com

Thank You!

Part I: Demographic information for nurses (personal information)

Instruction: Please circle the number in front of the option you choose & fill in the blank space that best describe you on the right side of the table.

No.	Questions	Coding categories
101	Sex	<ol style="list-style-type: none"> 1. Male 2. Female
102	Your Age in years	_____ years
103	What is your current marital status?	<ol style="list-style-type: none"> 1. Single 2. Married 3. Divorced 4. Widowed
104	Length of service /Your working experience in nursing profession(in years)	_____ Years
105	Your educational qualification	<ol style="list-style-type: none"> 1. Diploma 2. BSc.N 3. MSc 4. Other(Specify _____)
106	Your working unit	<ol style="list-style-type: none"> 1. Medical ward 2. Surgical ward 3. Intensive Care Unit (ICU) 4. Major Operation room 5. Psychiatry 6. Pediatrics 7. Obstetrics & Gynecology 8. Ophthalmology 9. Chronic Illness Follow Up Clinic 10. OPD
107	What is your title? Or Position that you presently hold within the hospital	<ol style="list-style-type: none"> 1. Staff nurse 2. Head nurse 3. Supervisor nurse 4. Matron nurse
108	Your current salary	_____
109	Specify the hospital that you are currently working.	<ol style="list-style-type: none"> 1. Jimma University Specialized Hospital 2. Shenen Gibe Hospital 3. Limu Genet Hospital

Part- II: For each of statement below, please rate by circling the number (from 1 to 4) that best describes how often the stated condition makes you stressful.

1= Never Stressful

2= Sometimes Stressful

3=Frequently Stressful

4=Always /Very Frequently/ Stressful

S.No	How often the condition stated below makes you stressful	Never Stressful (1)	Sometimes Stressful (2)	Frequently Stressful (3)	Always /Very Frequently/ Stressful (4)
201.	Not enough staff to adequately cover the unit	1	2	3	4
202.	Conflict with a physician.	1	2	3	4
203.	Not enough time to complete all of my nursing tasks	1	2	3	4
204.	Disagreement concerning the treatment of a patient.	1	2	3	4
205.	Lack of opportunity to talk openly with other unit personnel about problems in the unit.	1	2	3	4
206.	Conflict with a supervisor.	1	2	3	4
207.	Lack of opportunity to share experiences and feelings with other personnel in the unit	1	2	3	4
208.	Difficulty in working with a particular nurse in the unit.	1	2	3	4
209.	Lack of support of my immediate supervisor	1	2	3	4
210.	Inadequate information from a physician regarding the medical condition of a patient.	1	2	3	4
211.	Feeling helpless in the case of a patient who fails to improve.	1	2	3	4
212.	A physician ordering what appears to be inappropriate treatment for a patient.	1	2	3	4
213.	Watching a patient suffer.	1	2	3	4
214.	A physician not being present in a medical emergency.	1	2	3	4
215.	The death of a patient.	1	2	3	4
216.	Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment.	1	2	3	4
217.	Frequent relocation of unit of work.	1	2	3	4

S.No	How often the condition stated below makes you stressful	Never Stressful (1)	Sometimes Stressful (2)	Frequently Stressful (3)	Always /Very Frequently/ Stressful (4)
218.	Feeling inadequately prepared to help with emotional needs of a <i>patient</i> .	1	2	3	4
219.	Rotating work shift.	1	2	3	4
220.	Being asked a question by a patient for which I do not have a satisfactory answer.	1	2	3	4
221.	Centralization; low participation in decision making.	1	2	3	4
222.	Feeling inadequately prepared to help with the emotional needs of a <i>patient's family</i> .	1	2	3	4
223.	Not enough time to provide emotional support to the patient	1	2	3	4
224.	Too many non-nursing tasks required, such as clerical work	1	2	3	4
225.	Being sexually harassed/ requests for sexual favors, and other verbal or physical conduct of a sexual nature in work environment	1	2	3	4
226.	Not enough time to respond to the needs of patients' families	1	2	3	4

Part-III: For each of statement below, please rate by circling the number (from 1 to 4) that best describes *how often you use each of the following to manage stressful events (Coping)* in your work/job.

1 = I never do this, 2= I sometimes do this, 3= I frequently do this, 4= I always do this

S.No	How often do you use the condition stated below to manage stress	“I never do this” (1)	“I sometimes do this” (2)	“I frequently do this” (3)	“I always do this” (4)
301	I provide independent time for work place and home life activities.	1	2	3	4
302	I tried to keep my feelings to myself.	1	2	3	4
303	I build satisfactory relationship with supervisor/Matron.	1	2	3	4
304	I tried to keep my feelings to myself from interfering with other things too much.	1	2	3	4
305	I seek help from the superiors.	1	2	3	4
306	I have a close friend to confide in.	1	2	3	4
307	I Just concentrated on what I had to do next.	1	2	3	4
308	I discuss problem with family members.	1	2	3	4
309	I made a plan of action and followed it.	1	2	3	4
310	I develop co-worker/peer support.	1	2	3	4
311	I make plans to change/Leave/ the career.	1	2	3	4
312	I did not want to come to work when I am stressed	1	2	3	4
313	I avoid being in stressor if I can.	1	2	3	4
314	I tried to make myself feel better by taking drinks like tea, coffee, soft drinks more than usual.	1	2	3	4
315	I directly express my anger on my family or friends.	1	2	3	4
316	I tried to make myself feel better by engage in hobbies, leisure activities, and recreation. (such as reading, singing, listening music etc.	1	2	3	4
317	I turn to prayer or spiritual thoughts.	1	2	3	4
318	I accept this situation because there is nothing I can do to change it.	1	2	3	4

Part-IV: Nurse-physicians communication factors

Instruction: Below there are statements about personal and organizational factors affecting nurse- physician communication. Read each item carefully and circle your agreement that indicates to what extent the listed factor affect nurse-physician communication in your organization.

1= Strongly disagree, 2= Disagree, 3=Neither agree or disagree, 4= Agree, 5= Strongly agree						
S.No	Factors	Strongly disagree (1)	Disagree (2)	Neither agree or disagree (3)	Agree (4)	Strongly Agree (5)
401.	Physicians poor attitude to nurses work	1	2	3	4	5
402.	Uncooperativeness at work	1	2	3	4	5
403.	Negligence of duty	1	2	3	4	5
404.	Differential treatment of nurse & physicians in the hospital	1	2	3	4	5
405.	Absence of forum to discuss the issue of nurse- physician communication in the hospital	1	2	3	4	5
406.	Lack of clarity in roles & responsibilities in the hospital	1	2	3	4	5
407.	Lack of shared vision in the hospital	1	2	3	4	5
408.	Frequent supply shortage in the unit	1	2	3	4	5
409.	Malfunctioning of equipments in the unit	1	2	3	4	5

Part- V: Communication between nurse & physicians in patient care

Instruction: There are statements about possible conditions affecting mutual understanding at work between nurse and physician communication, and each statement has five alternatives. Read each item carefully and circle the corresponding number that you agree.

1= Never , 2= Rarely, 3= Sometimes , 4= Usually, 5= Always						
S. No	Items	Never (1)	Rarely (2)	Usually (4)	Sometimes (3)	Always (5)
501.	The nurse and physicians discuss mechanism to maintain patient safety	1	2	3	4	5
502.	The nurse and the physicians take into account each other's schedule when making plans to treat a patient together	1	2	3	4	5
503.	Physicians and nurse listen to each other	1	2	3	4	5

Part VII: Job Satisfaction questionnaire based on MMSS.

The following questions measures your job satisfaction levels and factors that contribute for being satisfied or being dissatisfied as a nursing personal in the hospitals you working in.

How satisfied are you with the following aspects of your current job?

Please **circle the number that applies your current satisfaction level in front of each question/item.**

S.No	Items	Very Dissatisfied (1)	Moderately Dissatisfied (2)	Moderately Satisfied (3)	Very Satisfied (4)
601.	Pay (Salary) you receive from your hospital as a nurse	1	2	3	4
602.	Annual leave you receive from the hospital	1	2	3	4
603.	Sick leave you receive from the hospital	1	2	3	4
604.	Hours that you work in the hospital	1	2	3	4
605.	Flexibility in scheduling your working hours	1	2	3	4
606.	Your satisfaction in your shift rotation	1	2	3	4
607.	Opportunity for part-time work	1	2	3	4
608.	Flexibility in scheduling your weekends off	1	2	3	4
609.	Compensation for working weekends & Holidays	1	2	3	4
610.	Maternity leave time given by the hospital	1	2	3	4

S.No	Items	Very Dissatisfied (1)	Moderately Dissatisfied (2)	Moderately Satisfied (3)	Very Satisfied (4)
611.	Recognition from your head nurse for your work	1	2	3	4
612.	Interaction with your nursing peers/co-workers	1	2	3	4
613.	Interaction with the physicians you work with	1	2	3	4
614.	Availability of medical equipments/supplies to deliver quality nursing care in your unit	1	2	3	4
615.	Satisfaction with the nursing care given to your clients	1	2	3	4
616.	Opportunities for social contact with your colleagues after work	1	2	3	4
617.	Opportunities for interact professionally with other disciplines	1	2	3	4
618.	Opportunities for further education/degree or post graduate study in nursing	1	2	3	4
619.	Opportunities to participate in morning rounds	1	2	3	4
620.	Opportunity to make autonomous nursing care decisions	1	2	3	4
621.	Opportunities for on job training/short term training	1	2	3	4
622.	Recognition for your work from superiors	1	2	3	4
623.	Recognition for your work from peers/coworker	1	2	3	4
624.	Encouragement and positive feedback you received from your matron	1	2	3	4
625.	Opportunities to participate in nursing research	1	2	3	4
626.	Opportunities to write and publish	1	2	3	4
627.	Your responsibility in your unit/ward	1	2	3	4
628.	Your control over conditions in your working unit/ward	1	2	3	4
629.	Consideration given to your opinion and suggestions for change in the work setting or office practice	1	2	3	4

Thank You for Your Time!

Annex-02 Tool Key (Summary)

Parts	Item/Question No.	Subscale category
Part-I	Part-I Consists of nine demographic questions. From Q101-109	
Part-II	Part-II has Seven major sub scales: 26 items which measures job related stress among nurses.	
	Item 201, 203, 223, 224& 226	Workload
	Item 205,207 & 209	Lack of support
	Item 202,204,206, & 208	Conflict
	Item 210, 212, 214, & 216	Uncertainty regarding Pt. Rx
	Item 211, 213, & 215	Death &Dying
	Item 218,220, & 222	Inadequate Preparation
	Item 217, 219& 221	Organizational decisions
	Item 225	Sexual Harassment
Part-III	Part-III has 26 items Measures coping mechanisms for job related stress.	
	Item 301, 303, 305, 307, & 309	Planful problem solving
	Item 302 &304	Self-control
	Item 306, 308, & 310	Social support
	Item 314, 316 & 317	Symptom management
	Item 311, 312,313, 315, & 318	Escape/avoidance mechanism
Part-IV	Part-IV & V have 12 items Nurse-physician communication related factors	
	Item 401, 402 & 403	Personal factors
	Item 404, 405, 406, 407, 408, & 409	Organizational factors
Part-V	Item 501, 502, & 503	Mutual understanding at work
Part VI	Job satisfaction measuring items taken from McCloskey	
	Item 601-629	