HAWASSA UNIVESITY

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DEPARTMENT OF PUBLIC HEALTH

WORKPLACE STRESS, COPING STRATEGIES AND ASSOCIATED FACTORS AMONG THE INTENSIVE CARE UNIT NURSES IN PUBLIC AND PRIVATE HOSPITALS SIDAMA AND SOUTHERN ETHIOPIA REGION, 2024

MPH THESIS

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HAWASSA, ETHIOPIA

MAY, 2024

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A THESIS SUBMITTED TO SCHOOL OF PUBLIC HEALTH, SCHOOL OF GRADUATE STUDIES HAWASSA UNIVERSITY, HAWASSA, ETHIOPIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER EPIDEMOLOGY

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DECLARATION

I hereby declare that this MPH thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

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This is to certify that the thesis entitled "**Workplace Stress, Coping Strategies and associated factors among the Intensive Care Unit Nurses in Public and Private Hospitals Sidama and Southern Ethiopia Region**" submitted in partial fulfillment of the requirements for the degree of **Masters of Epidemiology** has been carried out by **Biniyam Hanchiso ID No GPPHEPR/0003/15** under our supervision. We have thoroughly checked that he has considered and incorporated all comments. Therefore; we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department for defense.

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As a member of the Board of Examiners the final MPH open defense by Biniyam Hanchiso have read and evaluated his thesis entitled "Workplace stress, coping strategies and associated factors among the Intensive Care Unit Nurses in Public and Private Hospitals Sidama and Southern Ethiopia Region and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree.

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LIST OF ABBREVIATION AND ACRONYMS

AOR Adjusted odds ratio

POR Proportional odds ratio

BSC Bachelor of Science

COR Crude odds ratio

ENSS Expended Nursing Stress Scale

FMOH Federal Minster of Health

HU Hawassa University

HUCSH Hawassa University Comprehensive Specialized Hospital

ICU Intensive Care Unit

ILO International Labor Organization

NIOSH National Institute for Organization Safety and Health

ODK Open Data Kita

MPH Master of Public Health

SPSS Statistical Package Social Science

WHO World Health Organization

ABSTRACT

Background; Work-related Stress significantly affects healthcare workers globally, leading to organizational inefficiency, high staff turnover, and decreased job satisfaction. Both private and public healthcare institutions experience high levels of Stress. In Ethiopia, most studies have focused on public hospitals. This study aims to examine Stress in both private and public hospitals, emphasizing the need for effective coping strategies to improve healthcare outcomes.

Objective: to assess the level of workplace Stress, coping strategies and associated factor among the Intensive Care Unit nurses at Sidama and southern Ethiopia Region Public and Private Hospitals.

Method: A comparative cross-sectional study was conducted from April 1 to May 5, 2024, in public and private hospitals in Sidama and Southern Ethiopia. The consecutive sampling method was used. Data were collected via interview-based questionnaires using the simplified and adapted Expanded Nurse Stress Scale and the Coping Orientation to Problems Experienced Inventory. Collection was done using the Kobo Toolbox database, involving three diploma and two BSc nurses. Statistical analysis was performed with SPSS version 25, applying descriptive statistics, bi-variable, ordinal, and multivariate logistic regression. The significance was determined with an adjusted odds ratio, 95% CI, and p-value <0.05.

Result: The overall prevalence of work-related Stress among ICU nurses was 57 % (CI 95% 50.1, 63.7) in public hospitals (62%) and private hospitals (51.4%). In private hospitals, Stress were associated with having a diploma (AOR = 5.2 (95% CI: 1.04, 14), being female (AOR = 2.6 95% CI, 1.04, 6.53), and job dissatisfaction (AOR = 2.6(95% CI; 1.7, 7.12). In public hospitals, significant factors included being female (AOR = 5.3 (95% CI: 1.92, 14.4), less than 5 years of experience (AOR = 4.6(95% CI: 1.5, 14.05), holding a diploma (AOR = 6.8 (95% CI: 1.6, 16), and working shifts (AOR = 0.56 (95% CI: 0.4, 0.72).

Conclusion and Recommendation; In Sidama and Southern Ethiopia, work-related Stress levels among nurses were high. In Public hospital nurses reported higher Stress levels than those in private hospitals. Factors contributing to Stress included sex, education, experience, work shifts, and job satisfaction. Interventions for public hospital nurses, especially in high-Stress ICUs, are crucial. Training should focus on managing agitated patients and coping with workplace Stress.

Key words: Workplace Stress, Coping Strategies, Intensive care unit, Sidama, Southern Ethiopia region

1. INTRODUCTION

1.1 Background

According to the National Institute for Occupational Safety and Health (NIOSH), occupational Stress defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the workers (1).Within an organizational framework, terms such as occupational Stress, job Stress, and work Stress are frequently used interchangeably. Although they may vary slightly in phrasing, they essentially convey the same concept and are synonymous in professional settings (2).

As per the Health and Safety Executive organization, stress is the second most commonly reported type of work-related illness worldwide (3). In the United Kingdom, for instance , stress accounts for 49% of all lost working days (4). Although people are highly familiar with occupational stress and how to manage it, the problem persists and seems to be worsening (5). However, in some developing countries, people are not aware of the importance of dealing with occupational stress.

Workplace stress has the potential to negatively impact a nurse's quality of life, lower the standard of nursing care provided, and impair performance at work. It is negatively correlated with care quality because it led to a decrease in patient empathy and a rise in medical errors. Several studies demonstrate that stress affects patient outcomes and the way that care is provided, either directly or indirectly (6–8).This Stress not only affects the well-being of the nurses but also contributes to organizational inefficiencies, elevated staff turnover, increased sickness and absenteeism, a decline in the quality of care, heightened healthcare costs, and diminished job satisfaction (9).

Nurses employ various strategies aimed at maintaining well-being and mitigating the harmful effects of Stressful situation. This involves the efforts made by individuals to overcome Stress (10). The strategies encompass cognitive and behavioral efforts to alleviate existing demands, determined by how individuals utilize both external and internal resources such as health, beliefs, responsibilities, support, social skills, materials, and basic necessities to lower Stress levels (11). Individuals may engage in different forms of coping, such as attempting to improve the concrete situation or taking actions to alleviate the emotions associated with Stressful events without

necessarily removing the Stress themselves. Additionally, some coping mechanisms, like denial, might be used as defense mechanisms to prevent feeling overwhelmed.

In Ethiopia, studies revealed that work-related Stress was the major serious issue (12–15). Previous studies in the country predominantly employed a single cross-sectional design and focused exclusively on public hospitals. To improve the generalizability of the results, the present study adopted a comparative cross-sectional approach, encompassing both private and public hospitals. Additionally, there is a scarcity of research assessing work-related stress among ICU nurses in the study area. This study aims to evaluate the prevalence of work-related stress, examine coping strategies, and identify the determinants among nurses working in both public and private hospitals.

1.2 Statement of the problem.

Globally, high number of employees experience work place Stress, with healthcare professionals being the most susceptible due to the demanding nature of their work environment (16).Numerous studies reveal significant work-related Stress levels globally: USA 93% (17), China 68.3% (18), Iran 63.47% (19), and Saudi-Arabia 34.7% (20), Slovenia 56.5% (21) while in Africa, Botswana (74%) and studies in different parts of Ethiopia shown that the magnitude of work-related Stress among nurses was high ranged from 37.8% to 66.2 % (14,22,23).

Work-place Stress is a serious condition for nursing professionals that is directly associated with impaired and inappropriate performance and working within clinical settings. These issues will result in the poor performance at the workplace (24). The costs of work-related Stress estimated approximately $5.4 billion each year. Health care workers are the most at risk of work-related Stress among occupational groups(25). Nurses, dealing with the severe illness and death of patients, often find their profession to be highly Stressful (26). Socio-demographic characteristics, behavioral factors, work-environment factors (work shift, working unit, and work experience, working hours per week, assigned position, and job satisfaction) were determinants of work-related stress among nurses(14,27,28).Work-place Stress occurs when individuals experience a misalignment between the demands of their job and their knowledge, skills, or abilities, challenging their coping mechanisms (29).

International Labor Organization (ILO) has revealed that almost 10% of workplace accidents are related to Stress and the ability to effectively manage Stress can help maintain organization harmony (30). People differ in the coping strategies to deal Stressful incidents as a result individual's coping strategies should be viewed and assessed within their particular social, cultural and situational context (31). Meanwhile Stress in nurses is prevalent problem, documenting and reporting the causes and level of Stress among nurses is vital for successful interventions and snowballing their efficiency and abilities to cope with job demands (32).

Previous studies in the country predominantly employed a single cross-sectional design and focused exclusively on public hospitals. To improve the generalizability of the results, the present study adopted a comparative cross-sectional approach, encompassing both private and public hospitals. Additionally, there is a scarcity of research assessing work-related stress among ICU nurses in the study area. This study aims to evaluate the prevalence of work-related stress, examine coping strategies, and identify the determinants among nurses working in both public and private hospitals.

1.3 Significance of the study

Nursing profession, by its nature, exposed to a high degree of Stress even though it exists in all professions (33). Consequently, the present study is anticipated to disclose much data on level of workplace Stress, and coping strategies applied by ICU nurses to alleviate ICU Stress. Previous literatures had more emphasis on public hospitals and excluded nurses working in Private hospitals. Therefore, this study planned to extend knowledge of Stress in private hospitals and compare with public ones. Although multiple studies had found work place Stress is very common in ICU little is excavated in the case of this study area. This knowledge gap is vital because knowing the level of Stress, identifying workplace Stress and implemented possible coping strategies could help in prevention and management of workplace Stress in the ICU nurses.

The study will be an input for improvement of quality of care, Patients outcomes and the ICU Nurses productivity. Findings from this study build a piece of evidence for the Policy makers, Hospital administrator and other stake holders to weight job Stress among Nurses, to design and implement best coping strategies. This directly will help Nurses ease job Stress effectively, improves the quality of life and their excellence in a provision of quality care for their Patients. Besides, it will serve as baseline information for epidemiological monitoring and for further research activities in the area.

2. LITERATURE REVIEW

2.1 General overview of workplace Stress

Stress arises from both physiological and psychological reactions to situations or stress that induce pressure. Given the daily challenges we face, virtually everyone encounters varying levels of Stress. Healthcare professionals are particularly prone to workplace stress, given the direct impact their profession has on human life. This contributes significantly to the Stress experienced by healthcare providers (34).Work place stress refer to various factors and conditions within a work environment that have the potential to create physical or psychological strain on individuals. These stress can affect employees' well-being, job satisfaction, and overall performance(35).

2. 2. Levels of workplace Stress and coping strategies among ICU nurses

The nursing profession has been identified as highly demanding and emphasizes on delivering care to critically ill patients, particularly those in advanced stages of pathologies, which serves as a significant source of Stress for healthcare providers (36). In a study conducted in India, it was revealed that a substantial 68.29% of ICU nurses experienced moderate to high Stress levels, scoring between 2 and 4 on the ENSS scale. Furthermore, the overall prevalence of Stress among the entire ICU staff was reported to be 52.43% (37).Similarly, research conducted in Brazil shows that 57.1% of ICU nurses acknowledged the challenging nature of their workplace, with 23.8% reporting elevated overall Stress levels (on ENSS) (38).

An institutional based cross-sectional study done in North Western Ethiopia in Bahir Dar shows prevalence of workplace Stress was 68.2%. (14), another institutional based cross-sectional study conducted in Eastern Ethiopia at Harari showed that 66.2% of nurse were develop occupational Stress. (18) Similar study done in d/t part of Ethiopia shows vary in its prevalence 57.3% ,47.8%), 78.3 %,37.8.2 %.53%,46.9%,52.33% (22,23,39–43) respectively.

Most of ICU nurses care for the critically ill patients, at end stage organs failure. This leads to the workplace Stress (36). When a critically ill patient is dying, the ICU nurses experience it as the most Stressful moment than any other situation in nursing practice (44).A study done in Rwanda reported that the ICU nurses are emotionally Stressed when caring the critically ill patients with end organs failure and bearing a do not resuscitate order, this event was interpreted as termination of patient ‘s life (45).

A study conducted in the United States indicated that the most significant Stressor for ICU nurses is associated with challenges related to the death and dying of patients in the intensive care unit (46). Care providers express Stress particularly when dealing with critically ill and unstable patients as there isn't an alternative care pathway available to enhance their condition (47).The research conducted in Britain revealed that ICU nurses are not only Stressed by the high mortality rate in the ICU but also by the circumstances surrounding the deaths of ICU patients. Specifically, the study highlighted that the deaths of young individuals due to acute pathologies, multiple injuries, or multiple organ failure contribute significantly associated to workplace Stress experienced by ICU nurses (48).

ICU nurses responsible for the care of patients in advanced stages of cancer, cardiovascular diseases, and those undergoing organ transplantation experience higher levels of Stress compared to their counterparts in other ICU settings (49).An institutional-based cross-sectional study conducted in Ethiopia (23,50) revealed a significant association between nurse occupational Stress and the experience of death and dying among patients. Likewise, a study conducted in public health facilities in Ambo town indicated that the death of a close relative is associated with a threefold increase in the likelihood of developing workplace Stress among nurses (AOR=3.13, 95% CI 1.68, 5.84) (51). Conflict arises between nurses and physicians when doctors hesitate to prescribe suitable treatments due to concerns about potential complications. In these situations, ICU nurses experience frustration because they are responsible for caring for patients in distress but are unable to implement the necessary treatments. The nurses perceive the working environment as unsafe when they are required to follow prescriptions from physicians that they consider ineffective or unhelpful for the patients under their care (49).

Some nurses have expressed that the Stress they experience in the ICU is connected to their relationships with medical doctors. For instance, the absence of a timely medical response during emergency calls becomes a source of Stress for ICU nurses who find themselves in the challenging position of witnessing patients in distress without the means to intervene (52). In a study conducted in Pakistan, it was reported that inadequate communication between nurses and physicians stands out as one of the primary stress in the ICU workplace (53). Institution based cross-sectional study done in Addis Ababa Ethiopia indicated that conflicts with Physicians more determinant factor for the development of workplace Stress for ICU nurses (54).

The primary workplace Stressor for ICU nurses is the insufficient emotional preparation to attend to critically ill patients, particularly the lack of psychological support for patients in distress (49). When engaged in life-saving efforts or rescuing patients, ICU nurses frequently encounter unexpected ethical dilemmas, especially regarding the decision to continue or withdraw from resuscitative efforts. This exposure to moral quandaries places additional emotional Stress on ICU nurses (46).Another Stress-inducing event for ICU nurses involves delivering a bleak prognosis to the patient's family, emphasizing the necessity for nurses to be emotionally equipped to navigate this challenging situation (49)

A research study conducted in Pakistan revealed that, alongside inappropriate communication between nurses and physicians, the strained relationships among nurses emerge as a noteworthy source of Stress in the ICU (53).In a study conducted in Portugal it was identified that non-cooperation among ICU nurses serves as a significant Stressor, amplifying Stress levels when conflicts arise among the nursing staff (55). The study revealed that poor interpersonal collaboration, whether among nurses, between nurses and doctors, or with supervisors, is a primary source of Stress within the ICU setting (56)

Research conducted in India revealed that substantial workload and job pressures are potent factors contributing to Stress among ICU nurses (57). The study reported that working extended 12.5-hour shifts (from 7 AM to 7:30 PM) and assigning more than three patients per nurse were linked to heightened Stress levels and compromised nursing care (52).The rapid increase of workload and work pressures seen during massive injuries was reported to associate with the workplace Stress among the critical care nurses (48).

In the realm of nursing, where 80% of ICU nurses are women, their dual role as caregivers extends beyond the professional sphere. Assuming primary responsibility for household duties, these women face heightened work pressures. This dual commitment exposes them to additional workplace Stresses, the challenges inherent in their multifaceted roles (57).

The Stress experienced in the ICU is attributed to factors such as confined spaces, advanced equipment, and the disruptive noise emanating from alarms and malfunctioning electronic devices, as reported in a study (55). Research conducted in Iran identified that the sudden and unforeseen alarming sounds produced by monitors and the malfunction of ICU equipment serve as primary stress in the ICU environment (52).

In the intensive care unit (ICU), novice nurses exhibit a greater susceptibility to workplace Stress arising from equipment malfunctions compared to their more experienced counterparts. This discrepancy is attributed to the adept troubleshooting skills possessed by senior nurses, rendering them capable of addressing issues with ICU equipment effectively (48). Findings from a study conducted in India corroborate this observation, revealing that young nurses tasked with caring for complex patients and navigating new and evolving technologies are more likely to encounter workplace Stress (57).

Intensive Care Unit nurses express elevated Stress levels when delivering nursing care beyond their perceived competence. Additionally, Stress is reported among ICU nurses who provide care that may not be beneficial to the patient, driven by adherence to family wishes rather than medical efficacy. An illustrative example is the continuation of non-beneficial life support, motivated more by the fear of potential legal action than by the patient's best interests (58) .

ICU Stress is influenced by individual factors, as indicated that ICU nurses under the age of 35 exhibit higher Stress levels than their older counterparts (48).This discrepancy may stem from the relative inexperience of younger ICU nurses, leading to a perception of being overwhelmed, while their older counterparts, with more experience, may have developed greater resilience and adaptability to the demanding nature of their work (37).

An institutional-based cross-sectional study conducted in Northwest Gojam, an institutional setting revealed a noteworthy gender-based disparity in occupational Stress among nurses. Female nurses exhibited a 5.4-fold higher likelihood of experiencing Stress compared to their male counterparts. This association with occupational Stress was found to be statistically significant. (AOR=5.40 (17).

Similarly, a study conducted in Addis Ababa on another dimension of workplace Stress among nurses. The research identified that nurses with children faced an increased risk of developing Stress at work. (AOR = 0.46, 95% CI: 0.22, 0.96) (14).An institutional-based cross-sectional study, findings revealed that the likelihood of experiencing workplace Stress was higher among female participants when compared to their male counterparts (22,42,51).

An institutional-based cross-sectional study, the data suggested a nuanced relationship between work experience and workplace Stress among nurses. Specifically, the findings indicated that nurses with 5-10 years of experience were more likely to experience Stress compared to their counterparts with less than 5 years of experience (15,22,23,39).An institutional-based cross-sectional study, it was observed that nurses working in rotating shifts were more prone to experiencing Stress compared to their counterparts on fixed shifts (12,14,39,51).

Another institutional-based cross-sectional study, the data indicated a correlation between the duration of daily work hours and the likelihood of experiencing Stress among nurses. Specifically, nurses working beyond the standard 8 hours per day demonstrated a higher propensity for Stress compared to those adhering to an 8-hour workday (40–42).

2.3. Factors associated with stress and coping strategies among ICU nurse

Coping strategies involve the methods individuals employ to navigate emotional challenges and overcome stress (60). According to a study conducted in the United Kingdom ICU nurses employ coping mechanisms such as seeking emotional support from friends and colleagues, adopting cognitive management techniques (such as attempting to disengage from work during off-duty hours), and engaging in restful and recreational activities like movies, music, and sports to manage workplace Stress (47).Some individuals find solace in religion and spiritual beliefs, while others resort to smoking, consuming alcohol, or substance abuse as coping mechanisms, as indicated in a study(47). Another study reported that 58.3% of ICU nurses turn to reading books, newsletters, and magazines, while 57% discuss their Stress with mothers, peers, and friends as strategies to cope with workplace Stress (61).

Gender disparities exist in the utilization of coping strategies, with women often emphasizing emotional coping and seeking social support, while men tend to resort to alcohol and drugs as mechanisms for coping, as outlined in a study (62).Personal factors, including sociodemographic characteristics, years of education, and professional experience, were identified as contributors to workplace Stress, acting as risk factors (37). The evaluation of workplace Stress levels in ICU nurses, measured by the Expanded Nursing Stress Scale (63)

Numerous studies have various coping strategies employed to mitigate workplace Stress. These strategies include engaging in activities to divert the mind, such as movies, TV, music, and sports activities. Other approaches involve seeking solace in alcohol or drugs, gaining emotional support from colleagues and friends, turning to religion or spiritual practices through prayer and meditation, and attributing the situation to personal accountability (64).

2.4. Conceptual frame work

The conceptual frame work intended to shows an association that found between dependent variable level of Stress, level of coping strategies and independent (socio-demographic factors, occupational stress and Work Environmental factors).

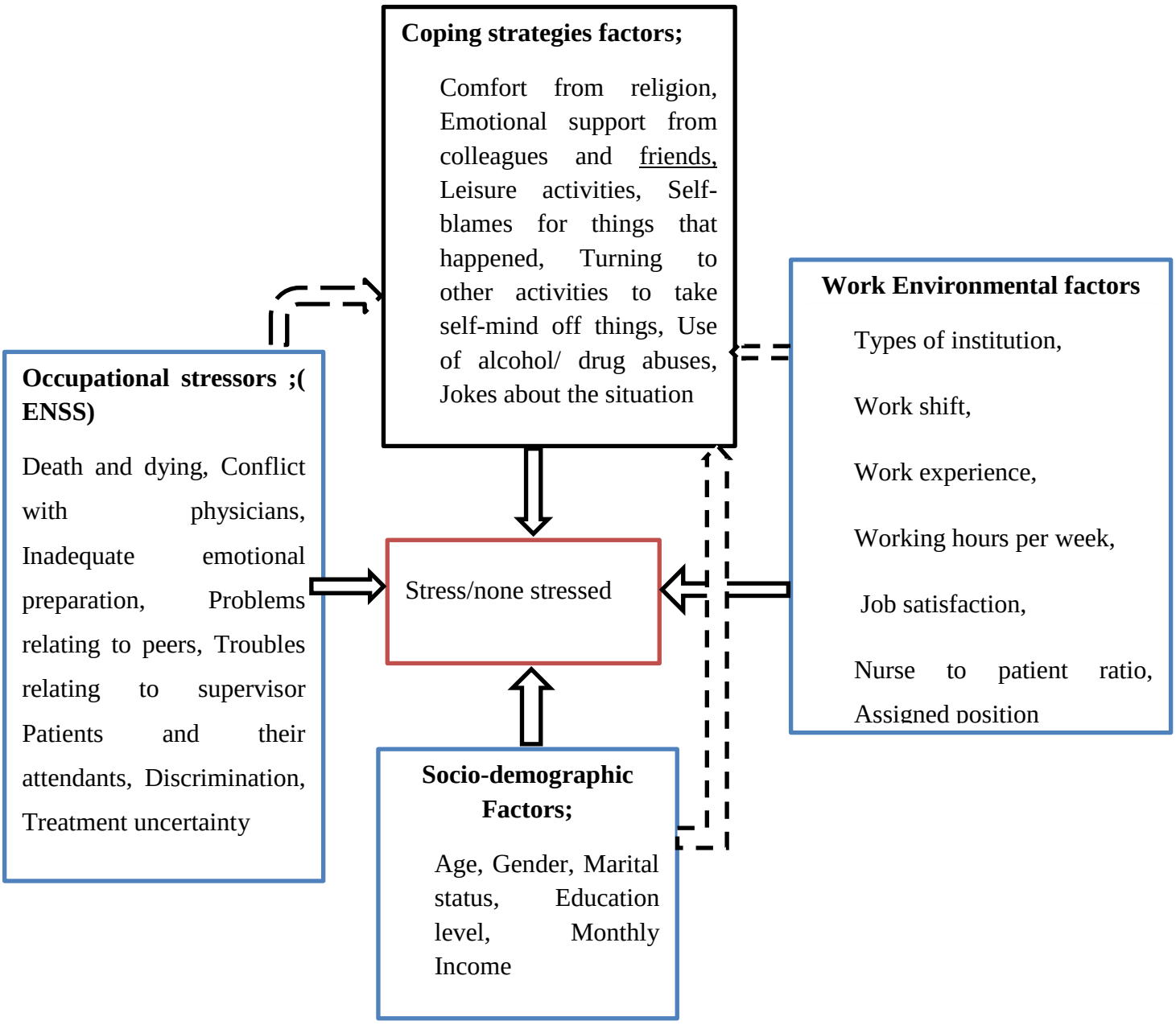

Figure 1; conceptual frame work developed here for assessment of workplace Stress, coping strategies and associated factors among Nurse Work ICU in sidama and southern Ethiopia region. Adapted here from pervious study (18, 26, 61)

3. OBJECTIVE

3.1. General objective

- To assess the level of Workplace Stress, coping strategies and associated factor among the Intensive Care Unit nurses of Public and Private Hospitals in Sidama and southern Ethiopia Region, 2024

3.2 Specific objectives

- To determine the level of workplace Stress among the ICU nurses of public and private hospitals in Sidama and the southern Ethiopia region
- To determine the Stress coping strategies of ICU nurses in public and private hospitals in the Sidama and southern Ethiopia region.
- To identify the determinants of workplace stress among ICU Nurses in public and private hospitals in the Sidama and southern Ethiopia region
- To identify factors associated with coping strategies among ICU nurse in public and private hospitals in the Sidama and southern Ethiopia region

4. METHODS

4.1 Study Area and Period

A multi-center, institution-based comparative cross-sectional study was conducted across public and private hospitals in the Sidama and Southern Ethiopia regions from April 1 to May 5, 2024. This study included governmental and private hospitals in three of the 12 zones in the southern region: Wolaita, Gamo, and Gedio. The public hospitals involved were Wolaita Sodo University Comprehensive and Specialized Hospital, Arab Minch General Hospital, and Dilla Teaching and Referral Hospital. The private hospitals included Sodo Christian Hospital, Dubo Hospital, Enyet Hospital, and Grace Hospitals. Wolaita Sodo town, the administrative center of the Wolaita zone, is located 264 km from Addis Ababa, the capital of Ethiopia. Arab Minch town, the administrative center of the Gamo zone, is 440 km from Addis Ababa, while Dilla town, the administrative center of the Gedio zone, is 372 km from Addis Ababa.

The Sidama region, one of Ethiopia's 11 regions, is situated in the southern part of the country. Geographically, the Sidama region borders the Wolaita zone to the north and east, and the Oromia region to the north and southwest. The region comprises 31 rural woredas, one city administration, and six town administrations. The capital city of the Sidama region, located 275 km south of Addis Ababa. The public hospitals included from sidama region are HUCSH, Adare General Hospital, Motit fura Primary hospital, bona hospitals, laku hospitals, Yirga alem hospital and private hospitals are Yenate hospital, Aleyeton Hospital, Kibru hospital, Seyefana hospital, Panacea hospital, Beta Abraham hospital and Bushlo mothers and child health specialty are included.

4.2 Study Design

Institutional based comparative cross-sectional study design was carried out.

4.3 Source and Study population

4.3.1 Source of population

All ICU nurses who had work at selected public and private hospitals

4.3.2 Study population

All ICU nurses who had working at selected public and private hospitals during the study period

4.4 Inclusion and Exclusion Criteria

4.4.1 Inclusion Criteria

Any Nurse Professional (Diploma, Bachler of Science, Master Science, Nurses or other Nursing Specialty) working in ICU at least 6 month who was available at work selected Hospitals during the data collection period, was included in the study.

4.4.2 Exclusion Criteria

Those who were on leave at the time of data collection and those who did not sign the consent form.

4.5 Sample size determination

The sample size for work place Stress and coping strategies was determined using the double population proportion formula by considering the following statistical assumptions i.e. 95% CI, (P1 = 66.9%) from the study done in Nurses' work-related Stress and associated factors in governmental hospitals in Harar, Eastern Ethiopia, (14) and study done on Determinants of Work-Related Stress Among Nurses Working in Private and Public Hospitals in Dessie City was (P2 ,46.4) (15). Alpha (α) type one error, β is type two error, power = 80%, confidence level = 1.96 sample size is calculated by using Epi Info Software.

$$n\,(\text{each group}) = (p1q1 + p2q2)\,(Z\alpha + Z\beta)^2 / (P2 - p1)^2$$

Where

n = Sample size in each group

CI= 95% confidence level =1.96

z1= power 0.84 for 80%power

p1 = proportion in intervention group

p2 = proportion in control group

p1 +p2 /2 = average of p1 and p2 p 2 –p1 = Minimum meaningful difference in proportions between intervention and control group n= $(0.669\times0.338+0.464\times0.536)(1.96+0.84)^2/ (0.669-0.46.4)^2$

n=100

After adding a 10% non-responses rate, the final sample size was 220. The ratio of one to one (1:1) for public and private hospitals was deployed (110 for private and 110 for public hospitals).

Table 1; Sample size calculation from different factors associated with work place Stressor among ICU nurse in public and private hospitals of sidama and southern Ethiopia region, 2024.

Variable	Power	Ratio	exposed group	unexposed group	OR	Reference	Sample Size
Age	80%	1:1	56	47	1.19	(14,15,28,65)	1010
Sex		1:1	76	42	1.8		84
Work experience		1:1	79	50	1.58		108
Level of education		1:1	64	39	1.6		154

Accordingly I consider 220 sample sizes to the sample size calculation for the first objective. But the universal one is the second objective sample size. I didn't considered it because of number study participant was too few in my study area. So that my sample size 220, ten percent non response rate added.

4.6 Sampling technique

All selected Hospitals that are found in Sidama and Southern Region listed below, categorized into public and private sectors. Subsequently, the focus shifts to identifying the number of ICU nurses within each hospital. The consecutive sampling technique is chosen for data collection, ensuring a comprehensive and systematic method. The reason for choosing this method which is because the ICU nurses are too few to for random selection therefore the consecutive technique was applied in order to support generalization. The sample comprises all ICU nurses who meet the predetermined inclusion criteria, allowing for a thorough representation of the targeted population.

Table 2; Sidama and Southern Region Public and Private Hospitals with ICU facilities

Public	Number	Private	Number
HUCSH	21	Yenate hospital	13
Adare General hospital	17	Aleyeton Hospital	11
Motit fura primary hospital	7	Kibru hospital	6
Yirga alem hospital	10	Seyefana hospital	7
Bona hospital	7	Panacea hospital	7
Laku hospital	8	Beta Abraham hospital	7
		Abehem P. Hospital	10
Arbaminch General hospital	12	Enyate hospital	8
(WSUCSH)	17	Bushulo mothers and child health specialty	10
Dilla University teaching and referral hospital	11	SodoChristian hospital	12
		Dubo hospital	10
		Grace hospital	9
Total	110		110

4.7 Variables of the study

Dependent variables

- ✓ Work place Stress (Stressed and Non-Stressed)
- ✓ Coping strategies (poor, good and excellent coping)

Independent variables

- ✓ Socio-demographic factors (Age, religion, Gender, Marital status, Education level, number of child and monthly income)
- ✓ Behavioral factor (substance use, alcohol)
- ✓ Psychological factors (death and dying, uncertainty concerning treatment, inadequate emotional preparation).
- ✓ Social related factors (Conflict with working physicians, Problems relating to peers, Troubles relating to supervisors, Patients and their attendants)
- ✓ Work Environmental factors (Types of institution, Work shift, working hours per week, patient nurse ratio , and Assigned position)
- ✓ Physical factor (work load)
- ✓ Job satisfaction

4.8 Data collection tool and procedure

The data was collected by using self-administered questionnaires. The questionnaire has five sections. Section I is about socio-demographics characteristics (10 items), Section II is regarding work environment experiences (8items), Section III ENSS (modified expanded nursing Stress scale). The ENSS is an expanded and updated version of the classic Nursing Stress Scale which is adapted from a previous study (15). (Nine dimensions was covered by ENSS, It contains 57 items. The first is death and dying patients related (contains 7 items), the second is conflict with working physicians (5 items), the third is about inadequate emotional preparation from daily job (3 items), the fourth is regarding problems relating to peers or callings (6 items), the fifth is troubles relating to supervisors (7 items), the sixth is related to workload (9 items), the seventh is about patients and their attendants (8 items), the eighth is more of regarding discrimination (3 items);

And the last is about treatment ambiguity (9 items).Participants (ICU nurses) was asked to indicate the level of work place Stress using a 4-point Likert scale (1 = never Stressful, 2= Occasionally 3= frequently and 4 = always Stressful). Section IV is about coping strategies (Brief COPE) applied by nurses to control the workplace Stress (7items) adapted from previous studies (66). An overall of 64 self-administered questionnaire items was administered to assess both work Stress and coping strategies. Part V Job satisfaction which is measured by the McCloskey/Mueller Satisfaction Scale (MMSS) which was adapted from a previous study. This scale is a four-point Likert type scale (1 = very dissatisfied, 4 = very satisfied) with eight subscales and 29 items The data was collected from selected ICU nurse participants, three diploma nurses was assigned for data collection and two bachelor nurses for supervision. The principal investigator will monitor and evaluate the entire collection process.

4.9 Data processing and Analysis

The collected data exported from Kobo tool box to SPSS versions 25 to analysis. Descriptive statistics, including mean, SD and frequency, were used to elucidate study variables. Bivariate and multivariable logistic regression analyses were conducted to identify associations between outcome and explanatory variables. Proportional odds ratios (OR) for coping level and adjusted odds ratios (AOR) for workplace Stress, with a 95% confidence interval (CI), determined the strength of statistical associations, with significance set at $P < 0.05$. An ordinal logistic regression model assessed factors linked to coping level strategies, categorizing coping levels as poor, good, or excellent. The model's assumptions were validated through chi-squared and parallel line tests. The Pearson chi-squared goodness-of-fit test confirmed data consistency with the fitted model ($P = 0.563$), while the parallel line test indicated no violation ($P = 0.603$). Multicollinearity was evaluated using variance inflation factor (VIF) and tolerance tests, with $VIF < 10$ and $T > 0.1$ indicating no multicollinearity issues.

4.10 Data quality assurance

First, the questionnaire was prepared in English then translated to Amharic and again back to English to keep its consistency. Pre-test was conducted on data collection tools on 5% (12) of sample size in Werabe comprehensive specialized hospital; in its clarity, logical sequence of questions and the total time it takes to finish the questionnaire were assessed before starting actual data collection. During the study period, the collected data was checked continuously on a daily basis for completeness by the principal investigator and supervisors. To ensure the reliability of the questionnaire, Cronbach's alpha was calculated for different scales used in the study. The calculated Cronbach's alpha values were 0.901 for the ENSS (Expanded Nursing Stress Scale), 0.892 for the Brief COPE Inventory, and 0.862 for the McCloskey/Mueller Satisfaction Scale. Prior to data collection, the supervisor and data collectors attended a 1-day training before starting work. Training was provided to the interviewers and supervisors regarding the importance of privacy and confidentiality, the usefulness of the study, independent factors, interviewing techniques, and how to control the quality of the data. This preparatory step was crucial to ensure that the data collectors and supervisors thoroughly understood the study's aims and could accurately administer the questionnaires. During data collection, regular supervision and follow up was undertaken. Supervisor checked each collected questionnaire daily. Further cross check by principal investigator and entered to statistical software in care full manner to minimize errors.

4.11 Operational definition

Work place Stress; Nurse Stress was measured by using Expanded Nursing Stress Scale (ENSS) which contains 57 items rated from 1 (never Stressful) to 4 (always Stressful) and it has nine subscales categorized into three factors (social factors, physical factors, and psychological factors)and The workplace stress will report, according to the number of participants who considered particular workplace stress to be the cause of Stress to him/her (63).

Work Environmental factors (Types of institution, Work shift, working hours per week, and Assigned position)

Stressed ICU Nurses; Those nurses who was score exactly mean and above the mean value of ENSS questions.(66)

Non-Stressed ICU Nurses; Those nurses who was score less than the mean value of ENSS questions (60)

Job Satisfaction Participants who scored mean and above the mean were considered as satisfied on McCloskey/Mueller satisfaction scale(68).

Job Dissatisfaction Participants who score below the mean were considered as dissatisfied in McCloskey/Mueller satisfaction scale. Job Satisfaction rated from 1(very dissatisfied) to 4(very satisfied) (69).

A coping strategy it was measured by Brief COPE Inventory it was composed of seven items. Each participant responded by choosing the number corresponding to how often he/she applied the particular coping strategy, the frequency of its use was expressed as follows: 1 = never, 2 = not at all, 3 = Most of the time, 4 = Always. A coping strategy was report according to the number of participants who applied it as a coping strategy to an ICU Stress (70)

The sum scores of each participant are divided by the number of items (seven) then coping capability is expressed as: 1.00 - 1.99: **poor coping,** 2.00 - 2.99: **good coping**, while 3.00 - 4.00: **excellent coping**(64)

4.12 Ethical consideration

Prior to starting this study, ethical clearance was obtained from Hawassa University, institutional review board. An official support letter from Hawassa University, College of Health Sciences, School of public health to sidama, southern Ethiopia and Hawassa city health bureau than bureau to hospital administration office. Data collection was in once hospital administrations have given their approval. Verbal consent was received from the study participant after explaining the study objectives and procedures and their right to refuse to participate in the study at any time they want. Names of participants was kept anonymous by using study record numbers only and by keeping questionnaires in safe place as a result confidentiality of data is be kept safe.

5. RESULT

5.1 Work place stress

5.1.1 Socio-Demographic Characteristics of Participants

Total, 214 nurses were involved in the study with a response rate of 97.7% (214/220). From public hospitals, 107 nurses with a response rate of 97.3% (107/110), and private hospitals 107 nurses with a response rate of 97.3% (107/110) were participated in the study. More than half of study participants are Male they constituted fifty nine (55.1%) in private and sixty eight (63.9%) in public hospitals. Among the nurses working in public hospital ICUs, forty three (39.8%) and sixty two (57.2%) of nurses in private hospitals who were a BSc degree holders. The participants' age ranged from 23 to 40 years old, with a mean age of nurses was 30.14 and a standard deviation 4.28 years. With private hospital nurses with mean age of 30.69 ± 5.13 years and public hospital nurses mean age 29.66 ± 3.28 years. Additionally, nurses in public hospitals nearly half, 53.3% (56) of nurses in private hospitals and 55.6 %(59) in public hospitals were married (Table 3)

Table 3;Socio-Demographic Characteristics of Nurses Working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024(n = 220)

Variables		Public hospitals (n=107)	Private hospitals (n=107)
		N (%)	N (%)
Sex	Male	68(63.9)	59(55.1)
	Female	39(36.1)	48(44.9)
Age(years)	<24	7(6.5)	4(3.7)
	25-29	25(23.1)	36(34.6)
	30-34	35(32.4)	33(29.9)
	>35	40(38.0)	34(31.8)
Marital status	Single	44(40.7)	51(46.7)

Variables		Public hospitals (n=107)	Private hospitals (n=107)
		N (%)	N (%)
	Married	59(55.6)	56(53.3)
	Widowed	1(0.9)	-
	Divorced	3(2.7)	-
Religion	Protestant	29(26.9)	42(39.3)
	Orthodox	45(42.6)	30(28.0)
	Muslim	30(27.8)	17(15.9)
	Catholic	3(2.8)	18(16.8)
Educational Status	Diploma	43(40.7)	34(31.8)
	BSc	43(39.8)	62(57.9)
	MSc above	21(19.4)	11(10.3)
Having Children	Yes	61(57.4)	46(43.0)
	No	46(42.6)	61(57.0)
Number of children	<2	23(21.3)	17(15.9)
	>3	37(36.1)	29(28.0)
Monthly income	<6000	37(34.3)	36(32.7)
	6001-9000	52(49.1)	60(57.0)
	>9000	18(16.6)	11(10.3)

5.1.2 Work Environment-Related Factors of Nurses Working in Private and Public Hospitals

In terms of work experience forty (38%) from public and thrifty six (33.3%) from private hospitals are five up ten years work experience .High number of the study participants, eighty (75%) in public hospitals, and fifty two (48.6%) from private side work on fixed shifts. fifty five (51.9%) nurses private hospitals and fifty seven (53.4 %) Nurses in public hospitals worked between 35 and 45 hours per week (Table 4).

Table 4;Work Environment-Related Factors of Nurses working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

Variables		Public hospitals (n=107)	Private hospitals (n=107)
		N (%)	N (%)
Job position	staff nurse	92(86.1 91(85.0)	
	head nurse	12(11.1)	10(9.3)
	Matron	3(2.8)	6(5.6)
Work shift	Fixed	80(75.0)	52(48.6)
	Rotation	27(25.0)	55(51.4)
Nurse to patient ratio	one to one	68(62.7)	62(60.2)
	One more patient	39(37.1)	45(39.8)
Working hour	35-45	55(51.9)	57(53.4)
	46_55	35(32.4)	33(30.1)
	>56	17(15.7)	17(16.5)
Work experience	<5	37(34.3)	43(40.2)
	5_10	40(38.0)	36(33.6)
	>11	30(27.8)	28(26.2)
Having chronic disease	Yes	28(25.9)	25(23.4)
	No	79(74.1)	82(76.6)
Job satisfaction	Satisfied	30(27.8)	34(31.8)
	Not satisfied	77(72.2)	73(68.2)

5.1.3 Behavioral Characteristics of study participants working public and private hospital in sidama and southern Ethiopia region

Lifetime substance utilization from private and public hospitals had described at a graph, among participants who had substance utilization history (5.8%) from private and (11.2%) from public hospitals had a history of alcohol drinking at least once at the life time. (Figure 2)

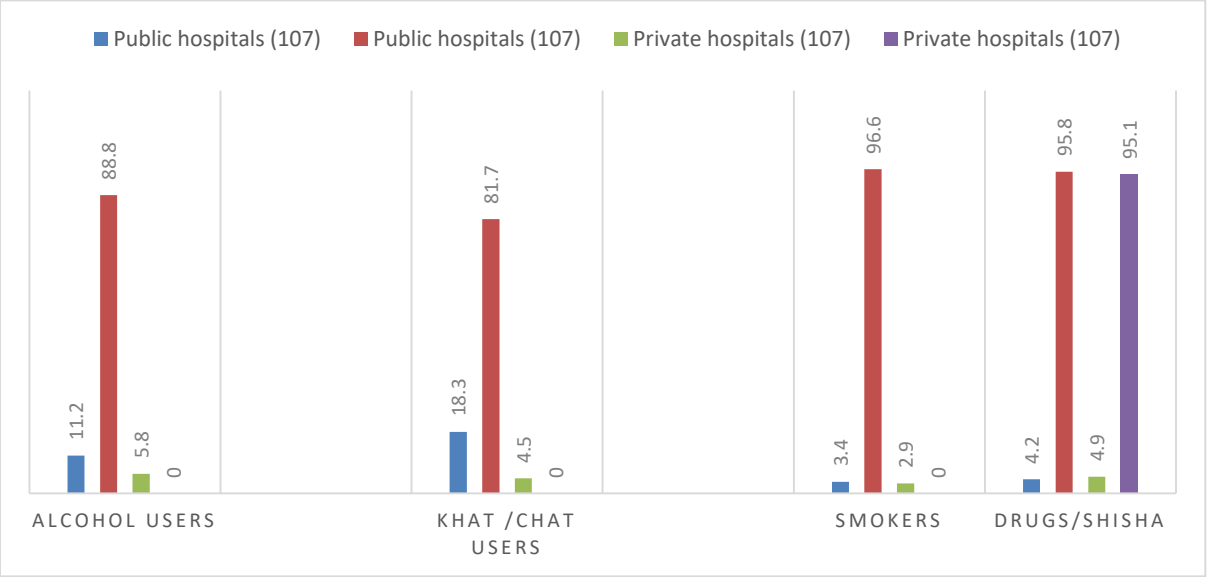

Figure 2; Behavioral characteristic of study participants in both public and private hospital in Sidama and Southern Ethiopia Region April 1 to May 5, 20

5.1.4 Work related stress among Nurses Based on Expanded Nurse Stress Scale (ENSS)

Stress from each sub-scale mean Stress level were death and dying, workload, and Conflict with physicians, with a mean score of 2.40, 2.23, and 2.29, respectively. Death & dying and workload were the most Stressful subscales in both private and public hospitals. (Table5)

Table 5;The Mean and SD of Work-Related stress among Nurses Working Nurses working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

Sub class	Items	public hospitals		Private hospitals		Overall	
		Mean	SD	Mean	SD	Mean	SD
Death and dying	7	2.50	0.61	2.28	0.46	2.40	0.56
Conflict with physicians	5	2.27	0.66	2.05	0.46	2.29	0.58
Inadequate emotional preparation	3	2.20	0.77	2.13	0.60	2.17	0.69
Problems with peers	6	2.34	0.74	2.19	0.60	2.15	0.68
Problems with supervisors	7	2.29	0.64	2.12	0.50	2.21	0.58
Workload	9	2.46	0.58	2.56	0.50	2.23	0.55
Patient and their family	8	2.30	0.61	2.02	0.51	2.17	0.58
Uncertainty concerning treatment	9	2.29	0.66	2.00	0.56	2.15	0.63
Discriminations	3	2.16	0.78	1.96	0.66	2.07	0.73

5.1.5 Overall Magnitude of work-related Stress among nurses working in ICU public and Private Hospitals Sidama and Southern Ethiopia Region.

The prevalence of Stress in public hospitals is 62%, while in private hospitals it is 51.4%. These data indicate that the prevalence of Stress is higher in public hospitals compared to private hospitals. The overall Stress level across both types of hospitals is 56.7% (Figure 3).

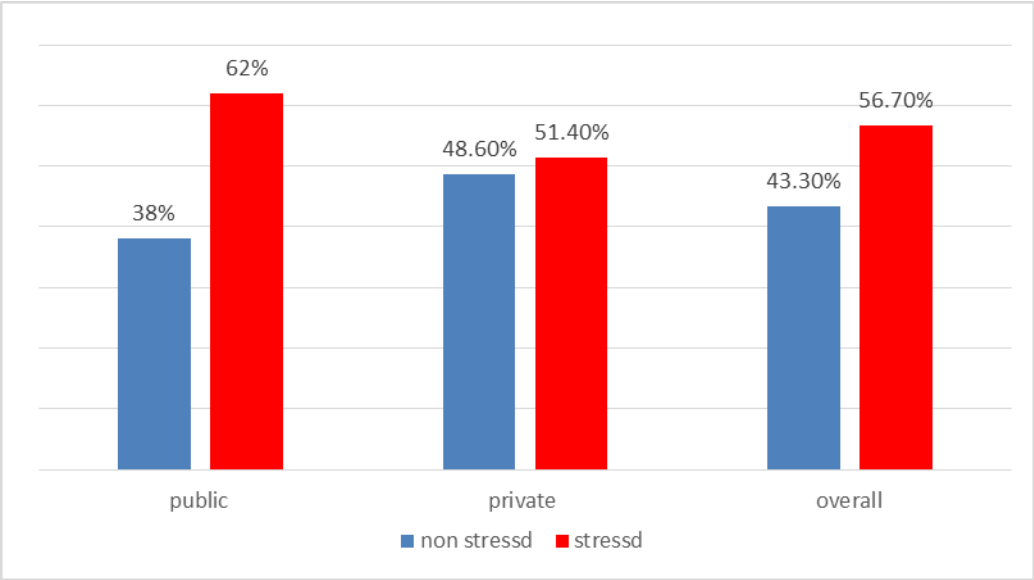

Figure 3;The magnitude of work-related Stress among nurses working in ICU public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

5.1.6. Factor associated with work related Stress among nurse working in ICU Public and private hospitals Sidama and Southern Ethiopia Region

In the bivariate analysis, eight variables from public and six variable from private hospitals were identified as candidates for multivariable logistic regression: age, marital status, sex, income, experience, work shift, job satisfaction, and level of education from public side and sex, experience, work shift, job satisfaction, working hours, and level of education from private were identified. In the multivariable analysis, the determinants of work-related Stress were sex, level of education, work shift, and work experience from public and sex, level of education, and job satisfaction significantly associated with work-related Stress in private hospitals. From public hospitals, Female nurses were 5.3 times more likely to experience work-related Stress compared

to male nurses (AOR = 5.3, 95% CI: 1.92, 14.4). Nurses holding a diploma were 6.8 times more likely to experience work-related Stress compared to those with an MSc degree or higher (AOR = 6.8, 95% CI: 1.6, 16). Nurses with less than five years of work experience were 4.6 times more likely to experience work-related Stress compared to those with more than eleven years of experience (AOR = 4.6, 95% CI: 1.5, 14.05).Additionally, nurses working in rotating shifts were 44% less likely to experience work-related Stress compared to those with fixed shifts (AOR = 0.56, 95% CI: 0.4, 0.72)

And in private side, the level of education was associated with work-related Stress. Nurses holding a diploma were 5.2 times more likely to experience work-related Stress compared to those with MSc degrees or higher (AOR = 5.2, 95% CI: 1.04, 14). Gender also emerged as a significant factor, being female nurses 2.6 times more likely to experience work-related Stress than their male counterparts (AOR = 2.6, 95% CI: 1.04, 6.58). Additionally, job satisfaction was found to be associated with workplace Stress. Dissatisfied nurses were 2.6 times more likely to experience work-related Stress compared to those who were satisfied (AOR = 2.6, 95% CI: 1.7, 7.12). Table 6)

Table 6;Bivariate and multivariate logistic regression to determine Work-Related Stress among Nurses Working in ICU Public and private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

Variables	stress level		Public hospitals (n=107)			Private hospitals (n=107)		
	Yes	no	**COR (95% CI**	**AOR (95% CI)**	p value	**COR (95% CI**	**AOR(95% CI)**	P value
Sex								
female	28	11	3.8(1.2,7.37)	5.3(1.92,14.4)	0.006*	3.2(1.8,6.73)	2.6(1.04,6.58)	.039*
male	27	41		1		1	1	
Age(years)								
<24	3	4	1	1		-	-	-
25-29	10	15	1.1(.106,11.4)	.88(.049,15.79)	.933	-	-	-

30-34	13	22	.078(.02,2.2)	.310(.021,4.6)	.398	-	-	-
>35	15	25	.81(.18,1.4)	.073(.004,1.32)	.077	-	-	-
Marital status								
Divorced	2	1	1	1	.235	-	-	-
Single	16	28	.28(.018,1.8)	.054(.002,1.811)	.103	-	-	-
Married	46	14	1.68(.25,31.13)	.144(.004,5.28)	.292	-	-	-
MSc and above	9	12	1	1		1	1	
Diploma	25	18	1.85(1.1,10)	4.8(1.6,16)	.049*	2.1(1.3,30.6)	1.66(.037,7.3)	.500
BSc	29	14	2.7(.68,5.6)	2.9(.68,12)	.146	7.2(0.45,11.3)	5.2(1.04,14)**	.041**
Work experience								
>11	12	18	1	1		1	1	
<5	25	12	3.4(1.7,13.2)	4.6(1.5,14.05)	.006*	1.9(0.82,3.9)	2.01(.64,6.60)	.126
5-10	29	11	3.9(1.8,13.9)	6(1.62,14.6)	0.003	1.95(.89,4.2)	2.39(.78,7.35)	.288
Monthly Income								
>9000	6	12	1	1		-	-	-
<6000	33	19	3.5(1.4,16.7)	7.12(.57,28.1)	.126	-	-	-
6000_9000	29	8	7.1(1.73,12.7)	.147(.013,1.726)	.127	-	-	-

Job satisfaction							
Not satisfied 47	30	2.7(0.98,4.92)	2.3(1.2,10.829)	.160	1.52(0.73,4.4)	2.6(1.7,7.12)*	0.048*
Satisfied 11	19	1	1		1	1	
Work shift							
Fixed 55	25	3.2(1.195,8.64)	0.56(0.4,0.72)	.008	1.9(1.1,3.3)	1.5(.72,4.9)	.192
Rotation 11	16	1	1		1	1	
working hours							
35-45 17	40	-	-	-	0.77(0.89,1.67)	1.21(.012,2.83)	.645
46-55 11	22	-	-	-	0.91(0.56,2.25)	1.34(.21,3.23)	.198
>55 6	11	-	-	-	1	1	

1: reference category,*=p-value, AOR, adjusted odds ratio, COR; crud odds ratio

5.2 Coping strategies to workplace Stress.

Coping levels among nurses working in intensive care units (ICUs) in public versus private hospitals. In public hospitals, 40.7% of nurses exhibited poor coping, compared to 39.6 % in private hospitals. This indicates a higher incidence of poor coping in public institutions. Conversely, good coping was reported by 46.9 % of nurses in private hospitals, a higher percentage compared to 44.3% in public hospitals. The rate of excellent coping was relatively low across both settings, with 15% in public and 12.8% in private hospitals. Overall, the data suggests that nurses in both public and private hospitals generally exhibit 38.8% poor coping mechanisms. (Figure 4)

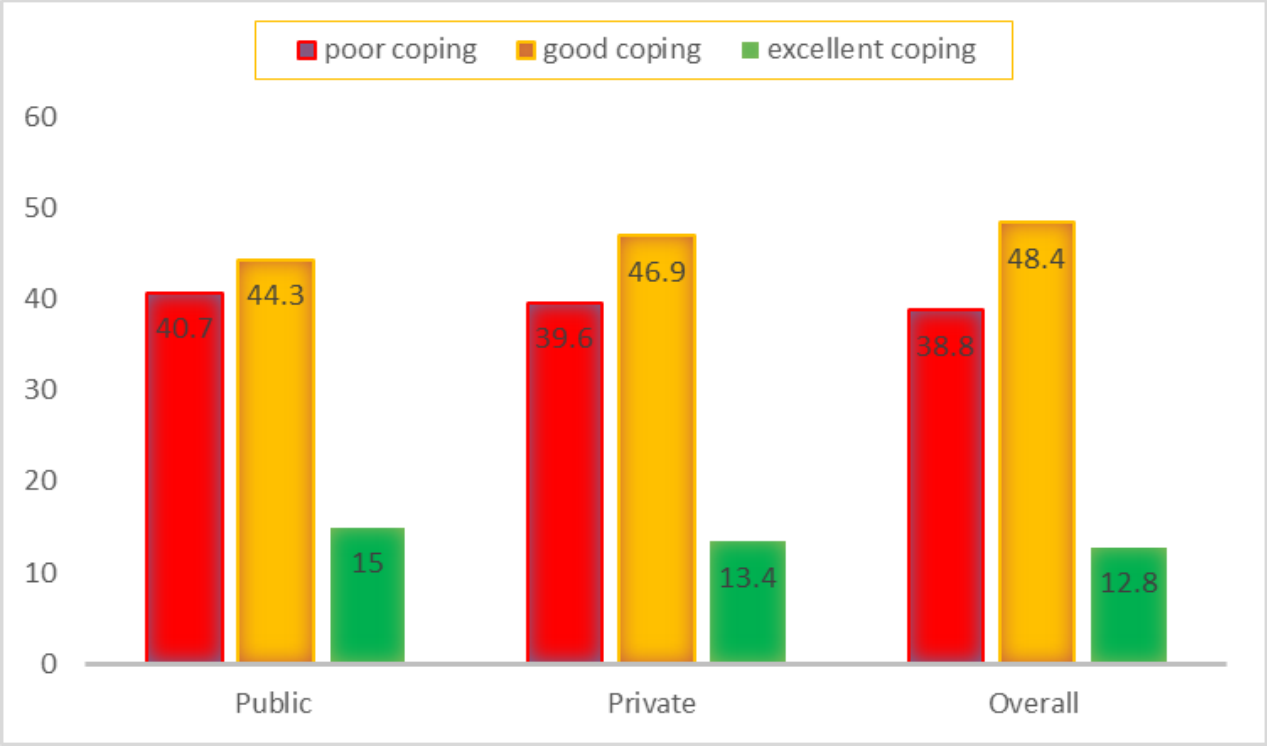

Figure 4; Overall Level of coping among nurse working ICU both public and private hospitals in sidama and southern Ethiopia

5.2.1 Coping strategies among Nurses Working Nurses working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region

The participants employed nearly all coping strategies with varying frequencies, each scoring an average of 2 out of 4 or higher (ranging from occasionally to always use). These strategies are organized by their mean scores, from the most frequently applied to the least. Seeking solace in religious or spiritual beliefs emerged as the most effective coping mechanism. Following this, receiving emotional support and guidance from friends and co-workers scored 2.7 (SD = 0.753) and 2.6 (SD = 0.873), respectively. Conversely, the least common coping strategies included using drugs or alcohol to feel better, and making jokes about the situation, with means and standard deviations of 1.64 (SD = 1.01) and 1.87 (SD = 1.01), respectively.(Table 7)

Table 7;The Mean and SD of coping strategies among Nurses Working Nurses working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

Coping strategies	Mean	SD
Comfort in religion or spiritual beliefs	2.7	.753
Emotional support and advice from colleagues and friends	2.6	.873
Doing something to think about it less, such as going to / TV/ music…	2.4	.753
Blaming him/her self for things that happened	2.1	1.10
Turning to other activities to take his/her mind off things	2.24	.935
Use of alcohol or other drugs to make him/her self-feel better	1.64	1.01
Joking about the situation	1.87	1.01

5.2.1. Scio demographic characters and coping nurse working in public and private hospitals

The table shows that male nurses are more likely to have good or excellent coping skills compared to their female counterparts. Age-wise, nurses over 35 years old exhibit the highest levels of good coping. Additionally, nurses with higher educational qualifications (MSc and above) demonstrate significantly better coping mechanisms compared to those with a diploma. The analysis underscores the impact of demographic factors on coping capabilities among ICU nurses. (Table 8)

Table 8;Scio demographic characters and coping level Nurses working in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

	Category	Public hospitals			Private hospitals		
Variable		**Poor**	**Good**	**Excellent**	**Poor**	**Good**	**Excellent**
Sex	Male	29(28.2)	23(19.8)	16(14.1)	21(19.6)	28(27.1)	10(9.04)
	Female	18(17.6)	14(13.3)	7(6)	15(14.2)	22(20.4)	11(9.9)
Age	<24	2(1.7)	3(2.6)	2(1.6)	1(0.9)	1(0.9)	2(1.9)
	25-29	10(9.5)	10(9.5)	5(4.5)	14(12.2)	13(12.5)	9(8.8)
	30-34	20(19.5)	10(9.2)	5(4.5)	11(9.5)	15(13.2)	7(6.2)
	>35	20(18.2)	14(11.8)	6(5.5)	18(16.6)	13(12.6)	3(1.)
Religion	Protestant	12(10.2)	13(11.9)	4(3.4)	20(19.7)	12(10.)	10(8.7)
	Orthodox	15(14.5)	15(14.5)	15(13.2)	10(9.7)	14(13.6)	6(4.9)
	Muslim	22(19.9)	7(6)	1(0.9)	8(7.8)	8(7.8)	1(0.9)
	Catholic	1(0.9)	1(0.9)	1(0.9)	4(3.5)	12(11.5)	2(1.9)
marital status	Single	21(18.1)	15(12.7)	8(7.7)	17(16.5)	24(22.3)	10(9.8)
	Married	30(25.6)	21(19.0)	8(7.2)	28(25.4)	19(18.2)	9(7.8)
	Divorced	4(3.2)					
Level of education	Diploma	22(21.1)	13(12.1)	8(7.5)	13(12.1)	16(13.5)	5(3.9)
	BSc	15(13.1)	20(16.2)	8(7.5)	30(29.1)	19(18.2)	13(11.7)
	MSc above	11(8.4)	6(4.6)	4(3.6)	2(1)	8(6.6)	1(3.1)

Variable	Category	Public hospitals			Private hospitals		
		Poor	Good	Excellent	Poor	Good	Excellent
Monthly income	<6000	18(16.6)	11(10.4)	8(7.2)	14(11.6)	15(12.5)	7(6)
	6001-9000	26(23.4)	13(12.1)	13(12.1)	28(21.3)	18(16.7)	15(9.7)
	>9000	7(6)	9(8.6)	2(1.2)	3(2.9)	7(6.9)	1(0.9)

5.2.2. Working Environment related factor and coping strategies nurse work in ICU Public and Private Hospitals Sidama and Southern Ethiopia

The relationship between working environment factors and coping levels among ICU nurses. Nurses in private hospitals are more likely to report good and excellent coping compared to those in public hospitals. Working experience also plays a critical role, with nurses having more than 11 years of experience showing higher levels of good and excellent coping. Job satisfaction significantly influences coping, as nurses who are satisfied with their job demonstrate better coping abilities. Furthermore, those working fixed shifts and with a nurse-to-patient ratio of one-to-one also tend to cope better. These findings indicate that a supportive working environment can enhance coping mechanisms among ICU nurses (Table 9)

Table 9;Working Environment related factor and level of coping strategies nurse work in ICU Public and Private Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

	Category	Public hospitals			Private hospital		
Variable		**Poor**	**Good**	**Excellent**	**Poor**	**Good**	**Excellent**
Working experience	<5	14(11.2)	15(12.3)	8(7.8)	21(19.6)	12(11.4)	10(9.7)
	5_10	24(21.5)	10(8.4)	6(5.4)	13(12.5)	14(13.6)	9(8.8)
	>11	13(11.7)	13(11.2)	4(3.4)	9(8.7)	15(14.5)	4(3.8)
working H	35-45	23(20.4)	21(18.1)	11(10.8)	20(18.7)	28(26.2)	9(8.7)
	46_55	20(19.5)	13(11.5)	2(1.7)	14(12.9)	13(11.9)	6(5.6)
	>56	9(8.8)	4(3.3)	4(3.3)	8(7.6)	6(5.6)	3(2.6)
Job Position	staff nurse	42(40.5)	41(38.8)	9(8)	30(29.3)	49(47.6)	12(11.7)
	head nurse	2(1.7)	5(4.4)	5(4.4)	3(2.9)	5(4.5)	2(1.9)
	Matron	1(0.9)	1(0.7)	1(0.7)	3(2.9)	2(1.8)	1(0.9)
Work shift	Fixed	34(33.5)	28(26.6)	18(15.6)	21(18.5)	21(20.2)	10(9.7)
	Rotation	12(10.7)	10(8.6)	5(4.9)	24(23.1)	23(23.0)	8(7.8)
Ration	1 to 1	39(37.1)	20(18.9)	9(8.7)	22(21.4)	30(29.1)	10(9.8)
	1 to more than one	10(8.6)	21(19.2)	8(7.7)	10(9.7)	23(22.3)	12(11.7)
Job satisfaction	Satisfied	18(17.1)	10(9.4)	2(1.6)	14(13.1)	13(12.1)	7(6)
	Not satisfied	34(33.1)	35(33.1)	8(7.5)	29(27.6)	29(27.6)	15(13.6)

5.2.3. Factor associated with coping strategies among Nurses Working in ICU public and private hospitals Sidama and Southern Ethiopia Region

The findings presented in the table offer the relationship between various factors and ordinal levels of coping strategies for workplace Stress among ICU nurse. Total 14 variables were included in the model of ordinal logistic regression level. Those variables are Age, Sex, Marital status, monthly income, Working hours, Year of experience; Educational level, job satisfaction, nurse to patients ratio , work shift, Working position, having children and number of children were entered independently to see their independent effect on the level of coping strategy among nurses working in sidama and southern Ethiopia region public hospitals and private hospitals.

However, only 6 variables from both side were found to be eligible for the multivariable ordinal logistic regression. These include nurses' educational level, years of experience, job satisfaction, working hours, age, and gender. On the multi-variable ordinal logistic regression, three variables become significantly associated with the level of coping strategy at a P-value less than 0.05. The variables from public hospital are educational level, sex, work experience and from private side educational level, work experience and working hours were shows significate association .with Nurses with a diploma are more likely to have "poor" coping and less to have "good" or "excellent" coping levels compared to those with a MSc or higher. The odds of having higher coping levels (good or excellent) are 0.46 times lower for diploma holders compared to holders an MSc with (APOR =0.46 (95% CI,0.13,0.76). Nurses with a M.Sc. or higher are 54% more likely to use good or excellent coping strategies level.

Working experience was the second factor that was significantly associated with level of coping strategies. Nurses with less than 5 years of experience are less likely to have "good" or "excellent" coping levels compared to those with more than 11 years of experience. The odds of being in excellent coping level was 0.201 times low for the nurses who have working experience less than five than compared with that of greater than eleven.(APOR 0.201(95 % CI.0.17,.57). Nurses who have work experience greater than eleven where 80% more likely to have good or excellent coping strategy level. The last variable found to have a positive association was sex. Male nurses are more likely to have "good" or "excellent" coping levels compared to female nurses, (APOR = 3.7, 95% CI, 1.63, 9.4) and from private hospitals ;

Nurses with a diploma are 0.22 time less likely to have "good" or "excellent" coping levels compared to those with an MSc degree. The odds of having an good or excellent coping strategy were 0.22 times lower for those with a diploma compared to those with an MSc or higher (POR =0.22 (95% CI,.055, 0.94). Nurses with a BSc or higher are 78% more likely to use excellent coping level. Working experience was the second factor that was significantly associated with level of coping strategies. Nurses with less than 5 years of experience are 0.289 times less likely to have "good" or "excellent" coping levels compared to those with more than 11 years of experience (APOR 0.28(95 % CI , 0.94,.88)indicating that less experienced nurses need additional support and training to develop effective coping mechanisms.

Nurses who have work experience greater than eleven years where 63% more likely to have good or excellent coping level. The last variable found to have a positive association was working hour. Nurses working 35-45 hours per week are 3.2 times more likely to have "good" or "excellent" coping levels compared to those working over 56 hours per week. (POR = 3.2, 95% CI, 95% (1.4, 7.3) (Table 10)

Table 10;Bivariable and Multivariable ordinal logistic regression to determine level of coping strategies among Nurses Working in ICU public Hospitals Sidama and Southern Ethiopia Region April 1 to May 5, 2024 (n = 220)

		Public hospitals			Private hospitals		
Variables		**CPOR[1]**	**APOR[1]**	**P Value**	**CPOR[1]**	**APOR[1]**	**P value**
Sex	Male	3.1(1.4,6.6)	3.7(1.63,9.49)	.002*	-	-	-
	Female	1	1		-	-	-
Age (year)	<24	.54(.12,2.40)	3.2(.6,16.9)	.161	.165(.015,1.78)	.42(.025,7.38)	.560
	25-29	.44(.18,1.09)	1.9(.7,5.4)	.175	.53(.21,1.33)	2.7(.7,10.6)	.134
	30-34	.70(.28,1.77)	1.3(.4,3.7)	.564	.63(.25,1.61)	1.7(.5,6.3)	.370
	>35	1	1		1	1	

Work experience	<5	.23(.089,.59)	.20(.0.17,.57)	.003	2.3(.75,7.3)	.289(.094,.88)	.030
	5_10	.46(.18,1.19)	.55(.19,1.54)	.259	.79(.22,2.76)	.47(.15,1.47)	.196
	>11	1			1	1	
Satisfaction	Yes	4.3(1.8,9.97)	.19(.067,.573)	.003*	-	-	-
	No	1	1		-	-	-
Level education	Diploma	.069(.02,.22)	.05(.013,.168)	.000*	.156(.04,.55)	.22(.055,.946)	.042
	BSc	.151(.04,.48)	. 09(.027,.35)	.002*	.267(.079,.89)	.37(.09,1.44)	.154
MSc and above		4(3.6)	1		1	1	
Working hour	-	-	-	-	2.3(1.06,5.03)	3.2(1.4,7.3)	.006
	35-45	2.3(.81,6.7)	1.3(.3,4.4)	.652			
	46_55	1.4(.4,4.5)	1.2(.33,4.4)	.770	1.1(.48,2.55)	1.6(0.66,3.9)	.290
	>56	1	1		1	1	
Nurse patient ratio	One to one	-	-	-	.35(.168,.764)	.259(.11,.612)	.058
	One to more than one	-	-		1	1	

Notes: [1]The result shows the odds of being in good or excellent coping strategies category for private and public hospitals by making poor coping strategies as reference.

1: reference category, *=p-value <0.05, CI = Confidence Interval, CPOR = Crude Proportional Odds Ratio

6. DISCUSSION

This study was conducted to assess the level of Workplace Stress, coping strategies and associated factor among the ICU nurses of Public and Private Hospitals in Sidama and southern Ethiopia.

The overall prevalence of work-related Stress among ICU nurses was 56.7 %(CI 95%; 49.8,63.5%) in public hospitals (62%) and private hospitals (49.8%).The findings of this study are in line with studies done in Brazil, Slovenia, and East Gojjam, Ethiopia,(15,17,64). However, in comparison to earlier studies conducted in the USA (93%), China (68.3%), Botswana (74%), and Harar, Ethiopia (66.2%)(14), the prevalence observed in this study was lower (4, 13, and 18). The possible justification for this discrepancy might be the small sample size; in a previous study, they used a larger sample size compared to this study, and other factors like the tool difference.

On the other hand, this finding was higher than the study conducted in Arar city, Saudi Arabia (35%), Ghana (21.1%), and Addis Ababa (37.8%), Ethiopia (5, 14, and 37). Furthermore, our study reported a higher prevalence of Stress compared to research conducted in Addis Ababa, Ethiopia, where the prevalence among nurses was found to be 37.8%. This difference may be due to differences in sample sizes and assessment tools. The study in Addis Ababa utilized the 34-item Nurses Stress Scale, while our study focused on a specific subset of ICU nurses, potentially influencing the reported prevalence rates and other reasons for differences in study participation.

In the current study, female ICU nurses in public hospitals reported 5.2 times higher odds of developing work-place Stress compared to male nurses. This was in line with research conducted in Addis Ababa, Ethiopia, East Gojam, and India (7, 17, and 47). This difference could be attributed to variations in assessment tools and study settings. In Ghana, the nurses' Stress index was utilized, while in Saudi Arabia, the work Stressor questionnaire was employed. This may apply to women, as they frequently play several roles in the home and in society in addition to their jobs. It's possible that women are more compassionate by nature than men or that similar biological characteristics play a role and unique challenges and stress, potentially related to gender roles, work-life balance, and workplace discrimination .However, this result is not in agreement with research from Iran, which showed that female nurses experienced 21% less Stress than male nurses (65). This discrepancy may be due to differences in tool usage and culture. Also, study participants' sociodemographic characteristics could be the cause.

The type of institution significantly influenced work-related stress levels among nurses working in the ICU. Specifically, nurses employed in public hospitals experienced 2.5 times more stress than those working in private hospitals. This finding aligns with a study conducted in Dessie town. (25). the explanation could be that nurses in public hospitals have a great deal of work due to the high patient flow. Individuals with lower incomes often prefer public hospitals due to their affordability and community-based insurance options. Consequently, nurses at these hospitals frequently manage a high patient load, given the higher demand for their services compared to private hospitals. Additionally, patients at public hospitals enjoy reduced medical costs and the support of community-based insurance programs, which are less commonly found in private healthcare settings.

Service years were also found to be factors influencing work-related Stress. As a result, nurses with between five and ten years of experience had a 4.6 fold higher likelihood of experiencing Stress at work compared to nurses with over eleven years of experience. This finding aligns with research conducted in Ethiopia's East Gojjam and Worabe regions (17, 66). Potential contributing factors include senior nurses' frequent exposure to death and dying in intensive care units (ICUs) and the challenges associated with managing patients and their families. Similarly, a

study conducted in Iran found that nurses with more than eleven years of experience exhibited lower stress levels compared to those with only one to five years of experience. (65). In general, nurses with less experience tended to have higher stress levels. This could be because nurses with more than ten years of experience have had time to adapt and develop a tolerance for stressful situations. However, this result contrasts with a study from Addis Ababa (36) that found no significant link between occupational stress and work experience, which might be due to differences in the study participants.

Additionally, less experienced nurses were often less prepared, felt more uncertain about treatments, and received less support from their coworkers. Conversely, a study in Singapore (71) reported that less experienced nurses were less stressed than their more experienced colleagues. This inconsistency might be due to differences in study settings and organizational structures, as the Singaporean study was conducted in private hospitals, whereas the current study includes both private and public hospitals with a focus on ICUs. The descriptive analysis of this study revealed that more than 70% of ICU nurses experience significant job stress due to several factors. These factors include caring for dying patients or dealing with patient death, coping with malfunctioning ICU equipment, tending to patients who are suffering or not showing improvement, managing agitated, violent, or abusive patients or families, fearing mistakes during patient care, and bearing a heavy workload.

A similar study in Pakistan found that 66% of ICU nurses strongly agreed that encountering patient death was the main source of workplace stress (28). In the current study, death and dying were identified as the most stressful situations. This finding is consistent with research conducted in Jimma, Ethiopia, Saudi Arabia, and India (36, 15, and 46). The socio-cultural empathy and humanitarian values of the participants, along with their emotional concerns regarding patients' impending deaths, likely contribute to this stress. Nurses regularly witness the suffering of ill patients and work closely with them, and the loss of a patient they were caring for can be particularly stressful. Furthermore, dealing with death and dying is inherently stressful even under normal circumstances.

This study identified workload as another significant source of work-related stress. This finding is consistent with previous research conducted in China and the Arsi zone of Ethiopia (13, 20). The elevated stress levels among nurses may be attributed to a shortage of staff to manage numerous patients, insufficient time to complete nursing tasks, and the burden of additional non-nursing responsibilities such as paperwork, management, and supervision.

Marital status was found to have no significant correlation with occupational stress, which aligns with findings from other studies (17, 25). However, this contrasts with research from India and Iran (35, 66), where married nurses reported higher stress levels than their single colleagues. This discrepancy may suggest that married nurses experience greater social and economic pressures. The varying results could be due to cultural differences and the different tools used to measure stress.

This study also looked into the relationship between coping strategies and education level. The results demonstrate that nurses with a diploma are much more likely to have "poor" coping skills and less likely to have "good" or "excellent" coping skills than nurses with an MSc or higher. To be more precise, the likelihood of diploma holders achieving higher coping levels (good or excellent) is 0.46 times lower than that of MSc holders. This finding is consistent with a Brazilian study that found a graduate degree boosts nurses' self-esteem, enhances their effectiveness, and gives them greater assurance to manage stress at work.(72).

Another significant factor associated with the degree of coping strategies was working experience. Comparing nurses with less than 5 years of experience to those with more than 11 years of experience, the former are more likely to have "good" or "excellent" coping levels. In comparison to nurses with more than eleven years of work experience, those with fewer than five years had POR 0.201 times lower odds of being in an excellent coping level.

An individual with over eleven years of work experience has an 80% higher likelihood of possessing a good or excellent coping strategy. ICU nurses are better equipped to handle critically ill patients and other workplace stressors when they have professional preparation through continuing education, according to a Brazil study. This is because it allows for a wider range of coping mechanisms, which reduces stress. This suggests that the range of stress management techniques increases along with knowledge and practice (72).This outcome was in line with a Malaysian study wherein nurses with more experience demonstrated superior

performance compared to those with one to five years of experience. (72).This result was consistent with a study in Malaysian which nurses with higher experience showed than the nurses with one to five years of experience (65). This finding suggests that newly graduated or early-career nurses may face additional challenges in adapting to the demanding work environment, managing workloads, and developing coping strategies.

Nurses with less experience generally had poorer coping mechanisms. This could be a nurse with more than ten years of experience who has learned to cope well over time and who has a higher threshold for stress. But when compared to a study conducted in Iran, the outcome was different (21).There may be a discrepancy between our health and the equipment's availability in this regard. The most common coping strategy, according to studies' descriptive sections, was religion. This was followed by using instrumental support watching TV or movies, for example and getting emotional support from friends and co-workers. Drug misuse and self-blame were not common.

The thesis on workplace Stress among ICU nurses in Sidama and southern Ethiopia suggests several key implications. By addressing the factors that contribute to Stress, providing support, and promoting a positive work environment, healthcare organizations can help prevent burnout and improve the well-being of ICU nurses. Ultimately, this will not only benefit the nurses themselves but also ensure the delivery of high-quality care to critically ill patients in the ICU.

7. STRENGTHS AND LIMITATIONS OF THE STUDY

7.1 Strengths of the Study

- ✓ The study conducted public and private hospitals were included to make the study representative.
- ✓ The study used advanced analysis and Use of a contextually adapted standardized questionnaire.

7.2 Limitations

- ✓ In this study, a cross-sectional study design was adopted, a true cause-and-effect relationship between the independent and dependent variables is not demonstrated.
- ✓ Because of study conducted solely through questionnaires, respondent response set bias may have occurred.
- ✓ The qualitative method does not support the quantitatively collected information.

8. CONCLUSION AND RECOMMENDATIONS

8.1 Conclusion

The overall prevalence of work-related Stress among ICU nurses in sidama and southern Ethiopia region was high, with public hospital nurses experiencing more Stress compared to those in private hospitals. Factors such as gender, level of education, years of experience, and type of institution were found to be significant determinants of work-related Stress in both public and private hospital settings. However, in private hospitals, factors such as education level, sex, and job satisfaction were also determinates of work related Stress. In public hospitals, Stress determinants included gender, education level, work shift and years of experience. Strategies for reducing work-related Stress among nurses included workload reduction, providing psychological counselling for ICU staff, and offering Stress management training, especially for less experienced nurses.

8.2 Recommendations

For Sidama, Hawassa, and Southern Ethiopia Health Bureau

- Implement Stress management programs and initiatives specifically tailored for intensive care unit (ICU) nurses, addressing the unique challenges and stress they face in their demanding work environment.
- Provide ongoing training and professional development opportunities for nurses, particularly those with diploma-level education, to enhance their skills, knowledge, and coping strategies.

For Hospitals

- Conduct regular assessments of work-related Stress levels among ICU nurses and implement evidence-based interventions to mitigate identified stress.
- Ensure adequate staffing levels and appropriate nurse-to-patient ratios to prevent excessive workloads and burnout among nurses.
- Offer flexible scheduling options, such as rotating shifts, to promote better work-life

For ICU Nurses

- Engage in self-care practices, such as exercise, mindfulness, and Stress management techniques, to maintain physical and mental well-being.
- Seek support from colleagues, supervisors, and professional networks to share experiences and coping strategies.
- Continuously enhance professional knowledge and skills through ongoing education and training opportunities.

For Researchers

- Conduct further research to explore the specific stress and coping mechanisms of ICU nurses in different healthcare settings and regions.
- Investigate the effectiveness of various Stress management interventions and their impact on the well-being and job performance of ICU nurses.

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Appendix

Appendix I: Information Sheet

Name of Investigator: Biniyam Hanchiso (BSc, MPH candidate)

Name of Organization: Hawasssa University, College of Medicine and Health science, School of Public health, Department of Epidemiology

Introduction: This information sheet is prepared for Sidama and southern Region Hospital administrators, Data collection process and gets permission.

Purpose of the Research: To assess the level of Workplace Stress, coping strategies and associated factor among the Intensive Care Unit nurses at Sidama Region Public and Private Hospitals, Sidama and southern Region Ethiopia from April 1 to May 5, 2024.

Procedure: The information which is necessary for this study will be taken from ICU Nurse who fulfill the inclusion criteria and willing to participate .

Risk /Discomfort: Since the study was conducted by taking appropriate information from the verbal response of the participant, it will not directly harm the participants. The name of the participants will not be recorded on questionnaires. All information taken from the participants was kept confidential and the information was used only for study purposes.

Benefits: The research has no any direct and special benefit for the participants of the study. But, the research will have indirect benefit for participants and other staffs. It will help health professionals to prepare and plan for Work place Stress and coping strategies. It also will help policy makers to design appropriate strategies to reduce the burden or STRESS of Nurses and to apply effective coping strategies.

Confidentiality: To reassure the confidentiality of the information, all important information of the participants was kept confidential, will not be given to anyone except for investigator and advisors.

Person to contact: Biniyam Hanchiso- Principal Investigator

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Appendix II: Developed self-administered questionnaire

This questionnaire is prepared to collect socio-demographic, Work STRESS, coping strategies and associated factor to ICU nurses working at Sidama Region Hospitals. All this information was taken from participants without mentioning the name and medical record number of the patients.

Data collection date----------Month----------Year----------

Name of data collector----------signature----------

Name of the supervisor----------signature----------

Code Number ----------

Part one: Socio-demographic characteristics related questions

S/n	Variables	Response
1	What is your age in a year?	____ years
2	What is your gender?	1. Male 2. Female
3	Type of Institution:	1. Private 2. Government
4	What is your religion?	1. Orthodox 3.protestenet 2. Muslim 4.catholic 5.other

5	Your marital status?	1. Single 3.divored 2. Married 4.wedowed
6	Do you have children?	1.Yes 2. No (if No skip Q 9)
7	How many children do you have?	----------
8	What is your highest educational qualification	1. Diploma 2. B.Sc. 3. Master and above
9	What is your monthly income?	1. <6000 2. 6000–9000 3.>9000

Work Environment-Related Factors

1	How many years of experience do you have?	----------
2	What is your typical work shift pattern?	1. Fixed 2. Rotation
3	Job Position:	1. Staff Nurse 2. Head Nurse 3. Matron Nurse
4	Hours worked per week	……
5	Are you satisfied with your current job?	1. Yes 2.No
6	Do you receive extra payment for additional workload?	1.Yes 2.No

7	Do you have a chronic medical illness?	1. Yes 2. No
8	What is the typical nurse-to-patient ratio in your work setting?	1. 1 nurse: 1 patient 2. 1 nurse: more than 1 patient
9	Have you considered pursuing another job in a different healthcare institution?	1. Yes 2. No

Behavioral factor

S/n	Variables	Response
1	Are you an alcohol user?	1. Yes 2.No
2	Do you use Khat?	1. Yes 2.No
3	Are you a smoker	1. Yes 2. No
4	Do you use drugs, shisha, or hashish?	1. Yes 2. No

THE ICU WORKPLACE STRESS (ENSS)

No	Variables	Response			
	Workplace Stressor	Never Stressful	Occasionally Stressful	Frequently Stressful	Always Stressful
1	Painful procedure				
2	Helpless, no improvement				
3	Talking to patient about death				

4	Death of patient				
5	Physician not present when patient dies				
6	Watching patient suffer				
7	Criticism by a physician				
8	Conflict with physician				
9	Disagreement about treatment				
10	Making decision without physician				
11	Organizing doctors work				
12	Feeling unprepared to help family with emotional need				
13	Having no answer for patient				
14	Unprepared to help patient with emotional needs				
15	Lack of opportunity to talk with other personnel				
16	Lack of opportunity to express negative feeling about patient				
17	Difficulty with another nurse in immediate work setting				
18	Difficulty with another nurse outside immediate work setting				
19	Difficulty working with nurse of opposite sex				
20	Conflict with supervisor				
21	Lack of support from immediate				

	supervisor				
22	Criticism by a supervisor				
23	Lack of support from nursing administrators				
24	Accountable for things beyond control				
25	Lack of support from other health care administrators				
26	Criticism by nursing administrators				
27	Floating to other units				
28	Breakdown of computer				
29	Unpredictable staffing/schedule				
30	No time to give patient support				
31	Insufficient time to finish tasks				
32	Too many non-nursing task				
33	Not enough staff in unit				
34	Not enough time to respond to needs of patients families				
35	Demands of classification systems				
36	Having to work though breaks				
37	Making decisions under pressure				
38	Uncertainty about treatment				
39	Physician ordering inappropriate treatment for patient				
40	Physician not present in a medical				

	emergency				
41	Feeling in adequately trained				
42	No knowing what patients or family should be told				
43	Being exposed to hazards				
44	Being in charge with inadequate experience				
45	Uncertainty about operation and functioning of equipment				
46	Fear of making mistake				
47	Patients' Unreasonable demands				
48	Unreasonable demands by patients' families				
49	Being blamed for things that go wrong				
50	Having to handle patient's families				
51	Dealing with violent patients				
52	Dealing with abusive patients				
53	Dealing with abuse from patient's families				
54	Uncertainty about being reported by patient's families				
55	Being sexually harassed				
56	Discrimination against race				
57	Discrimination against sex				

THE COPING STRATEGIES TO THE ICU STRESS

SN	Variables	Response			
	Coping Strategies to the ICU Stress	Not at all	Sometime	Most of time	Always
1	Turning to work or other activities to take my mind off things				
2	Getting emotional support and advice from other colleagues and friend				
3	Use of alcohol or other drugs to make him/her feel better				
4	Joking about the situation				
5	Watching the movies/ TV/ other hobbies activities				
6	Find comfort in religion or spiritual beliefs				
7	Blaming him/ herself for things that happened				

Part V: 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 the number that applies your current satisfaction level in front of ea

1 = Very Dissatisfied 2 =Moderately Dissatisfied 3= Moderately Satisfied 4 = Very Satisfied

Write the number in front of questions

01	Pay (Salary) you receive from your hospital as a nurse
02	Annual leave you receive from the hospital
03	Sick leave you receive from the hospital
04	Hours that you work in the hospital
05	Flexibility in scheduling your working hours
06	Your satisfaction in your shift rotation
07	Opportunity for part-time work
08	Flexibility in scheduling your weekends off
09	Compensation for working weekends & Holidays
10	Maternity leave time given by the hospital
11	Recognition from your head nurse for your work
12	Interaction with your nursing peers/partners
13	Interaction with the physicians you work with
14	Availability of medical equipment's/supplies to deliver quality
15	Satisfaction with the nursing care given to your clients
16	Opportunities for social contact with your colleagues after work
17	Opportunities for interact professionally with other disciplines
18	Opportunities for further education/degree or post graduate
19	Opportunities to participate in morning rounds
20	Opportunity to make autonomous nursing care decision
21	Opportunities for on job training/short term training
22	Recognition for your work from superiors
23	Recognition for your work from peers/ partners
24	Encouragement and positive feedback received from your matron
25	Opportunities to participate in nursing research
26	Opportunities to write and publish
27	Your responsibility in your unit/ward

28 Your control over conditions in your working unit/ward