ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

HEALTH PROFESSIONALS' PSYCHOLOGICAL DISTRESS AND ASSOCIATED FACTORS IN THE POST-PANDEMIC PERIOD OF COVID-19 AT EKA KOTEBE GENERAL HOSPITAL, ADDISABABA, ETHIOPIA

BY

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RESEARCH PROJECT SUBMISSION FORM

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I, the undersigned MPH student, declare that I have submitted my original work on a title. Health Professionals' Psychological Distress and Associated Factors in the Post-Pandemic period of COVID-19 At Eka Kotebe General Hospital, Addis Ababa, Ethiopia

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APPROVAL BY THE BOARD OF EXAMINATION

This thesis by **Amira Kasim** is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of master's in health systems management and health Policy.

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Acronyms

AOR	Adjusted odds ratio
COR	crude odd ratio
DASS	Depression anxiety stress scale
EKGH	Eka Kotebe General Hospital
GAD	Generalized Anxiety Disorder
HCW	Health Care Worker
MBI-GS	Maslach Burnout Inventory General Scale
MERS	Middle East Respiratory Syndrome
PHEIC	Public Health Emergency of International Concern
POSS	Perceived Organizational Support Scale
PTSD	Post Traumatic Stress Disorder
SARS	Severe Acute Respiratory Stress
WHO	World Health Organization

Abstract

Background: Humanity has battled a variety of pandemics. The Plague, Cholera, and Influenza are the most well-known of these pandemics and have caused the greatest number of fatalities. Now adays COVID-19 Is a global threat affecting all aspects of human life. Globally, the Pandemic affected how individuals' function, reorganizing professional work, requiring people to adjust to the constraints in place and limiting their ability to contact their loved once. Studies on this new pandemic have discovered that psychological distress in healthcare workers, such as anxiety, sadness, somatic discomfort, and burnout were experienced during the outbreak of the disease. However, the majority of studies have been done during the outbreak phase, while little has been done on job stress and psychological adaptability in healthcare personnel during the post-pandemic period.

Objective: To assess Health Professionals' Psychological Distress and Associated Factors in the Post Pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023.

Methods: Institutional based cross-sectional study was done at EKGH. A sample of 416health professionals was included in this study using stratified simple random sampling technique. Self-administered questionnaire was used to collect information. After proper coding, data was entered into SPSS V.27 software. To evaluate the demographic traits and the trends in the concentration of the key variables, descriptive statistics were used. Multivariable logistic regression analyses were used to evaluate the significance of the association at P-value < 0.05.

Result: 10.3% of the individuals reported experiencing psychological distress according to the IES-R scale. The two levels of psychological distress that the participants experienced the most frequently were mild (53.6%) and moderate (33.7%). The results of the multivariate logistic regression analysis showed that professionals with current medical illness (AOR= 4.9; 95%CI 2.39 to 10.2) and current substance users (AOR=3.8; 95% CI; 1.9 to 7.9) have statistically significant relationship with psychological distress.

Conclusion: The findings of the current study confirmed the presence of psychological distress in the epidemic era and the concept that clinical circumstances like medical illness and current substance use affect health professionals' psychological distress as well as their ability to anticipate psychological distress during the post-pandemic period of COVID 19.

Key words: Post-pandemic, COVID 19, Health professionals, psychological distress, Ethiopia

1. Introduction

1.1 Background

Over the years, humanity has battled a variety of pandemics. The Plague, Cholera, and Influenza are the most well-known and have caused the greatest number of fatalities(1).People were unaware of the potential repercussions of a new disease on the entire planet when a novel infection belonging to a known group of coronaviruses was found in China(2).The World health Organization (WHO) designated the development of this novel coronavirus as a Public Health Emergency of International Concern (PHEIC) on January 30, making it the sixth PHEIC under the International Health Regulations and formally referred to it as COVID-19 on February 11,2020(3).

Across nations, the general public's psychological wellbeing has been greatly impacted by the COVID-19 pandemic, as well as the daily mental health of health care workers (4). Frontline healthcare workers are exposed to the COVID-19 pandemic and its high workload and emotional toll, which puts them at a high risk of having or developing psychological distresses(5). Such psychological distresses would further affect their capacity for concentration, performance, and decision-making, increasing the likelihood of medical errors and ultimately endangering both their own lives and those of their patients(6). It is also reasonable to assume that the type of such psychological distress could have a long-lasting impact on their mental health(7).The most common psychological distress among surgical caregivers during COVID-19 were depression, anxiety, stress, and Post-traumatic stress disorder (PTSD), with percentages of 32.8%, 30.8%, 25.9%, and 24.0%, respectively(8).

Since the first case of COVID-19 was confirmed in March 2020, Ethiopia has experienced a greater than typical shock wave of information. No major pandemic has devastated Ethiopia since the 1918 Spanish influenza outbreak, known locally as Yehedar Besheta, which claimed the lives of 50,000 individuals(9). After a century, COVID-19, a pandemic that quickly spread to every nation in the world also hit Ethiopia. Despite the fact that numerous studies have been done on the extent of psychological distress among HCWs in various parts of the nation, little is known about the psychological distress of HCWs in the post-pandemic period, especially in developing countries like Ethiopia(10).

1.2 Statement of The Problem

Front-line health professionals that deal directly with patients have higher levels of psychological distress like anxiety and have worse outcomes. Health professionals in high-risk environments are more susceptible to experiencing higher levels of occupational stress, weariness, and burnout. They are also more prone to worry contracting an infection and spreading it to others(11). According to a study about 27% of the medical staff in Toronto during the SARS outbreak in 2003 expressed psychological distress including PTSD symptoms(12).Similarly according to a study conducted in a tertiary care center in Germany, healthcare professionals who are committed to their careers and are properly trained may experience the stress of caring for a seriously ill Ebola patient(13).

In Taiwan in the emergency room and the mental ward, 27% of the medical staff experienced post-traumatic stress disorder(PTSD) during the 2003 SARS-CoV outbreak(14). The study's findings also showed that those with a history of illness are more likely to experience psychological distress than those without it, as well as greater subjective overload and fear of contracting COVID-19 from patients(15).The prevalence of psychological distress was 71.2% among healthcare personnel in Hubei province, Wuhan, China, who had been exposed to the 2019 Coronavirus disease (COVID-19)(16).

According to WHO, symptoms of depression have tripled in prevalence in Ethiopia compared to pre-pandemic estimates, and some population groups are more vulnerable to psychological distress brought on by COVID 19 (17).

The majority of research conducted at the national and international levels on the psychological health of health professionals has been on acute hospital settings, such as wards and testing centers for the COVID-19 and accident and emergency departments(18).It is crucial to investigate occupational stress and psychological wellbeing in health professionals under the influence of COVID-19 regular epidemic prevention and control working environment and identify effective resource management to lessen the negative impact of epidemic-related job stressors.

Although it is known that psychological distress caused by pandemics would endure for a long time and have a major influence on morbidity, mortality, and productivity, there is inadequate research available on the psychological wellbeing of health professionals during the COVID-19 post-pandemic era.

1.3 Significance of The Study

This study is expected to fill the evidence gap seen in availability of study done in psychological distress and associated factors in the post pandemic era of COVID-19. The result of the study will also help to inform policy makers to consider the important contributing factors for psychological distress while planning to improve health professionals' psychological wellbeing. The study will also be expected to shed light regarding the significant associated factors on post pandemic psychological distress by coming up with relevant, evidence-based recommendations for addressing issues related to them. Findings from this study can guide program managers on how to make health professionals psychologically well and consequently, reduce the associated factors of distress in Ethiopia and probably other developing countries with similar challenges. Policy makers, administrators in the healthcare profession, as well as other stakeholders could also utilize the outcome as a starting point for developing and implementing interventional measures. It will also help other researchers as base line data for their work.

2. Literature

2.1 Overview of psychological distress in health professionals

2.1.1 Psychological distress

The unpleasant feelings or emotions you could experience when you're feeling overwhelmed are referred to as psychological distress. These emotions and feelings might interfere with your daily life and change how you interact with others. When you are exposed to pressures that you are unable to handle, psychological distress occurs. These stressors may include traumatic experiences and significant life events. daily pressures include relationships, work stress, family stress, and health concerns(19).

2.1.2 Health professionals

A health professional, often known as a healthcare worker, is a person who provides medical advice and treatment based on formal education and experience. Health professionals are essential to increasing the population's access to high-quality healthcare. Based on the primary health care approach, they give vital services that support wellness, prevent disease, and provide health care to individuals, families, and communities (20).

2.1.3 psychological distress in health professionals'

The health and social care industry can be chaotic, filled with strong emotions, stressful, and lacking in resources. As a result, employees frequently become stressed out. Burn-out, which is characterized by feelings of being constrained, unmotivated, and demoralized in their professional job, is a word frequently used to describe long-term stress in the workplace. Even before the pandemic, healthcare personnel' working circumstances have always been difficult (19).Many healthcare professionals prioritize the health of others before their own needs. This commitment to the patients can appear admirable at first impression. However, it may end up being detrimental if it delays or obstructs employees from receiving the support they require for their personal health and well-being (21) .

2.2 Magnitude of psychological distress during COVID-19

Although there are numerous causes that might lead to psychological distress, Health Professionals tend to have a significant association with disease outbreaks and pandemics(22). For health professionals to provide healthcare effectively and efficiently in pandemic scenarios, they must act quickly and decisively. The WHO recognized this and released a COVID-19 guideline on mental health and psychological distress to promote the mental and psychological health of HCWs throughout this outbreak(6,23).

The organization's immediate response was founded on past and current research regarding the severity of psychological distress caused by disease outbreaks and pandemics among Health Professionals and the effects it had on them. Numerous research carried out during the SARS pandemic suggested that a large percentage of Health Professionals were experiencing psychological distress (23,24). Systematic review findings showed that both during and after the SARS outbreaks, the prevalence of anxiety, depression, acute and post-traumatic stress disorder, and burnout was significant(25).

According to evidence from a systematic analysis on the effects of epidemics and pandemics related to the Middle East respiratory syndrome (MERS), Ebola, and COVID-19, depressed symptoms were reported by 27.5%–50.7% of Health Professionals and severe anxiety symptoms by 45% of them(22).

According to a global systematic review and meta-analysis, the prevalence of depression and anxiety among health care workers (HCWs) during the COVID-19 pandemic was 23.2% and 22.8%, respectively(26). The prevalence of general psychological symptoms during outbreaks ranges from 17.3% to 75.3%, and significant levels of stress from working closely with those who were directly impacted by the pandemic were recorded in 18.1% to 80.1%(22).Using the Depression, Anxiety and Stress Scale (DASS) screening tool, a cross-sectional study of Australian nurses found that 32.4% of them had depression, 41.2% had anxiety, and 41.2% had stress, whereas in Hong Kong, qualified nurses were more likely to experience mild to severe depression, anxiety, and stress, with prevalence rates of 35.8%, 37.3%, and 41.1%, respectively(27,28). The incidence of psychological distress was found to be 71.2% in Health Professionals exposed to COVID-19 in Hubei province, Wuhan, China(29).

2.3 Determinants of psychological distress

2.3.1 Socio-demographic factors

The COVID-19 pandemic significantly raised the incidence of psychological distresses in the general population. PTSD prevalence ranged from 4% to 41%, and major depression prevalence increased by 7% because of the outbreak. These psychological distresses may be more common in women, as well as those with lower socioeconomic position, poorer levels of resilience, frequent use of social media, and interpersonal conflict. Psychological distress can also occur in healthcare professionals as a result of dealing with stressful community events(30).

According to other numerous research, the following factors are closely correlated with the aforementioned mental health outcomes: female sex, single status, profession (nurse/doctor), workplace (ICU/emergency room), increased workload, lack of sleep, and anxiety(31).

Similar research on 1257 healthcare workers in a Chinese tertiary hospital found that during the early stages of the pandemic, there was a significant prevalence of psychological distress symptoms among HCWs. Overall, symptoms of depression, anxiety, sleeplessness, and distress were reported by 50.4%, 44.6%, 34.0%, and 71.5% of health professionals, respectively. These psychological issues affected nurses, women, and frontline HCWs more than other groups(29).Factors associated with COVID-19-related stress on residents of Gondor university include age, married status, religion, occupation, family size, history of medical conditions, past and present cigarette smoking, past and present chat chewing, and marital status(32).

2.3.2 Major associated factors

The most common psychological distresses among surgical caregivers during COVID-19 were depression, anxiety, stress, and PTSD, with percentages of 32.8%, 30.8%, 25.9%, and 24.0%, respectively(8). During the COVID-19 crisis, there was a substantial correlation between the frequency of medical symptoms and psychological distress among Health Professionals(33). Similar findings have previously been made for HCWs who had close contact with Ebola patients during the outbreaks in Sierra Leone in 2014 and the Democratic Republic of the Congo in 2018; they experienced high levels of fear and the negative impacts of stigma(34).

The most prevalent mental health conditions that manifest during such a severe global health crisis are depression, anxiety, insomnia, and psychological distress (26). According to WHO, symptoms of depression have tripled in prevalence in Ethiopia compared to pre-pandemic estimates, and some population groups are more vulnerable to psychological distress brought on by COVID(17).

Burnout prevalence varies widely among specialties, with general surgery, anesthesia, obstetrics, and gynecology, and having the highest frequency (42.5%). orthopedics; low frequency (23.5%) for otolaryngology and neurology; intermediate prevalence (29.4%) for internal medicine, plastic surgery, and pediatrics. The prevalence of emergency routine is higher among residents from medical specialty schools that deal with immediately life-threatening situations and shift overload. This routine is a crucial factor of heterogeneity. Age appears as a protective factor: burnout levels in doctors tend to decline with age, presumably because younger doctors have a more "idealistic" and compassionate mindset (35).

Frontline healthcare professionals are faced with difficult responsibilities, critical decisions, and a significant risk of infection(36). Health Professionals are under pressure due to a variety of factors, including a heavy workload, the perception that COVID-19 is severe, predictable supply shortages, the inability to provide competent medical care, worries about infection, and worries about the health and safety of family members and patients(37). However, most of the research has been done during the outbreak phase, while little has been done on job stress and psychological distress in healthcare workers during the post-pandemic period. Work experience in epidemics could have long-term effects on the psychological well-being of healthcare workers, according to research findings from previous major epidemics(38). In a recent Ethiopian study done in the online, anxiety was reported in 26.8% of all types healthcare workers during the early COVID-19 pandemic(39). In another study, 40.2% of HCWs in South West Ethiopia reported having psychological distress(40).

Smoking and excessive alcohol consumption are two unhealthy lifestyle choices that have been linked to an increased risk of depressive symptoms (41). Furthermore, it appears that in recent decades, the association between smoking and psychological distress has grown exponentially (42).

It is evident that HCWs throughout the healthcare system experienced a significant amount of psychological distress during the COVID-19 outbreak. Some people may have temporary psychological distress, which shouldn't be pathologize(43).Indeed, despite of the significant emotional and cognitive difficulties it entails, there is a sense that many Health Professionals may derive relevance and satisfaction from the COVID-19 response(44).

Others, however, risk the chance of having this distress persist and worsen over time. Due to the fact that non-COVID healthcare issues, including as mental health, were not adequately treated during the pandemic crisis, there is likely to be a considerable increase in demand for primary and community care services in Ireland(45). Despite all of this data, healthcare professionals' psychological wellbeing is often neglected in practice, and this is especially true in developing nations like Ethiopia, where the situation is often no better than average(46).To prevent burnout and ensure the sustainability of healthcare services in the post-pandemic environment, it is urgently necessary to find strategies to safeguard the well-being of individual HCWs in all aspects of the healthcare system.

Health professionals generally tend to have a significant association with disease outbreaks and pandemics. For front-line HCWs to provide healthcare effectively in pandemic scenarios, they must act quickly and decisively. The WHO recognized this and released a COVID-19 guideline on mental health and psychological distress. The COVID-19 pandemic significantly raised the incidence of psychological distresses in the general population. PTSD prevalence highly increased and major depression prevalence also show increment. These psychological issues affected nurses, women, and frontline HCWs more than other groups.

Conceptual Framework

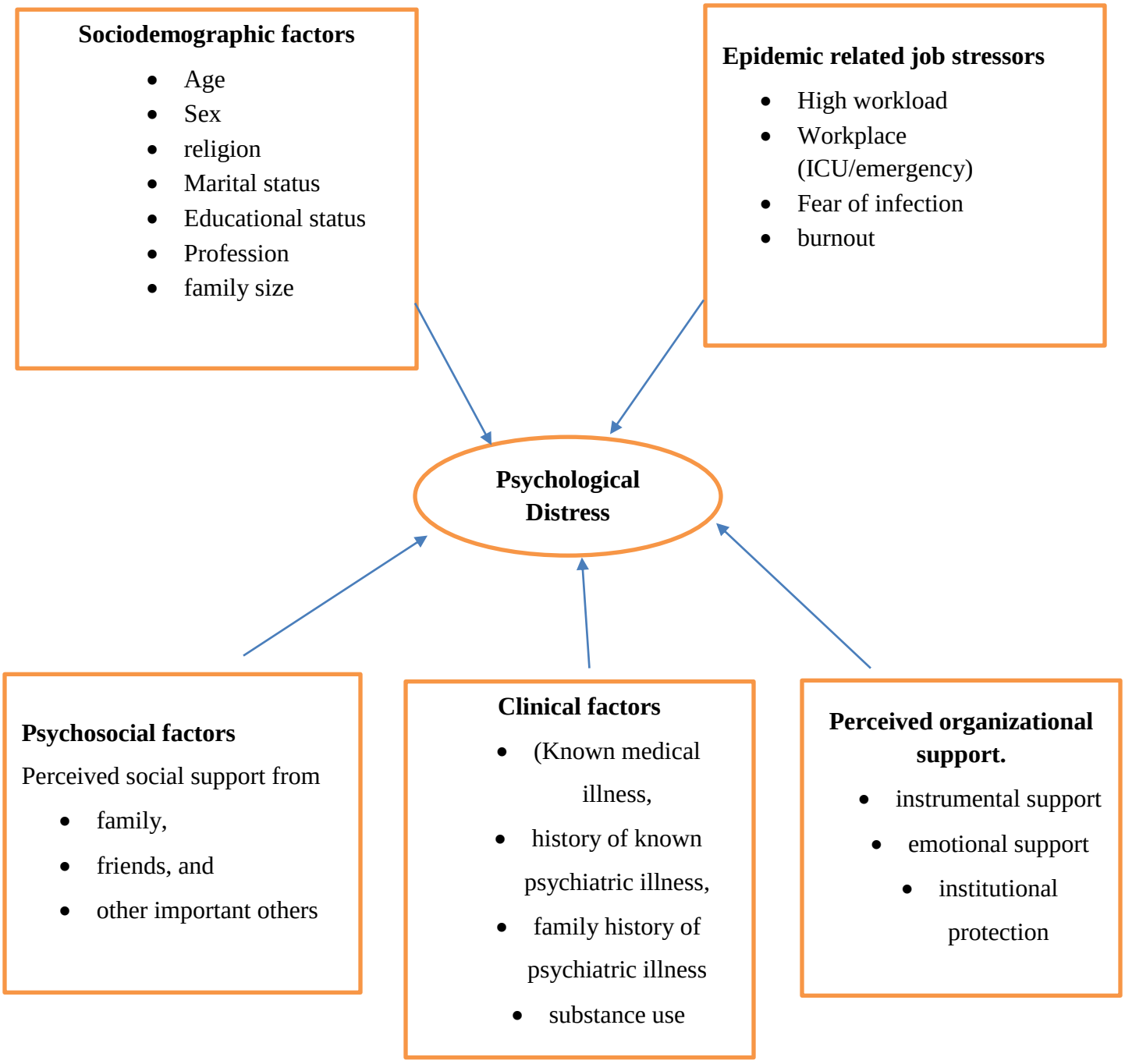

Figure 1. Conceptual framework of factors affecting psychological well-being of health professionals (resource: different literatures)

3. Objectives

3.1 General Objective

To assess Health professionals' psychological distress and associated factors in the post pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023.

3.2 Specific Objectives

- To Assess health professionals' psychological distress in the post pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023.
- To identify the associated factors of Health professionals' psychological distress in the post pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023.

4. Methodology

4.1 Study Design

Institutional based cross-sectional study design was conducted.

4.2 Study Area and Period

The Eka Kotebe General Hospital is situated in Ethiopia's capital city of Addis Ababa. With 16 designated ICU beds. It has a 5-floor structure that offers services primarily related to mental health and a 9-floor building for administrative tasks.

It was first constructed as a part of the Amanuel Mental Specialized Hospital, the only mental referral hospital in the nation. Of the 350 beds in the hospital, 175 are used for the care and treatment of patients with mental illnesses, while the remaining 175 beds are used for surgery, gynecology and obstetrics, internal medicine, pediatrics, ophthalmology, dermatology, and dentistry. It started running as a community service after being formally established in 2009.The nation's Ministry of Health made the decision to designate the hospital as a national treatment center for the pandemic immediately after hearing about COVID-19 becoming widely known. It then became the first hospital in the nation to devote itself entirely to this cause, and after making all the necessary preparations—the most important of which was maximizing its ability to provide inpatient service for 750 beds—it started only admitting and caring for COVID-19-positive patients. after the covid 19 pandemic. now it is temporarily serving as an armed forces treatment center. Data for this study was collected from April 1-30, 2023.

4.3 Population

4.3.1 Source Population

All health care professionals (nurses, physicians, pharmacists, midwives, laboratory technicians and others (emergency surgeons, anesthesiologist, sub specialists)) who are working at Eka Kotebe General Hospital was participated during the COVID-19 campaign.

4.3.2 Study Population

All health care professionals who participated in the COVID-19 campaign are working at the hospital during the study period.

4.4 Sample Size Determination

Sample size was determined using a single population– proportion formula under assumption of 49.5% (0.49) prevalence of health professionals' psychological distress during COVID-19 (10), standard normal distribution *Z*-value of 1.96, 95% CI, statistical significance at α=0.05, and a 10% nonresponse rate.

Thus:

$$n = \frac{Z^2(1/2)\,P(1-P)}{d^2}$$

Where n= minimum sample size required

p= prevalence of health professionals' psychological distress during covid 19 (0.49)

d= the margin of sampling error tolerated (0.05)

Z (1/2) standard normal score at 95% confidence interval = 1.96

$$n = \frac{(1.96)^2\,(0.49)\,(1-0.49)}{(0.05)^2} = 384$$

After adding a 10% non-response rate, 38the total sample size was 422.

Proportions that are used in sample size calculation are taken form Psychological distress and associated factors among healthcare professionals in Ethiopia during the COVID-19 Cross-Sectional Study (10).

Table 1: Assumptions and calculated sample sizes for study objectives

Factor considered	Percent of cases (psychological distress)	AOR	assumptions			Final sample size after adding 10% non-response
			Power (%)	Confidence interval (%)	ratio	
Burnout	46.8%	2.2	80%	95	1:1	233
Female sex	43%	2.99	80%	95	1:1	123
Workplace (ICU/emergency)	37.5	1.89	80%	95	1:1	352

Sample size was calculated for remaining objectives such as burnout, socio demographic factors associated with psychological distress. The sample size for the first objective was the biggest one, so sample size of **422** was taken as a final sample size for this study. Above here is table that has assumptions taken using epi info version 7.2.3.1 by double population formula using 95% CI, 80% power and major factors were considered during sample size calculation.

4.5 Sampling Procedure

To select the study participants, first, health care professionals who had a work experience of 2years and above was included. then after, a stratified simple random sampling technique was used to select each professional proportionally from all categories of professions based on the number of professionals in each category.

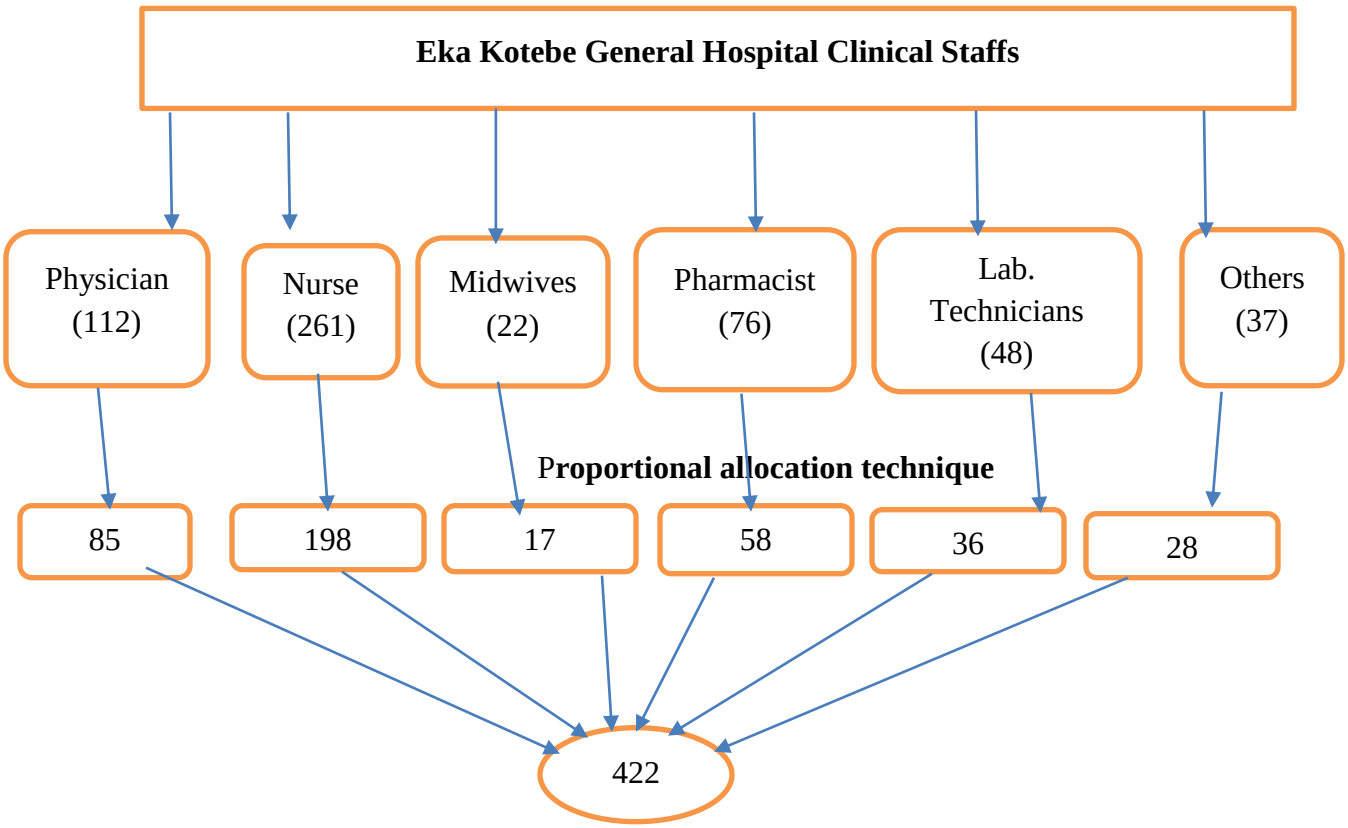

Figure.2 Schematic presentation of the sampling procedure of study on Health professionals' psychological wellbeing and associated factors in the post pandemic period of covid 19 at eka Kotebe general hospital, Addis Ababa, Ethiopia 2023

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4.6 Data Collection Tools and Procedures

Basic demographic information about the participants, such as gender, age, career, specialty, year of work experience, income, and working conditions during the COVID-19 pandemic was included in the questionnaire.

The **Impact of Event Scale revised (IES-R**) was created to assess the psychological distress caused by catastrophic unplanned events in 1979, Horowitz created the first version of this device. It was proven to have strong internal consistency in other studies. The intrusion symptoms, avoidance symptoms, and high arousal symptoms was measured by this test, which has a 5-point Likert type scale with a range of 0 to 4, where never corresponds to 0 and 4 to always. The item can alternatively be categorized using the IES-R scale's score ranges of 0–8 mild, (26-43) moderate, and severe (44–88).The cutoff for a "probable PTSD case or psychological distress" in this study was assessed to be a score of over 33(47).

The depression, anxiety, and stress were determined using ***DASS-21***scales. The scale comprises three subscales and 21 elements. Seven items on each scale are scored on a Likert scale with a range of 0 to 4. The score ranges for the depression subscale are as follows: normal (0–9), mild depression (10–12), moderate depression (13–20), severe depression (2–27), and extremely severe depression (28–42). The scores on the anxiety subscale was divided as follows: normal (0–6), mild (7-9), moderate (10–14), severe (15–19), and extremely severe anxiety (20–42)(48).

The stress subscale is also evaluated, and the results was classified into four categories: normal (0–10), mild stress (11–18), moderate stress (19–26), severe stress (27–34), and extremely severe stress (35–42). The scale has a strong track record of validity and reliability from numerous prior investigations. The scale's reliability rating was 0.87(49). The **Oslo 3-item Social Support Scale** (OSS-3) has been used in numerous research to measure social support, proving its viability and predictive validity. Its combined scores, which range from 3 to 14, total 14. Those with poor social support received scores of 3 to 8, those with moderate social support received scores of 9 to 11, and those with strong social support received scores of 12 to 14 (50). Perceived organizational support was measured using 8-items survey of perceived organizational support scale.

The measure was developed based on the existing measurements of organizational support (51). Participants were asked to rate the items on a 7-point Likert scale (0= strongly disagree, 6 = strongly agree), with higher than the mean scores indicating higher levels of perceived organizational support.

Previous research has supported the reliability and validity of this measuring instrument with Cronbach's alpha reliability coefficient of 0.96 and 0.95.

To collect Clinical factors such as medical illness, history of mental illness, physical pain, sleep deprivation and current substance use a yes/no questionnaire was developed and adopted from previous study done at EKGH(46) .

Self-administered questionnaires were used, and the questionnaires was distributed to the participants during their free time, and they were instructed to complete them and return them to the supervisors. Prior to participating in data collection, participants were instructed about the ethical principles of confidentiality and data management by the supervisors, who were PHOs with BSc degrees. They were also expected to explain and clarify any unclear or ambiguous questions and collect the completed questionnaires. The participants discussed the processes and be offered to participate in the study with their informed permission after obtaining the required orientation.

4.7 Study Variables

4.7.1 Dependent Variables

Health professionals' psychological distress

4.7.2 Independent Variables

- sociodemographic characteristics of participants (sex, age, marital status, educational status, profession, and place of residence),
- clinical (known medical illness, history of known psychiatric illness, family history of psychiatric illness), experiences of substance use (current and lifetime substance use).
- psychosocial (the available social support) and
- work environment, work schedule
- availability of resources

4.8 Operational Definitions

Psychological distress: Scoring over 33 was considered as a cut off points using the Impact of Event Scale revised (IES-R). The item can also be categorized into levels, the score range of IES-R scale was 0–8 as subclinical, 9–25 as mild, 26–43 as moderate, and 44–88 as severe.

Depression, anxiety, and stress: evaluated using the Depression, Anxiety, and Stress Scale's (DASS-21). Participants were classified as having depression if their score was 10 or higher; anxiety if it was 8 or higher; and stress if it was 15 or higher.

Current substance use: Use of alcohol, tobacco and khat once or more in the past 3 months.

Health professionals: In the current refers to personnel licensed in any of health fields.

4.9 Inclusion And Exclusion Criteria

4.9.1 Inclusion Criteria

All medical professionals who had ever treated COVID-19 patients during the outbreak, including physicians, nurses, midwives, clinical labs, and pharmacists.

4.9.2 Exclusion Criteria

Health professionals who did not participate in the covid 19 campaign.

4.10 Data Quality Control

Prior to data collection, a pre-test was conducted on 5% of the sample size at St. Paul. Hospital. the questionnaire was pre-tested before the real data collection days. Additionally, data collectors and supervisors received two days of training. Supervisors were monitoring the data collection process to see how it's progressing. The lead investigator and supervisors were additionally examining the completion of filled-out questionnaires at the conclusion of each data collection day. Before entering any data, the primary investigator reviewed each questionnaire.

4.11 Data Processing and Analysis

After proper coding Data was entered into SPSS V.27 software. The frequency, percentage, and means of descriptive analyses was carried out, and presented with tables and graphics.

The Dass 21, IES-R and perceived social support questionnaires were transformed and recoded into different variables based on their cutoff point. The dependent variable and organizational support were dichotomized into “yes” and “no”.

The associated factors of psychological distress were identified using a binary logistic regression analysis. In the bivariate analysis, variables having a p value less than 0.2 were added to the multivariate analysis. With 95% confidence intervals, the strength of relationships was calculated for both the crude OR and the adjusted OR (AOR).

Finally, variables substantially linked with psychological distress were found using a p value 0.05 in the multivariable logistic regression analysis. The Hosmer and Lemmeshow goodness-of-fit test was employed in the current investigation to confirm the assumption of logistic regression.

4.12 Ethical Considerations

Ethical clearance was obtained from the Research and Ethical clearance Committee of the School of Public Health of the College of Health Sciences of Addis Ababa University. A letter of cooperation was delivered to the hospital from the School of Public Health and other respective bodies. From each study participant, verbal and written consent was obtained. Each participant got information regarding the study's goal, its scope, and their right to decline participation and have the data collection stopped (informed consent). In addition, all data obtained from study participants was kept secret manner and used only for the research. Confidentiality about the participants' information was maintained throughout the study.

4.13 Dissemination Plan

The results of the study will be disseminated to the responsible administrators: - Eka Kotebe General hospital, Addis Ababa city administration health bureau, the School of Public Health at Addis Ababa University Office. The thesis will also be submitted to the Ministry of health. Findings will also be presented in different workshops and seminars and will be published in a peer-reviewed journal.

5. Result

5.1 Socio-Demographic Characteristics of study population

A total of 416 healthcare workers were enrolled in the study with a response rate of 98.5%. More than half (53.6%) were males and the rest 46.3%were females. Nearly half (49.8%) married, 38.2 of the respondents were single and 125 of them were divorced and widowed. 32.2% of them were living with their families and 30% ,21.4, and 25.5 were living with their children, spouse and alone respectively at the time of the study. Furthermore, 37.5% of them are Orthodox Christian, around three-quarters (68%) degree holders, and nearly half (49.5%) aged 34-44years. (45.7%) nurses, nearly a quarter (20.7%) Doctors. 4.1%,13.9%, 8.9% were midwifery, pharmacist, and lab technician respectively. The remaining 6.7% were radiologists, anesthesiologists, and specialists (**table 2**).

Table 2 Distribution of socio-demographic factors among health professionals at EKGH, Addis Ababa, Ethiopia, 2023 (n=416)

Socio-demographic characteristics		Percent%	Count
Age	23_33	32.7%	136
	34-44	49.5%	236
	>45	17.8%	74
	Total	**100%**	**416**
Sex	Male	53.6%	223
	Female	46.4%	193
	Total	**100%**	**416**
Religion	Muslim	33.7%	140
	Orthodox	37.5%	156
	Protestant	25.7%	107
	Others	3.1%	13
	Total	**100%**	**416**
Marital status	Single	38.2%	159
	Married	49.8%	207
	Divorced/widowed	12.0%	50
	Total	**100%**	**416**

Current living status	With spouse	21.4%	89
	With children	30.0%	125
	With family	22.8%	95
	Alone	25.5%	107
	Total	**100%**	**416**
Profession	Nurse	45.7%	190
	Midwifery	4.1%	17
	Physician	20.7%	86
	Pharmacist	13.9%	58
	Lab technician	8.9%	37
	Others	6.7%	28
	Total	**100%**	**416**
Education status	Diploma	12.3%	51
	Degree	68.0%	283
	Master's and above	19.7%	82
	Total	**100%**	**416**
Year of work experience	<3	0.0%	0
	>3	100.0%	416
	Total	**100%**	**416**

5.2 Distribution of Clinical Factors

In sum, from the total of 416 participants a quarter 114 (27.4%) of health professionals had current medical illness, nearly one fifth 79(19.0%) of the health professionals had a history of mental illness, 50(12.0%) a family history of mental illness, and three-quarters 341(82.0%) reported no sleep deprivation.75(18.0%) and 96(23.1%) of the respondents reported also physical pain and current substance use, respectively (**table 3**).

Table 3 distribution of clinical factors among health professionals at EKGH, Addis Ababa Ethiopia, 2023 (n 416)

Clinical factors		**Count**	**Percent %**
Current medical illness	Yes	114	27.4%
	No	302	72.6%
	Total	**416**	**100%**
Previous history of mental illness	Yes	79	19.0%
	No	337	81.0%
	Total	**416**	**100%**

Family history of mental illness	Yes	50	12.0%
	No	366	88.0%
	Total	**416**	**100%**
Physical pain	Yes	75	18.0%
	No	341	82.0%
	Total	**416**	**100%**
Sleep deprivation	Yes	79	19.0%
	No	337	81.0%
	Total	**416**	**100%**
Current substance use	Yes	96	23.1%
	No	320	76.9%
	Total	**416**	**100%**

5.3 Prevalence of psychosocial Factors

5.3.1. Level of Perceived Social Support

Participants were asked how many people were so close to them if they got personal problem 264(63.5%) of them have 1-2 close people and 13.7% of them have 3-5 people who are close to them and 10.3% have more than 5 peoples close to them when they got personal problems. They were also asked how much interested and concerned do peoples show in what they do, Some and little peoples have interest in 14.7%,4.1% of study participants respectively. For more than (322) 77.4% of health professionals it is possible to get practical help from neighbors. Only (11)2.6% and (17)4.1% of professionals it is very difficult and difficult to get practical help from neighbors respectively (**table 4**).

Table 4. distribution of perceived social support among health professionals at EKGH, Addis Ababa Ethiopia, 2023 (n 416)

Perceived social support		Count	percent %
How many people are so close to you if you have personal problem	None	52	12.5%
	1-2	264	63.5%
	3-5	57	13.7%
	5+	43	10.3%
	Total	**416**	**100%**

How much interested and concern do people show in what you do	None	11	2.6%
	Little	17	4.1%
	Uncertain	322	77.4%
	Some	59	14.2%
	a lot	7	1.7%
	Total	**416**	**100%**
How easy is it to get practical help from neighbors	very difficult	11	2.6%
	Difficult	17	4.1%
	Possible	322	77.4%
	Easy	59	14.2%
	very easy	7	1.7%
	Total	**416**	**100%**

The overall perceived social support was also assessed and Only 4.6 % of the health Professional's experienced high perceived social support, (29.3%) had moderate social support and most of the health professionals (66.1%) felt to have poor social support (**table 5**).

Table 5. Level of perceived social support among health professionals at EKGH, Addis Ababa Ethiopia,2023 of the participants (n 416)

		Frequency	Percent
Perceived social support	Poor	275	66.1%
	Moderate	122	29.3%
	Strong	19	4.6%
	Total	**416**	**100.0**

5.3.2. Prevalence of Depression, Anxiety, and Stress (DASS 21)

Table 6. Level of DASS 21 among health professionals at EKGH, Addis Ababa Ethiopia, 2023

Level of DASS 21		Count	Column N %
Level of depression	Normal	287	69.0%
	Mild	58	13.9%
	Moderate	71	17.1%
	Severe	0	0.0%
	extremely severe	0	0.0%
	Total	**416**	**100%**

Level of stress	Normal	269	64.7%
	Mild	97	23.3%
	Moderate	50	12.0%
	Severe	0	0.0%
	extremely severe	0	0.0%
	Total	**416**	**100%**
Anxiety level	Normal	261	62.7%
	Mild	18	4.3%
	Moderate	137	32.9%
	Severe	0	0.0%
	extremely severe	0	0.0%
	Total	**416**	**100%**

In this study the prevalence of depression, anxiety and stress were assessed using the DASS 21. Among 416 health professionals 69%, 64.7% and 62.7% of participants have normal depression, anxiety, and stress levels, respectively. 13.9% percent of the study participants have mild depression level whereas nearly one fifth, 17.1%, of the participants have moderate level of depression. Among 416 of them no one have severe and extremely severe level of depression, anxiety, and stress respectively **(table 6).**

Table 7. Prevalence of depression, anxiety, and depression among health professionals at EKGH, Addis Ababa Ethiopia,2023

Dass 21 variables		Count	Column N %
Overall anxiety	No	279	67.1%
	Yes	137	32.9%
	Total	**416**	**100%**
Overall stress	No	287	69.0%
	Yes	129	31.0%
	Total	**416**	**100%**
Overall depression	No	275	66.1%
	Yes	141	33.9%
	Total	**416**	**100%**

Using the DASS-21 tool the overall prevalence of Depression, Anxiety, and Stress in the post-pandemic period of COVID-19 among health professionals of EKGH was 141 (33.6%), 201 (33.4%) and 142 (32.9%), respectively (**table 7**).

5.4 The level of Organizational support

The level of organizational support was dichotomized in to "yes" and "no" to organizational support. Among health professionals nearly 18.3% (76) of health professionals have a higher level of organizational support and 81.7% (340) of the respondents have a lower level of organizational support as shown in (**table 8)**.

Table 8. Level of organizational support among health professionals based on their Profession at EKGH, Addis Ababa Ethiopia, 2023

Perceived organizational support			
		Frequency	Percent
Organizational support	No	340	81.7%
	Yes	76	18.3%
	Total	**416**	**100%**

5.5 Prevalence of Psychological Distress

In this survey the prevalence of psychological distress among health professionals was 10.3% (95% CI) (**figure 3**). From all participants, 12.7% reported subclinical psychological distress, more than half 53.6% rated mild psychological impact, and the rest of them (33.7%) reported moderate psychological distress, above three quarters (89.7%) showed negative for psychological distress (score of >33**) (table 9**).

On the other hand, considering the symptom cluster of IES-R scale, Avoidance symptoms were found to be the most concerned among health professionals compared to intrusion symptom and hyper arousal subscales. Among all health professionals' nurses have higher value of exposure to psychological distress (**figure 4**).

Table 9. Level of impact of event scale _revised among health professionals at EKGH, Addis Ababa Ethiopia,2023 (n 416)

Impact of event scale		
	Frequency	Percent
Sub-clinical	53	12.7
Mild	223	53.6
Moderate	140	33.7
Total	416	100.0

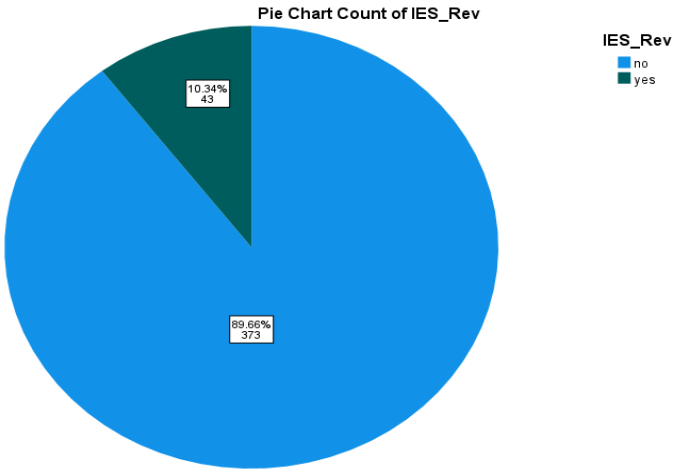

Figure 3. Overall level of psychological distress among health professionals at EKGH, Addis Ababa Ethiopia,2023

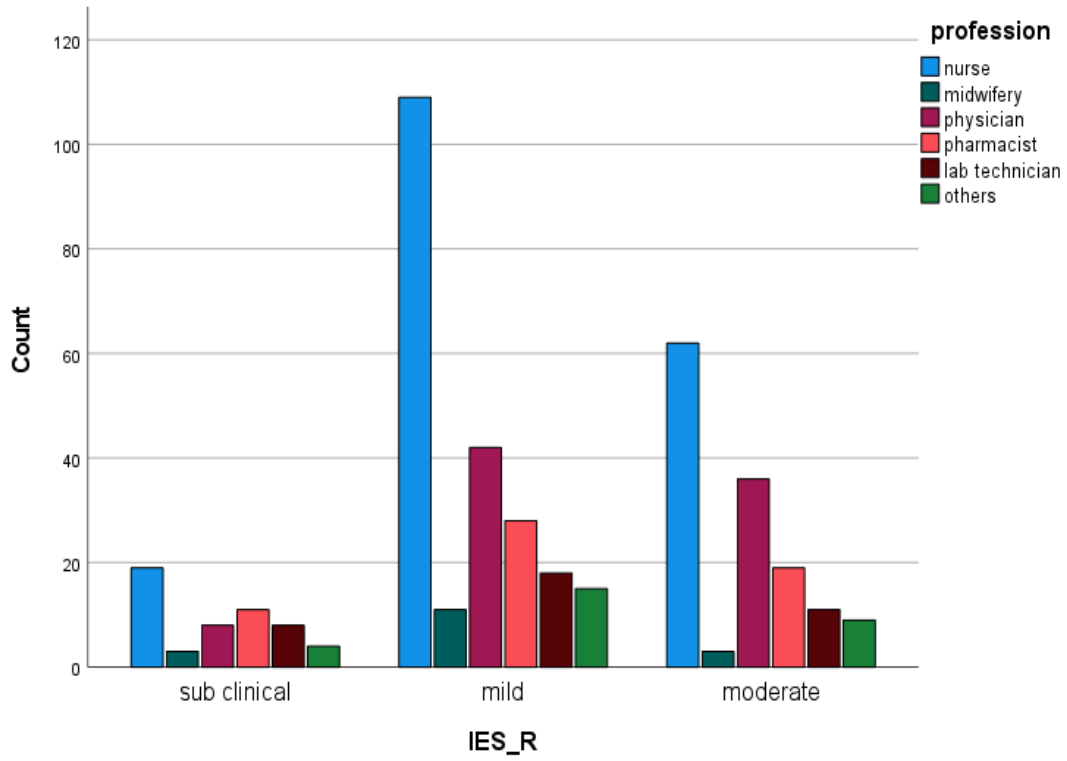

Figure 4. Level of IES-R among health professionals based on their Profession at EKGH, Addis Ababa Ethiopia,2023

5.6. Factors associated with psychological Distress

5.6.1 Socio-demographic factors associated with psychological Distress

For further analysis, the dependent variable psychological distress was dichotomized into "yes" and "no" distress. Odds of having psychological distress was compared among potential factors only professionals' no socio demographic factor showed a significant association on bivariate analysis. Sex, marital status, age, current living status and profession of study participants of did not show any significant association with the whether they are distressed or not distressed.

Table 10. bivariate analyses of socio demographic factors associated with psychological distress among health Professionals at EKGH Adiss Ababa (n=416), 2023

Variables		Psychological distress		COR (CI 95%)	P-value
		Yes	No		
Sex	Male	18 (8.1%)	205 (91.9%)	1	
	Female	25(13%)	168 (87%)	1.69(0.89-3.2)	**0.106**

Age					
	23-33	14(10.3%)	122 (89.7%)	1	
	34-44	20 (9.7%)	186 (90.3%)	0.9 (0.4-1.9)	0.85
	>44	9(12.2%)	65(87.8%)	1.2 (0.4-2.9)	0.67
Marital status	Single	17(10.7%)	142(89.3%)	1	
	Married	26(12.6%)	181(87.4%)	1.2 (0.62-2.3)	0.58
Current living status	Spouse	7(7.9%)	82(92.1%)	1	
	Children	18(14.4%)	107(85.6%)	1.97 (0.7-4.9)	**0.14**
	Family	6(6.3%)	89(9%)	0.79 (0.2-2.4)	0.68
	Alone	12(11.2%)	95(88.8%)	1.48 (0.5-3.9)	0.43
Profession	Nurse	17(8.9%)	173(91.1%)	1	
	Physician	13(15.1%)	73(84.9%)	1.8 (0.8-3.5)	**0.131**
	Pharmacist	7(12.1%)	51(87.9%)	1.3 (0.54-3.5)	0.483
	Others	6(21.4%)	22(78.6)	2.7(0.9-7.78)	**0.052**

5.6.2 Clinical factors associated with psychological distress

Current medical illness, history of mental illness, physical pain, sleep deprivation and current substance use were other factors assessed in this study if they have an association with psychological distress of health professionals. Then only current medical illness and current substance use showed statistically significant association with psychological distress. The odds of Current medical illness (AOR=4.9: 95% CI; 2.39 to 10.2) was 4.9 times more likely to be associated with psychological distress as compared to respondents with no current medical illness. The odds of psychological distress among health professionals with current substance use was 3.8 times (AOR= 3.8 95% CI: 1.9 to 7.9) higher than those with no current substance use (**table 11**).

Table 11. bivariate and multivariate **analyses of clinical factors associated with**

psychological distress among health Professionals at EKGH Adiss Ababa (n=416), 2023

Variables		Psychological distress		COR (CI 95%)	P-value	AOR (CI 95%)	P-value
		Yes	No				
Current medical illness	Yes	29(25.4%)	85 (74.6 %)	0.14(0.07-0.2)	**0.001***	4.92(2.3-10.2)	**0.001****
	No	14(4.6%)	288(95.4%)	1	**1**	1	-
History of mental illness	Yes	6(92.4%)	73(7.6%)	1.5(0.5-3.6)	0.37	-	-
	No	37(11%)	300(89%)	1	1	-	-
Family history of mental illness	Yes	6(12%)	44(88%)	0.8(0.3-2.06)	0.68	-	-
	No	37(10.1%)	329(89.9%)	1	1	-	-
Physical pain	Yes	11(14.7%)	64(85.3%)	0.6(0.28-1.25)	0.17	-	-
	No	32(9.4%)	309(90.6%)	1	1	1	-
Sleep deprivation	Yes	6(7.6%)	73(92.4%)	1.5(0.6-3.6)	0.37	-	-
	No	37(11%)	300(89%)	1	1	-	-
Current substance use	Yes	25(26%)	71(74%)	0.16(0.08-0.327)	**0.01***	5.37(2.5-11.6)	**0.001****
	No	18(5.6%)	302(94.4%)	1	1	1	

***Significant at <0.2,**

****significant at <0.05**

5.6.3. psychosocial and organizational factors associated with psychological distress

Psychosocial factors like depression, anxiety, stress, perceived social support and organizational support were also assessed in this study. Bivariate analysis showed anxiety and depression relate to psychological distress. Health professionals who were depressed were 2.3 (95% CI:1.01-5.43) times more likely to be psychologically distressed than those with no depression. Professionals that have anxiety were 2.7 (95% CI:1.19-6.3) times more likely to be psychologically distressed than those with no anxiety. Regarding the multivariate analysis odds of depression was 0.37(AOR 0.15-0.9 with 95% CI) times less likely to be psychologically distressed than not depressed **(table 12**).

Table 12. bivariate and multivariate analyses of psychosocial and organizational factors associated with psychological distress among health Professionals at EKGH Adiss Ababa (n=416), 2023

Variables		Psychological distress		COR (95%CI)	P-value	AOR (95%CI)	P-value
		Yes	No				
depression	Yes	20(14.2%)	121(85.8%)	2.3(1.01-5.43)	**0.046***	0.37(0.15-0.9)	**0.039***
	No	23(8.4%)	252(91.6%)	1			
Anxiety	Yes	16(11.7%)	252(90.3%)	2.7(1.19-6.3)	**0.018***	1.6(0.6-4.2)	0.328
	No	27(9.7%)	121(88.3%)	1			
Stress	Yes	17(13.2%)	112(86.8%)	1.76(0.72-4.3)	0.21	-	-
	No	26(9.1%)	261(90.9%)	1			
Perceived social Support	Poor	33(12%)	242(88%)	1	0.26	-	-
	Moderate	10(8.2%)	112(91.8%)	0.65(0.3-1.3)	0.99	-	-
Perceived Organizational support					0.19	-	-
	Yes	11(14.5%)	65(85.5%)	1.63(0.8-3.4)		-	-
	No	32(9.4%)	308(90.6%)	1			

6. Discussion

This study was aimed to investigate psychological distress and associated factors conducted at EKGH on under regular epidemic prevention and control measures. 10.3% of participants reported to have psychological distress in the post-pandemic era of COVID 19.

The prevalence of psychological distress among health workers in this study was lower than that of studies from Korea, Dessie, and Jimma, which showed higher rates of psychological distress (51.5%), 11% (52) and 42% (52) respectively. The instruments used (Kasseler-10(29) vs. the current study (IES-R)), cut off points used, sample size (larger sample in Korean study (1,800 participants) (51) vs. the current study (416 participants), and time period of the study could all be major contributors to the discrepancy. The current study's findings varied from those of a systematic evaluation of the data on the effects of epidemics and pandemics during the MERS, Ebola, and COVID-19 among health care workers (22).

Also In our survey, the prevalence of psychological distress was about 10.3, which differs from research done in Mettu (40) with the same instrument used (IES-R). A score of >33 indicated that over half of the healthcare workers were experiencing psychological distress; this mismatch in our situation may be related to the timing of data collection.

According to the current study, from the findings of the multivariate logistic regression analysis, there was a statistically significant link between current substance users and professionals' psychological distress (AOR=3.8; 95% CI; 1.9 to 7.9) and current medical disease (AOR=4.9; 95% CI; 2.39 to 10.2. This finding is in line with a study conducted in Mettu (40) where Current substance (khat, cigarette, and alcohol) use were all significantly associated to psychological distress (AOR = 6.76; 95% CI (2.15, 21.2), AOR = 5.74; 95% CI (1.83, 18.1), and AOR = 6.28; 95% CI (2.03, 19.5).

Respondents who reported drinking within the previous three months had a higher likelihood of experiencing psychological discomfort than those who did not. It's possible that this is a result of alcohol's effects, which have the potential to harm both our physical and mental health. The relationship between traumatic life events and risky drinking, which increases the risk of psychological distress, was demonstrated in a prior study, which corroborated this (53).

Self-medication is one explanation for the overlap of psychiatric and substance use issues. That is, people utilize a variety of drugs, such as alcohol, khat, and cocaine, to treat their psychological issues. Another explanation is that abusing drugs or alcohol causes psychological distress. Depression and anxiety symptoms may be brought on by substance use, including

intoxication and withdrawal from substances, although they may next spontaneously go away with the use of the substance ceasing and the alleviation of withdrawal symptoms(54).

Furthermore, substance abuse can result in psychological distress over time since its effects may put a person at a long-term disadvantage as it suggests a significant association in our study also.

This study also examined the occurrence of depression, anxiety, and stress among medical professionals following the COVID-19 pandemic. Among the health professionals, 129 (31%), 137 (32.9%), and 141 (33.9%) had stress, anxiety, and depression, respectively. According to a study from China, about half (50.4%) of the HCWs reported experiencing depression, 44.6% anxiety, and 71.5% distress (29). This was more prevalent than depression, anxiety, and distress in our study. The screening method they adopted could be the cause of the discrepancy. The pandemic presented a very low morbidity and mortality rate in Ethiopia, compared to China, which may be the other reason. The duration of the study period might also be a significant factor in the variance of the results.

Approximately one in three study participants had depression in the current study. This result is higher than the one from India, where 25% of research participants felt depressed. The fact that more than half (54%) of the participants in the earlier study were under 25 years old may be one explanation. According to studies, ageing alters the body in ways that make depression more likely to arise, and ageing and inactivity are strongly connected with the development of depression (55).

The findings of the current study are also slightly lower than that of a study conducted in Australia, where 32.4% of nurses reported having depression and 41.2% of nurses reported having both stress and anxiety. The outcomes of this trial were also lesser than those of a nursing study from Hong Kong. In the subsequent study, nurses reported depression in 35.8% of cases, as well as anxiety and stress in 37.3% and 41.1% of cases, respectively(28)(27). The difference might be since those studies were done during the outbreak of COVID_19.

On the wellbeing of health workers, it was discovered that perceived social support and organizational support had no significance with psychological distress. This is consistent with previous studies, which discovered that organizational and social supports did not have association between distress in aftermath of the pandemic(56), also consistent with our case but different in reason. The period of investigation of our survey was in the post pandemic period of

COVID 19 that organizational support was decreased as the outbreak deceased which may be the possible cause in the difference with other studies done during the pandemic period.

In earlier research conducted in China that was different from this study, protective effects of perceived social support and organizational support on the wellbeing of healthcare professionals were discovered. In earlier studies, it was discovered that social and organizational support moderated the link between stress at work and negative emotions (56)and that both supports improved wellbeing even during the COVID-19 pandemic (57).

Perceiving social support was consistently linked to less distress, according to the data. Adequate social support is a resilience element that is well-known to be useful in lowering stress across a variety of stressful contexts and is equally significant for reducing stress among HCW (58).

The findings of the current study show that psychological distress and impact events do not vary significantly depending on the gender and marital status of health professionals. but earlier research revealed that females displayed greater levels of psychological distress. Since all health professionals have more than three years of work experience, there are little data available to evaluate the relationship between job experience and psychological distress(59).

Nevertheless, findings(29), which compared the psychological status of 5446 nurses with that of the general Australian population, provide support for the findings of the current study. The findings indicated that nurses had better overall and physical health, but poorer psychological health, particularly among female nurses.

Study results indicated a higher risk of psychological distress, which is thought to affect the pathogenesis of physical diseases by causing negative affective states (such as feelings of anxiety and depression), which in turn have a direct impact on behavioral patterns or biological processes that influence disease risk, such as COVID-19 infection (60).

7. Strength and limitation

7.1 Strength

The study's strength was the adoption of a standard questionnaire that was contextually adjusted and had a high response rate in comparison to the study's investigated in the past. Due to the lack of studies on settings like this in Ethiopia, the findings will be used as a baseline for further research and will be crucial for policymakers as they construct strategies to decrease situations

by taking steps to reduce the psychological distress brought on by the outbreak and by providing external assistance.

This thesis also provides an answer to the issues raised by earlier research conducted at EKGH, which suggested additional studies and follow-up to assess the development or reversal of reported mental health outcomes and their potential influence on the mental health of healthcare professionals in the aftermath of the COVID-19 pandemic. Because the data collection was through self-administered questionnaires, there is less chance of respondents being biased.

7.2 Limitation

The study entails some restrictions. Participants in the study first hesitated filling out the questionnaire. Second, as the research was cross-sectional, causal relationships cannot be assumed.

Another limitation is the absence of long-term follow-up. mainly because there is no comparable study findings, particularly in Ethiopia, makes it challenging to compare findings. One of the associated factors impact of prior frontline work experience on current psychological health was not investigated. A qualitative approach was not used to address and clarify some research-related inquiries.

8. Conclusion

Overall, the results of this study shed light on the association between some clinical parameters and psychological distress and emphasize the need for more research in this field. A mild level of healthcare professionals was found to be experiencing psychological distress. The findings of the current study confirmed the concept that clinical circumstances like medical illness and current substance use affect health professionals' psychological distress as well as their ability to anticipate psychological distress during the post-pandemic period of COVID 19.

It demonstrated no association of the socio demographic, perceived social support, and perceived organizational support both in bivariate and multivariate analysis. But depression and anxiety were significantly associated with psychological distress in the bivariate analysis. In the post-pandemic era, adequate attention should be paid to the treatments required to support the psychological well-being of healthcare professionals, with a focus on those who use drugs or have a medical condition right now.

9. Recommendation

The following recommendation has been forwarded to the concerned bodies based on the study result.

Managers should be more aware of the psychological distresses that health professionals are experiencing because of the COVID-19 infection prevention and control efforts, take action to

lessen the stress caused by the pandemic, and offer outside assistance to help minimize these Conditions.

Further investigation about healthcare professionals' post-pandemic symptoms of depression, stress and anxiety are Qualitative study should be done to learn and investigate more about the problem and correlations of psychological distress, and depression, anxiety, and stress. We also suggest further analysis based on the recommended clinician-administered structural interviews, which would have resulted in appropriate clinical diagnoses.

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Annex 1: Participant's Information Sheet

Title of the Research Project: Health Professionals' Psychological Distress and Associated Factors in the Post Pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023

Name of Principal Investigator: Amira Kasim

Name of the Organization: Addis Ababa University, College of Health Sciences,
School of Public Health

Introduction: Psychological distress is the term for the unfavorable thoughts or feelings that you could have when you're feeling overwhelmed. This study is expected to fill the evidence gaps seen in availability of study done in psychological distress and associated factors in the post pandemic era of COVID-19.

Aim of the Study: The aim of this study is to Assess Health Professionals' Psychological Distress and Associated Factors in the Post Pandemic period of COVID-19 at Eka Kotebe General Hospital, Addis Ababa, Ethiopia 2023

Benefit and risk: Participation will not directly benefit the participant financially or in any other way, but the data is essential to achieving the research's goal and drawing reliable conclusions on the elements that contribute to the psychological distress of health professionals in the post-pandemic period. Additionally, the results of this study will benefit organizations and decision-makers at the local, state, and federal levels.

Confidentiality: The information collected from this study will be kept confidential
and information reviewed will be stored being coded.

Rights to refusal or Withdrawal: Participation is purely voluntary; it is up to you to decide whether to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not have any impact on your work now and in the future.

Annex 2 English questionnaire

Informed consent

My name is _____. We are conducting a study on Health professionals psychological wellbeing and associated factors at Eka Kotebe General Hospital with Addis Ababa University. We are interviewing randomly selected Health professionals that are available at the time of data collection to assess determinant factors for psychological wellbeing in the post pandemic period of COVID-19. For this purpose, certain questions which are thought to be important will be asked. You are kindly required to respond to these questions. We want to assure you that your answers will be strictly kept secret. We will also do not keep a record of your name or address. Participation in this survey is voluntary and you have the right to refuse participation at any time or not to respond to questions that you are not willing to answer. However, your honest answers to these questions will help us in identifying determinant factors for psychological wellbeing in the post pandemic period of COVID-19 and decrease the psychological distress of health professionals in the future. We would appreciate your help in responding to these questions, and the interview will not take more than 30 minutes. If you have any concern or question, please contact me at 0920996262 phone number or amirakasim24@gmail.comemail address.

- Are you willing to participate in the study?

Yes ☐

No ☐

PART 1. SOCIODEMOGRAPHIC CHARACTERSTICS

No.	**Question**	**Response**	**Code**
101.	Age	1. 18-23	
		2. 24-33	
		3. 34-44	
		4. >45	
102.	Sex	1.Male	
		2.Female	
103.	Religion	1.Muslim	
		2.Orthodox	
		3.Protestant	
		4.Others	
104.	Marital status	1.Single	
		2.Married	
		3.Divorced/widowed	
105.	Current living status	1.With spouse	
		2.With children	
		3.With family	
		4.Alone	
		5.other	
106.	Profession	1.nurse	
		2.Midwifery	
		3. physician	
		4. pharmacist	
		5.lab. technician	
		6.others	
107.	Education	1 diploma	
		2.degree	
		3. Masters and above	
108.	Year of work experience	<3	
		>3	

PART 2 IES-R

INSTRUCTIONS: Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you DURING THE PAST SEVEN DAYS with respect to COVID-19 that occurred in 2020. How much have you been distressed or bothered by these difficulties?

		Not at all	**A little bit**	**moderately**	**Quite a bit**	**Extremely**
1	Any reminder brought back feelings about it	**0**	**1**	**2**	**3**	**4**
2	I had trouble staying asleep	**0**	**1**	**2**	**3**	**4**
3	Other things kept making me think about it.	**0**	**1**	**2**	**3**	**4**
4	I felt irritable and angry	**0**	**1**	**2**	**3**	**4**
5	I avoided letting myself get upset when I thought about it or was reminded of it	**0**	**1**	**2**	**3**	**4**
6	I thought about it when I didn't mean to	**0**	**1**	**2**	**3**	**4**
7	I felt as if it hadn't happened or wasn't real.	**0**	**1**	**2**	**3**	**4**
8	I stayed away from reminders of it.	**0**	**1**	**2**	**3**	**4**
9	Pictures about it popped into my mind.	**0**	**1**	**2**	**3**	**4**
10	I was jumpy and easily startled.	**0**	**1**	**2**	**3**	**4**
11	I tried not to think about it.	**0**	**1**	**2**	**3**	**4**
12	I was aware that I still had a lot of feelings about it, but I didn't deal with them.	**0**	**1**	**2**	**3**	**4**
13	My feelings about it were kind of numb.	**0**	**1**	**2**	**3**	**4**
14	I found myself acting or feeling like I was back at that time.	**0**	**1**	**2**	**3**	**4**
15	I had trouble falling asleep.	**0**	**1**	**2**	**3**	**4**
16	I had waves of strong feelings about It	**0**	**1**	**2**	**3**	**4**
17	I tried to remove it from my memory	**0**	**1**	**2**	**3**	**4**
18	I had trouble concentrating	**0**	**1**	**2**	**3**	**4**
19	Reminders of it caused me to have	**0**	**1**	**2**	**3**	**4**

	physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.					
20	I had dreams about it.	**0**	**1**	**2**	**3**	**4**
21	I felt watchful and on-guard.	**0**	**1**	**2**	**3**	**4**
22	I tried not to talk about it.	**0**	**1**	**2**	**3**	**4**

PART 2. **DASS 21 depression, anxiety, and stress scale**

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree or a good part of time
- 3 Applied to me very much or most of the time

1	S	I found it hard to wind down	0	1	2	3
2	A	I was aware of dryness of my mouth	0	1	2	3
3	D	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	A	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	s	I found it difficult to work up the initiative to do things	0	1	2	3
6	d	I tended to over-react to situations	0	1	2	3
7	a	I experienced trembling (e.g. in the hands)	0	1	2	3
8	s	I felt that I was using a lot of nervous energy	0	1	2	3
9	a	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	d	I felt that I had nothing to look forward to	0	1	2	3
11	s	I found myself getting agitated	0	1	2	3
12	s	I found it difficult to relax	0	1	2	3
13	d	I felt downhearted and blue	0	1	2	3
14	s	I was intolerant of anything that kept me from getting on with	0	1	2	3

		what I was doing				
15	a	I felt I was close to panic	0	1	2	3
16	d	I was unable to become enthusiastic about anything	0	1	2	3
17	d	I felt I wasn't worth much as a person	0	1	2	3
18	s	I felt that I was rather touchy	0	1	2	3
19	a	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate 0increase, heart missing a beat)	0	1	2	3
20	a	I 0felt scared without any good reason	0	1	2	3
21	d	I fel0t that life was meaningless	0	1	2	3

PART 3. DISTRIBUTION OF CLINICAL FACTORS

No.	**Variables**	**Response**
108	Current medical illness	**1.yes**
		2.no
109	Previous history of mental	**1.yes**
	illness	**2.no**
110.	Family history of mental illness	**1.yes**
		2.no
111.	Physical pain	**1.yes**
		2.no
112.	Sleep deprivation	1.yes
		2.no
113.	Current Substance use	**1.yes**
		2. no

Part 4 . The Oslo 3-item Social Support Scale

No.	**Variables**	**Response**
1.	How many people are so close to	'none'
	you that you can count on them if	'1–2'
	you have great personal problems?	'3–5'
		'5+

2.	How much interest and concern do people show in what you do?	'none' 'little' 'uncertain' 'some' 'a lot'
3.	How easy is it to get practical help from neighbors if you should need it?	very difficult' 'difficult' 'possible' 'easy' 'very easy'

Part 5. Perceived organizational support

0	**1**	**2**	**3**	**4**	**5**	**6**
Strongly disagree	**Moderately disagree**	**Slightly disagree**	**Neither disagree/nor agree**	**Slightly agree**	**Moderately agree**	**Strongly agree**

		0	1	2	3	4	5	6
1	The organization values my contribution to its well-being							
2	The organization fails to appreciate any extra effort from me							
3	The organization would ignore any complaint from me							
4	The organization really cares about my well-being							
5	5. Even I did the best job possible; the organization would fail to notice							
6	The organization cares about my general satisfaction at work							
7	The organization shows very little concern for me							

8	The organization takes pride in my accomplishments at work

Annex 3. Level of Organizational Support Frequency

Perceived organizational support		Count	Percent %
The organization values my contribution to its wellbeing	strongly disagree	0	0.0%
	moderately disagree	40	9.6%
	slightly disagree	48	11.5%
	neither disagree nor agree	238	57.2%
	slightly agree	34	8.2%
	moderately agree	56	13.5%
	strongly agree	0	0.0%
The organization fails to appreciate any extra effort from me	strongly disagree	0	0.0%
	moderately disagree	52	12.5%
	slightly disagree	49	11.8%
	neither disagree nor agree	196	47.1%
	slightly agree	84	20.2%
	moderately agree	35	8.4%
	strongly agree	0	0.0%
The organization would ignore any compliant from me	strongly disagree	16	3.8%
	moderately disagree	72	17.3%
	slightly disagree	74	17.8%
	neither disagree nor agree	194	46.6%

	slightly agree	39	9.4%
	moderately agree	21	5.0%
	strongly agree	0	0.0%
The organization really cares about my wellbeing	strongly disagree	0	0.0%
	moderately disagree	54	13.0%
	slightly disagree	51	12.3%
	neither disagree nor agree	192	46.2%
	slightly agree	85	20.4%
	moderately agree	34	8.2%
	strongly agree	0	0.0%
Even i did the best job possible the organization would fail to notice	strongly disagree	0	0.0%
	moderately disagree	56	13.5%
	slightly disagree	50	12.0%
	neither disagree nor agree	190	45.7%
	slightly agree	87	20.9%
	moderately agree	33	7.9%
	strongly agree	0	0.0%
The organization cares about my general satisfaction at work	strongly disagree	0	0.0%
	moderately disagree	56	13.5%
	slightly disagree	50	12.0%
	neither disagree nor agree	190	45.7%
	slightly agree	87	20.9%
	moderately agree	33	7.9%
	strongly agree	0	0.0%
The organization shows very little concern for me	strongly disagree	16	3.8%
	moderately disagree	72	17.3%
	slightly disagree	74	17.8%
	neither disagree nor agree	194	46.6%
	slightly agree	39	9.4%
	moderately agree	21	5.0%
	strongly agree	0	0.0%
The organization values my contribution to its wellbeing	strongly disagree	0	0.0%
	moderately disagree	42	10.1%
	slightly disagree	51	12.3%
	neither disagree nor agree	232	55.8%
	slightly agree	33	7.9%
	moderately agree	58	13.9%
	strongly agree	0	0.0%

Annex 4 Frequency of IES_R

Impact of event scale -revised (IES-R)		Count	Percent %
Any remainder brought back feelings about it	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I had trouble staying asleep	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
Other things kept making me think about it	0	58	13.9%
	not at all	87	20.9%

	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I feel irritable and angry	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I avoided letting myself get upset when I thought about it or was reminded of it	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I thought about it when I did not mean to	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I felt as if it had not happened or was not real	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I stayed away from reminders of it	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
Pictures about it popped into my mind	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%

I was jumpy and easily startled	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I tried not to think about it	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I was aware that i still had a lot of feelings about it	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
My feelings about it were kind of numb	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I found myself acting or feeling like i was back at that time	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	24	5.8%
	quite a bit	18	4.3%
	extremely	0	0.0%
I had trouble falling asleep	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I had waves of strong feelings about it	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%

	quite a bit	0	0.0%
	extremely	0	0.0%
I tried to remove it from my	0	187	45.0%
memory	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I had trouble concentrating	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
Remainders of it caused me	0	187	45.0%
to have physical reactions,	not at all	100	24.0%
such as sweating....	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	extremely	0	0.0%
I had dreams about it	0	187	45.0%
	not at all	100	24.0%
	a little bit	71	17.1%
	moderately	58	13.9%
	quite a bit	0	0.0%
	exteremly	0	0.0%
I felt watchful and on guard	0	58	13.9%
	not at all	86	20.7%
	a little bit	230	55.3%
	moderately	26	6.3%
	quite a bit	16	3.8%
	exteremly	0	0.0%
I tried not to talk about it	0	58	13.9%
	not at all	87	20.9%
	a little bit	229	55.0%
	moderately	26	6.3%
	quite a bit	16	3.8%
	extremely	0	0.0%

Annex .5. Dass 21 Frequency

DASS 21		Count	Column N %
I found it hard to wind down. **(Stress)**	Did not apply to me at all	208	50.0%
	applied to me to some degree	174	41.8%

	applied to me to considerable degree	27	6.5%
	applied to me very much or most of time	7	1.7%
I was aware of dryness of my mouth **(anxiety)**	Didnot apply to me at all	201	48.3%
	applied to me to some degree	134	32.2%
	applied to me to considerable degree	81	19.5%
	applied to me very much or most of time	0	0.0%
I couldnot seem to experience any positive feeling at all **(depression)**	Didnot apply to me at all	193	46.4%
	applied to me to some degree	124	29.8%
	applied to me to considerable degree	97	23.3%
	applied to me very much or most of time	2	0.5%
I experienced breathing difficulty **(anxiety)**	Didnot apply to me at all	332	79.8%
	applied to me to some degree	84	20.2%
	applied to me to considerable degree	0	0.0%
	applied to me very much or most of time	0	0.0%
I found it difficult to work up the initiative to do things **(Stress)**	Didnot apply to me at all	191	45.9%
	applied to me to some degree	126	30.3%
	applied to me to considerable degree	99	23.8%
	applied to me very much or most of time	0	0.0%
I tended to overreact to situations **(depression)**	Didnot apply to me at all	193	46.4%
	applied to me to some degree	130	31.3%

	applied to me to considerable degree	93	22.4%
	applied to me very much or most of time	0	0.0%
I experienced trembling **(anxiety)**	Didnot apply to me at all	328	78.8%
	applied to me to some degree	74	17.8%
	applied to me to considerable degree	13	3.1%
	applied to me very much or most of time	1	0.2%
I felt that I was using a lot of nervous energy **(Stress)**	Didnot apply to me at all	302	72.6%
	applied to me to some degree	94	22.6%
	applied to me to considerable degree	20	4.8%
	applied to me very much or most of time	0	0.0%
I was worried about situations in which I might panic **(anxiety)**	Didnot apply to me at all	191	45.9%
	applied to me to some degree	155	37.3%
	applied to me to considerable degree	69	16.6%
	applied to me very much or most of time	1	0.2%
I felt that I had nothing to look forward to **(depression)**	Didnot apply to me at all	332	79.8%
	applied to me to some degree	83	20.0%
	applied to me to considerable degree	1	0.2%
	applied to me very much or most of time	0	0.0%
I found myself getting agitated **(Stress)**	Didnot apply to me at all	206	49.5%
	applied to me to some degree	124	29.8%

	applied to me to considerable degree	86	20.7%
	applied to me very much or most of time	0	0.0%
I found it difficult to relax	Didnot apply to me at all	197	47.4%
(Stress)	applied to me to some degree	137	32.9%
	applied to me to considerable degree	82	19.7%
	applied to me very much or most of time	0	0.0%
I felt downhearted and blue	Didnot apply to me at all	337	81.0%
(depression)	applied to me to some degree	72	17.3%
	applied to me to considerable degree	7	1.7%
	applied to me very much or most of time	0	0.0%
I was intolerant of any thing that kept me from	Didnot apply to me at all	196	47.1%
	applied to me to some degree	134	32.2%
(Stress)	applied to me to considerable degree	86	20.7%
	applied to me very much or most of time	0	0.0%
I felt I was close to panic	Didnot apply to me at all	323	77.6%
(anxiety)	applied to me to some degree	88	21.2%
	applied to me to considerable degree	5	1.2%
	applied to me very much or most of time	0	0.0%
I was unable to become enthusiastic about anything	Didnot apply to me at all	207	49.8%
	applied to me to some degree	123	29.6%
(depression)			

	applied to me to considerable degree	86	20.7%
	applied to me very much or most of time	0	0.0%
I felt I wasnot worth much as a person **(depression)**	Didnot apply to me at all	313	75.2%
	applied to me to some degree	93	22.4%
	applied to me to considerable degree	10	2.4%
	applied to me very much or most of time	0	0.0%
I felt that I was rather touchy **(Stress)**	Didnot apply to me at all	324	77.9%
	applied to me to some degree	90	21.6%
	applied to me to considerable degree	2	0.5%
	applied to me very much or most of time	0	0.0%
I was aware of the action of heart in the absence of physical exertion **(anxiety)**	Didnot apply to me at all	335	80.5%
	applied to me to some degree	80	19.2%
	applied to me to considerable degree	1	0.2%
	applied to me very much or most of time	0	0.0%
I felt scared without any good reason **(anxiety)**	Didnot apply to me at all	211	50.7%
	applied to me to some degree	140	33.7%
	applied to me to considerable degree	65	15.6%
	applied to me very much or most of time	0	0.0%
I felt that life was meaningless **(depression)**	Didnot apply to me at all	349	83.9%
	applied to me to some degree	67	16.1%

applied to me to considerable degree	0	0.0%
applied to me very much or most of time	0	0.0%

ANNEX 6 CURRICULUM VITAE

PERSONAL INFORMATION	
Name	Amira Kasim Mohammed
Telephone	+251 920996262
E-mail	amirakasim24@gmail.com
Address: Current	Addis Ababa, ETHIOPIA
Place of Birth	Asella, Arsi, ETHIOPIA
Nationality	Ethiopian
Sex	Female
EDUCATIONAL BACKGROUND	
Date of Graduation	2021
Title of qualification awarded	PUBLC HEALTH OFFICER
Name of University	Mettu University, Ethiopia
Other	Ongoing Master of Public Health with specialty of Health Systems Management at Addis Ababa University
PERSONAL SKILLS AND COMPETENCES	
Languages	
Computer skills and competences	Competent with basic Microsoft applications (MS- Word, MS-excel, Power Point, SPSS Data entry and analysis)
Other skills	❖ Good interpersonal communication skills ❖ Personal quality hardworking and suitable for teamwork

Language	**Listening**	**Speaking**	**Reading**	**Writing**
English	Excellent	Excellent	Excellent	Excellent
Amharic	Excellent	Good	Excellent	Excellent
Arabic	Excellent	Excellent	Excellent	Excellent
Afanoromo	Good	Good	Excellent	Excellent

WORK EXPERIENCE	**Employer**	**Duration**	**Position**
2021	Mettu university	5 months	Assistant lecturer