



St. Paul's Hospital Millennium Medical College
Graduate Study Program

Prevalence of Compassion fatigue and associated factors among nurses working in adult intensive care units at public hospital in Addis Ababa, Ethiopia, in 2021

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Addis Ababa, Ethiopia

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Prevalence of Compassion Fatigue and Associated Factors Among Nurses Working in Adult Intensive Care Units at Public Hospitals in Addis Ababa, Ethiopia, 2021.

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A thesis to be submitted to St. Paul Hospital Millennium Medical Collage to the Department of Emergency Medicine and Critical Care Nursing; Presented in Partial Fulfillment of the Requirements for The Degree of Masters in Critical Care Nursing.

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Research Project Submission Template

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Assurance of Principal Investigator

I the undersigned agree to accept all responsibilities for the scientific and ethical conduct of the research project. I was providing timely progress report to my advisor and seek the necessary advice and approval from my primary advisors in the course of the research. I was communicating timely to my advisors all stakeholders involved in the study including any source of funding for this research.

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ABSTRACT

Introduction: Compassion Fatigue is a secondary traumatic stress impacts nurses through exposure to pain, suffering, and loss of those for whom they provide care and results in a reduction of compassion satisfaction. It has been suggested that nurses working in intensive care units could be emotionally affected by end-of-life issues, ethical decision making, observing the continuous suffering of patients, disproportionate care or medical futility, miscommunication, and demanding relatives of patients. Therefore, the aim of this study to assess the prevalence of compassion fatigue and associated factors among nurses working in intensive care unit at public hospitals in Addis Ababa, Ethiopia

Objective: To assess the prevalence of compassion fatigue and associated factors among nurses working in adult intensive care unit at public hospitals in Addis Ababa, Ethiopia.

Methods: Institution based cross-sectional study was conducted among nurses who works in adult intensive care unit at public Hospitals in Addis Ababa, Ethiopia from December 10th 2021 to January 15th, 2022. Data was collected by using self-administered questionnaire. The data was checked, sorted, coded and entered in to Epi-data software and exported to using Statistical Package for Social Sciences for further analysis. Descriptive statistics like; median and Interquartile range for continuous variables that skewed distribute, and frequencies and percentage for categorical variables were estimated. Bivariate and multivariable logistic regression analyses were computed to identify significant variables. Odds ratios with 95% confidence interval were used to determine the strength of association between dependent and independent variables. In all analysis p-values ≤ 0.05 was considered as statistically significant.

Results: In this study 360 nurses were involved. Of these, more than half (52.78%) of respondents were females. Two hundred nineteen (60.83%) of study subjects were married and 200 (55.56%) of the study participants scored as having compassion fatigue. Work experience of <3 years (AOR = 16.24; 95%CI: 4.80-55.00) and 4-7 years (AOR= 4.90; 95%CI: 1.46-16.42), night duty shift (AOR= 0.20; 95%CI: 0.06-0.67), neuroticism (AOR=1.05; 95%CI: 1.02-1.09), and social support (AOR=1.05; 95%CI: 1.03- 1.07) were significantly associated with compassion fatigue.

Conclusion: The compassion fatigue among nurses working in the intensive care unit of a public hospital was high (55.56%).

Keywords: Compassion Fatigue, Nurses, intensive care units, public hospitals, Addis Ababa.

Acronyms and Abbreviations

AARHB	Addis Ababa Regional Health Bureau
BO	Burnout
BSc	Bachelor of Science
CF	Compassion Fatigue
CFST	Compassion Fatigue Self-Test
CI	Confidence Interval
CS	Compassion Satisfaction
CSA	Central Statics Agency
ETB	Ethiopian Birr
ICU	Intensive Care Unit
IRB	Institutional Review Board
MSc	Masters of Science
OR	Odds Ratio
PI	Principal Investigator
ProQOL	Professional Quality of Life
SPHMMC	Saint Paul Hospital Millennium Medical College
SPSS	Statistical Package for Social Science
STS	Secondary Traumatic Stress
TASH	Tikur Anbesa Specialized Hospital
TIPI	Ten Inventory Item Personality

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1. INTRODUCTION

1.1. Background

Compassion Fatigue (CF) is emotional tiredness caused by extended, constant and close contact with traumatized patients and families, as well as stress and self-use, which could be termed "the cost of caring " among helping professionals who listen to clients' stories of fear, pain and suffering(1). It is also recognized as the outcome of the stress of attempting to help someone who has experienced a traumatic event and is significant to the person, as well as the desire to help the person who is suffering or traumatized (2).

CF is a term used to define a set of symptoms associated with repeated stress and trauma, such as forgetfulness, inability to concentrate, exhaustion, and physical disease, which can lead to conflict and a lack of caring (3).

CF occurs when nurses waste more compassion energy than they require recuperating and as a result, their ability to recover is harmed. CF is cause a variety of physical, psychological, and behavioral problems among nurses working in intensive care unit (ICU), including sleep disturbances, melancholy, professional powerlessness, substance addiction and strained personal relationships (4).

CF, also known as secondary traumatic stress (STS), is a condition that affects nurses working in ICU as a result of being exposed to the pain, suffering, and death of individuals for whom they provide care, and results in a decrease in compassion satisfaction (5).

CF leads to a slew of work-related issues that might impair job performance and have a significant negative influence on their professional area (6). Such as a drop in patient satisfaction, an increase in nurse turnover and prescription errors (7).

CF is a normal result of being around people who are sick Suffering is widespread among medical professions, particularly nurses. Nurses have grown to be the largest group of health-care practitioners, with the goal of empathetic-ally assisting patients with their critical physical, mental, emotional, and spiritual requirements. As a result, they are under additional stress at work (8).

Nurses are the largest and most powerful professional group in the health-care professionals. They are at risk of CF due to rising workload in the healthcare system in order to address the complicated requirements of patients (9).

Nurses are taught compassion because their employment involves working with people in a variety of difficult situations. This exposes them to secondary traumatic stress in any workplace where nurses work. Intensive care Nurses work with patients who are suffering from terrible, life-threatening diseases, and giving treatment can be both professionally and emotionally demanding, raising the risk of CF. Critical care nurses' physical and emotional health are affected by CF, which leads to high levels of compassion stress, which may have an influence on their well-being (5).

Nurses' physical and emotional health deteriorates as a result of tiredness, resulting in poor care quality. Clients who have had traumatic experiences, accidents, trauma, or serious diseases may discover that the presence of a nurse interrupts their sense of purpose. It's a significant factor in assisting others, but it's not enough (10).

The nurses give compassionate care to patients who are suffering from illnesses and incidents that are often unexpected, debilitating, and life-threatening. Although nurses find professional fulfillment in their work, their recurrent exposure to the impact of critical illness puts them at risk for CF, a condition with symptoms that are similar to post traumatic stress disorder (11).

As a result, being a nurse working in an ICU is an extremely taxing job, and the emotional cost of caring for patients may become a strain on a doctor's personal life, manifesting as CF.

1.2. Statement of the Problem

Compassion Fatigue (CF) is a major problem that takes place as a result of supporting people who are in pain. It causes psychological, physical, and social problems, as well as poor performance and increased errors. Self-help strategies may be useful, but at greater levels, professional assistance was required (12).

Nurses in a southeastern state were surveyed on their work environment and characteristics. Of those working within a hospital setting, 24.4% reported low job satisfaction and 18% reported intent to leave the work. High turnover and vacancy rates lead to poorer patient outcomes and are disruptive to patient care (3).

A brief description of the study, In the USA, a survey revealed that compassion fatigue's response rate was 47%. The prevalence of CF, Burnout (BO) and Compassion Satisfaction (CS) was 15.7, 20.8 and 21.9%, respectively. Female gender, emotional depletion, stress from "a clinical situation," "coworkers," "personal health issues," and "not talking about distressing issues" were all significant predictors of CF. In the United States, neonatologists experience CF, BO, and CS (13).

A cross sectional study conducted at north west of Turkey revealed that compassion among critical care nurses' findings show that critical care nurses were at high risk for CF, 52.7%, and low risk for CF, 47.3%. Nurses informed significant differences in CF on the basis of age, years of critical care experience, working hours (14).

Many health professionals in Ethiopia's health system have committed their lives to public service and will be well-liked by the people they serve. The lack of role models in many health institutions, as well as valuing a profession based on its salary is trapping the health system in a cycle of poor productivity, increased costs, and reduced patient satisfaction. In many of our hospitals the lack of compassion, respect, and care is the most common source of complaints in health institutions so working as a nurse in an ICU is a stressful job, as professionals may be faced with life-or-death scenarios at any time (15).

Nurses working in the ICU are at a significant risk of acquiring CF due to lengthy and continuous contact with recurrent deaths, grief, and hopelessness experienced by patients and their families. The physical and emotional demands of the patient-nurse connection in the ICU, combined with the daily challenges of providing nursing care for their patients can put nurses

working in the unit under a lot of stress. Nurses are predisposed to psychological stress as a result of enduring and frequent patient losses, as well as caring for loved patients and families with life-threatening illnesses (16).

One option for reducing CF in nurses appears to be improving CS. Preventive initiatives at the personal and organizational levels are essential for improving the ProQOL of nurses, particularly those who work in critical care units. Stress and crisis management training, as well as the establishment of peer social support networks, are vital in-service training programs. Personal interventions are also needed to help nurses improve their adaptation abilities and maintain professional distances when dealing with CF(17).

According to a related study conducted in Ethiopia, patients' perceptions of caring, courteous and compassionate health care practices were evaluated and found to be good in 56% of respondents and poor in 44% of respondents (18).

As a result of all of these and other health-related issues, health-care workers specially nurses working in ICU experience CF. so the goal of this study was to determine the extent of CF among nurses working in Adult ICU at public hospitals in Addis Ababa, Ethiopia.

1.3. Significant of the Study

This study was aim to determine the extent of CF among nurses who work in ICU, as well as to identify the demographics, work-related factors, and associated factors that may contribute to CF.

The findings were to aid healthcare professionals, particularly hospitals and nurses working in ICU, in designing different methods and strategies to reduce turnover, potential financial repercussions, and concerns about patient safety and employee well-being. It also aids in allocating resources and developing specific programs to minimize CF and the provision of compassionate care to patients and their families. Policymakers were also being taking action in regards to nurses working in ICU.

The results were used as baseline information for intervention and promotion of the nurses working in ICU. This study was provided new insight into the Prevalence of CF among nurses' workers, with the potential for improvement in inpatient care.

Furthermore, the findings were utilized as a guide for other academics interested in conducting additional research in the area, and as a result, the study was help researchers as baselines for further analysis using different studies.

2. LITERATURE REVIEW

2.1. Compassion Fatigue Overview

The terms "compassion fatigue" and "secondary traumatic stress" are widely used interchangeably in nursing, medical, and psychological literature. It was difficult to tell if the researchers of all of the research analyzed were interested in CF, STS, or both (19).

Globally, A multi-country, cross-sectional study involving 23,159 nurses working in surgical and medical wards in ten European countries found high levels of CF among nurses in different countries: 42% in England, 22% in Finland, 25% in Belgium, 30% in Germany, 40% in Poland, 40% in Ireland, 24% in Norway, 29% in Spain, 29% in the Netherlands, and 15% in Switzerland. Nurses who were burnt out were also more likely to want to leave the nursing profession (20).

The current study looked at the prevalence of CF among disaster behavioral health and emergency preparedness workers who attended the conference in states of Michigan and established cut scores of 25% and 75% based on using a standardized score to indicate relative risk or protective factors on the Professional Quality of Life (ProQOL) measures. The cut scores of 72% of participants were above 75%, which is considered a significant risk factor for CF (2).

The overview study contributes to the understanding of the prevalence and influencing factors of CF in Chinese nurses, as well as scientific evidence for the prediction and prevention of the primary outcome, which is the prevalence of three dimensions of CF in Chinese nurses. Comparing CF scores among Chinese nurses with various educational backgrounds, marital status, employment forms, and professional titles will be one of the secondary outcomes. CF is a term used to describe the feeling of being overwhelmed depending on the hospital unit or location to which they are assigned, CF is projected to affect anywhere from 21.6% to 44.8% of healthcare personnel (9).

In Iran nurses, the prevalence of CF and BO symptoms will be 45.3% and 15.03%, respectively. These revealed that 45.3% and 15.03% of nurses, respectively, were at risk of CF and BO. In addition, 54.3% of emergency and 35.4% of non-emergency nurses had CF, and 19.2% of emergency and 11.4% of non-emergency nurses had BO (21).

A cross-sectional survey among 395 randomly selected nurses from two referral and four general hospitals in Northern Uganda revealed that nearly half of the nurses in Northern Uganda had CF,

with 29.62% reporting high levels of CF, 29.62% reporting normal levels of CF, and 21.27% reporting low levels of CF (22).

CF affects 29.6% of Kenyan nurses in medical wards (23). The other one is a study of 50 nurses working in critical care at two corporate hospitals in Kerala. The findings showed that critical care nurses were at high risk of 52.7% and low risk of 47.3% for CF. According to the findings of the current study, 75% of critical care staff nurses had an average, 24.2% had low, and 0.8% had high compassion fatigue (5,24).

The prevalence of CF among the critical area workers of Kenyatta National Hospital, Nairobi, Kenya was found to be 74.4%. The risk factors associated with CF were being young, with those between 26 and 35 found to have the highest rate of CF. Being married, the rate of CF increased from 22.2% for high risk to 51% for extremely high risk. Being a protestant Christian, the rate of CF increased from 14.7% to 58.7% for those with a high to extremely high risk of CF. Working in the ICU, those working in intensive care had CF increasing from 17.2% from high to extremely high 51.9%. Those with college diplomas from medical training colleges were also found to suffer from fatigue ranging from 19.4% to 55.8% for high to extremely high. Others found to have a high level of fatigue were those who were willing to change departments, where the level of CF increased from 17.2% to 65.5% for those with high and extremely high levels of fatigue, respectively (23).

CF can manifest in a variety of ways, including sadness, avoidance, detachment, and shifts in perspectives and assumptions. Intensive care nurses are at risk of developing CF. this may have an adverse effect on their physical and emotional well-being. It is critical for ICU nurses to have comfortable and positive work experiences, not only for their own health, but also because there is a proven link between employee happiness and effective patient care (25).

CF is also as the negative aspect of caring that caregivers experience as a result of caring for those who are going through traumatic experiences, pain, and suffering; CF can grow over time (26). Nurses are at danger of CF as a result of the increased strain in the health-care system, as CF has been shown to have a negative impact on nurses' physical and mental health, as well as job performance and satisfaction (27).

BO, STS, and vicarious traumatization have all been used interchangeably and improperly to explain CF. BO is a psychiatric illness characterized by a prolonged reaction to continuous

interpersonal pressures at work (11). Working with people who have been or are currently enduring trauma or suffering can lead to CF and CS which are both negative and positive outcomes (28).

CF is a normal side effect of dealing with patients who are going through difficult situations. It arises as a result of expending too much energy and compassion on patients who are suffering for an extended period of time. Helpers become immersed in their patients with extreme physical or mental suffering and trauma as a result of their empathy and compassion and become traumatized (29).

CF puts nurses at high risk for poor professional judgment, wrong assessments, unsympathetic nursing care, fear and avoiding nursing care, decreasing the quality of nursing care, and it also results in a decrease in self-esteem, increasing turnover rate, and possible complications (30).

Working in an ICU is an extremely taxing job, and the emotional cost of caring for patients may become a strain on doctors' personal life, manifesting as CF or BO. Also, there is a lack of consensus on the theoretical components, as evidenced by the widely defined (and understood) unfavorable consequences of delivering treatment in the ICU context across the studies included (31).

General, CF research was carried out in the United States, Canada, and China. However, in our nation, Ethiopia, this field of intensive care nursing will not be investigated. Nurses working in ICU will be among the most vulnerable members of the healthcare profession. These nurses are at a higher risk of stress and psychiatric disorders, such as CF, because of their close, caring connections and conversations with patients and families while delivering end-of-life care (32).

As a result, the aim of this study was to investigate the occurrence (prevalence) of compassion fatigue among nurses working in adult intensive care units at public hospitals in Addis Ababa, Ethiopia.

2.2. Factors Associated with CF among Nurses Working in ICU

There are a number of studies that have considered factors that contribute to CF within healthcare providers specially nurses, a provider 's personal demographic characteristics as well as work factors related to their level of experience and working setting (departments/units, workloads) to examine who may be at greater risk for developing CF (33).

Factors associated with CF were organized into five categories: personal factors, professional factors, psychological factors, support factors, and coping factors. Factors associated with high

CF were younger age, separated or single (marital status), personal/family disruption, life demands, and high self-care. Factors such as educational level, service year and personal trauma history had inconsistent results. Among the work-related factors, factors associated with high CF were less experience with traumatized patients, long work hours or overload, terminal case load, greater prosecution orientation, more goal diffusion, more continuing training, more job insecurity, perception of more medication errors, and informal discussions about work (30).

2.2.1. Socio-Demographic Factors

Several researches have looked into the elements that contribute to CF among healthcare personnel, most notably nurses. To determine who is more likely to develop CF, researchers may look at a provider's personal demographic features as well as job aspects such as level of experience and work pressure. Age, gender, education level, marital status, and religion were all identified as demographic characteristics that influence CF in the previous study (25).

Gender (male nurses had lower levels of compassion satisfaction), education level (nurses with diploma and advanced diploma educational qualifications were more likely to experience low CF), and work environment (nurses with diploma and advanced diploma educational qualifications were more likely to experience low CF) are all factors that contribute to CF, according to the study (34).

The degrees of depersonalization were higher among younger nurses with fewer than four years of experience, according to the findings (35). Also, the lower the danger of CF, the older and more experienced the nurse. As a result, younger and less experienced nurses are more susceptible to CF than their more seasoned counterparts (36).

2.2.2. Work Related Factors

Stressful nature of their employment, nurses are thought to be particularly vulnerable to CF. This will be a severe influence on both emotional and physical well-being (36). Exhaustion, irritability, negative coping behaviors such as alcohol and drug abuse, diminished ability to feel sympathy and empathy, decreased sense of enjoyment or satisfaction with work, increased absenteeism, and impaired ability to make decisions and care for patients and/or clients are all symptoms of CF (40).

More than half of the participants (58%) were in the age range of 20-30 years. 57% of them were married, and the rest were single. Most individuals (80%) had an emergency medical degree.

Nearly half of the individuals (47.5%) had less than five years of work experience, and 35.5% worked on the majority of the project. Concerning the type of base to the workplace, 42.5% of individuals were in the urban ground, and 57.5% in the road base. More than half of them (58%) worked between 200 and 250 hours per month. Years of clinical nursing experience, work department, position in the unit, work shifts and work loading's, and characteristics of the working hospital have all been linked to CF (37).

Nurses who have worked in ICU for a long time had the greatest rates of high-risk CF(25). "Personal trauma, patient trauma, turnover intention, anxiety, life demands, empathy variance, stress, nurse care, job-related loss, lack of engagement with work, poor coping mechanisms, burnout, and specialized employment were all positively correlated with the prevalence of CF" (37). "Personal supports, compassion satisfaction, working through bereavement, stress management activities, health-supporting behaviors, intervention programs, ostensible attentiveness during basic nursing education, and engagement with work were all found to be negatively associated with the occurrence of CF"(38,39).

2.2.3. Social Factors

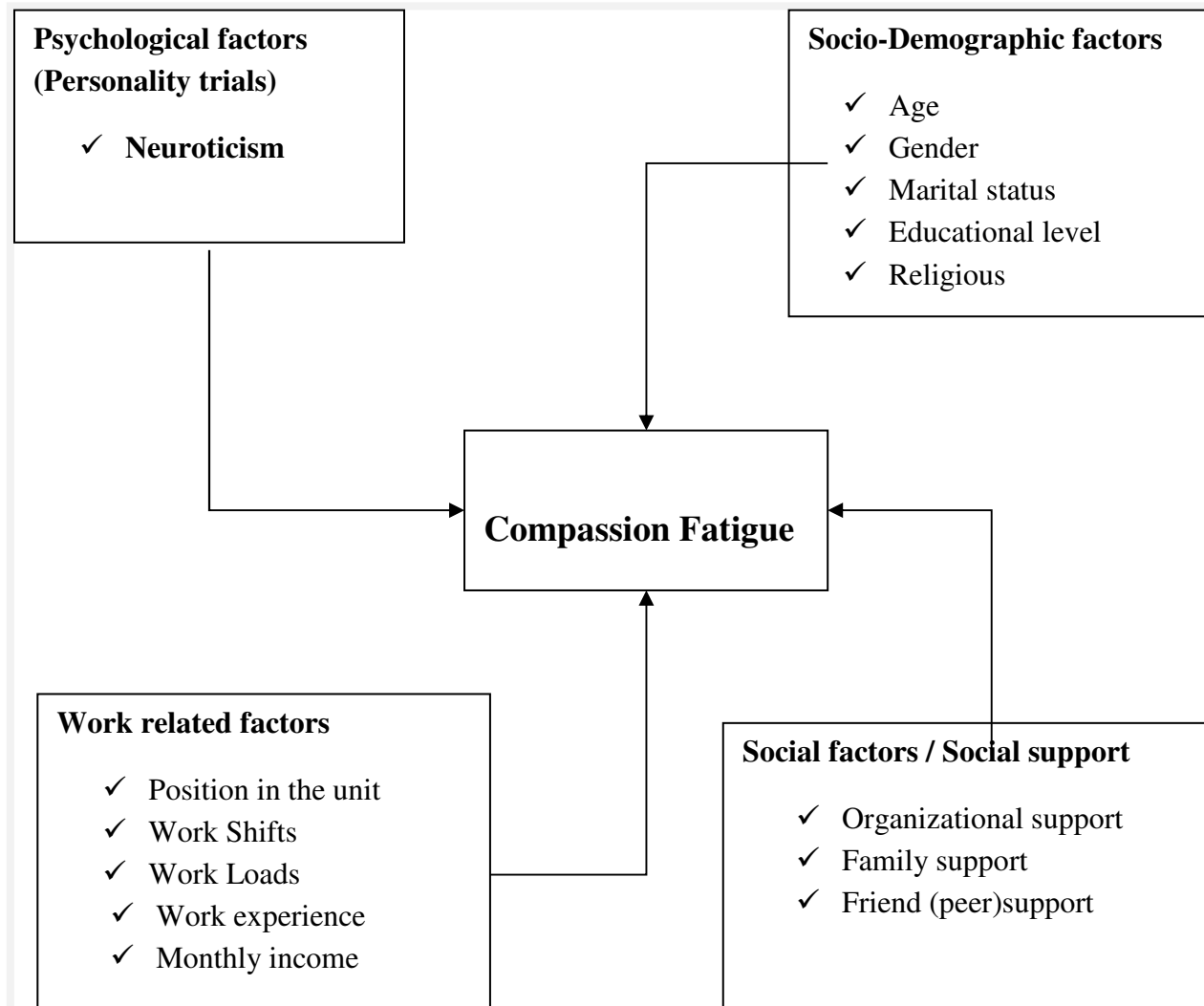
The actual or perceived availability of helpful behaviors by others has been termed as social support. CF and BO among health care personnel might be alleviated by social assistance (21). Nurses' dedication to work and the unit's decision-making style are linked to social-supportive behaviors. Nurses' health and job happiness are linked to their perceptions of organizational support (25,36). CF was adversely connected to social support (supervisory support and family support) nurses in ICU (40,41).

2.2.4. Psychological Factors

Personality has been defined as a set of characteristics that describe and predict a person's conduct in different settings and across time (42,43). Neuroticism is linked to a broad range of mental and physical health issues than other personality traits. People who score high on neuroticism assessments are more prone to complain about problems that are professionally inappropriate and to have fatal thoughts about conditions that lead to the use of health services. (42) According to a study conducted in China, those with neuroticism are more likely to be angry, nervous, or depressed than those who do not have neuroticism. As a result, neurotic

nurses may struggle to control their emotions when confronted with unfavorable occurrences, placing them at risk for CF (44).

2.3. Conceptual Frame Work



This conceptual framework is developed by reviewing different literature's (24, 36, (39, 40), 41). Figure 1 it describes the conceptual framework of the relationship between the independent variable and the dependent variable (analyzing the factors of compassion fatigue among nurses working in ICU)

3. OBJECTIVE OF THE STUDY

3.1. General Objective

- To Assess the Prevalence of Compassion Fatigue and associated factors among nurses working in Adult Intensive Care Units at public Hospitals in Addis Ababa, Ethiopia, 2022.

3.2. Specific Objective

- To determine the Prevalence of Compassion Fatigue among nurses working in Adult Intensive Care Units at public Hospitals in Addis Ababa, Ethiopia, 2022.
- To Identify associated factors of Compassion Fatigue among nurses working in Adult Intensive Care Unit at public Hospitals in Addis Ababa, Ethiopia, 2022.

4. METHODS

4.1. Study Area and Period

The study was conducted at public hospitals in Addis Ababa, which is capital city of Ethiopia from December 10th 2021 to January 15th 2022 and having ICU set up. Addis Ababa is capital city of Ethiopia, and seat of African Union and Economic Commission for Africa is at the heartland of Ethiopia, with a population of 3,384,569 according to the 2017 census. Addis Ababa occupies a total of 540 sq. km land area surrounded by mountainous landscape(45)

The city comprises 11 sub-cities. The population pyramid is broad based, typically of a developing world. People from different regions of Ethiopia populate the city; the main causes of morbidity and mortality are communicable diseases that could be prevented through interaction of primary health care activities.

The city has 52 hospitals, 12 public hospitals, 36 private hospitals, 3 uniform military hospitals and 2 NGO hospitals. Number of health centers are 61 of which 54 are public and 7 are NGO health centers. The city has also more than 700 clinics and 500 drug venders accountable to Addis Ababa city administration. (Data obtained from medical service directorate of the federal ministry of health, Addis Ababa Regional Health Bureau (AARHB), and Addis Ababa city administration).

The study areas were public (governmental) hospitals in Addis Ababa. Current hospitals with having ICUs include Tikur Anbesa Specialized Hospital, Alert Hospital, St. Petros hospital, St. Paul Hospital Millennium Medical College, AaBET Hospital, Zewditu Memorial Hospital, Yekatit 12th Hospital, Ras desta Damtewu Memorial Hospital, Minillik 2nd Hospitals, Gandi Memorial Hospital, and Tirunesh Bejing General Hospital.

4.2. Study Design

An institutional-based cross-sectional study design was employed.

4.3. Populations

4.3.1. Source Population

All nurses who were working in Adult ICU in public hospitals in Addis Ababa, Ethiopia.

4.3.2. Study Population

Nurses who was available during data collection time and fulfilled the inclusion criteria

4.4. Inclusion and Exclusion Criteria

4.4.1. Inclusion Criteria

Nurses working in ICU and have $\geq$ than six-month work experience in the ICU.

4.4.2. Exclusion Criteria

Very sick and unwilling to participate in the study

4.5. Sample Size Determination

The Sample sizes were determined using a single population proportion formula by considering the 95% confidence level and 0.05 margin of error. Since there was no study conducted with any of my study variables in our country, 50% proportion of experienced nurses towards compassion fatigue, so that the required sample size was **384**. But all nurses working in ICU at public hospitals in Addis Ababa was taken.

$$n = \frac{(Z_{\alpha/2})^2 P (1-p)}{d^2}$$

Where: n = required sample size

Z $\alpha/2$ = Critical value=1.96.

p= 50%. P-value was taken like 50% since there is no similar study published in our country.

d= precision (marginal error) =0.05

$$\text{Therefore: } n = \frac{(1.96)^2 (0.5 \times 0.5)}{(0.05)^2} = 384$$

So calculated sample size was = 384

I can obtain a total sample size of 422 by adding a 10% response rate (contingency). Since the total population of nurses working in adult ICU was **380**. Those are (TASH) Tikur Anbesa Specialized Hospital (62), St. Peter's (48), (SPHMMC) St. Paul Hospital Millennium Medical

College (42), AaBET hospital (46), Zewditu Memorial Hospital (32), Yekatit 12th Hospital (48), Ras Desta Damtewu Memorial Hospital (25), Minilik the 2nd Hospitals (38), Tirunesh Bejing general Hospital (35) are current numbers of a nurse. The total number of nurses in the ICU is 380. (The total amount of data was obtained from the department head nurse of each hospital informally.) Excluding Alert Hospital and Gandhi Hospital (Because, Alert Referral Hospital to refused data collection from institution and Gandhi Hospital used as pre-test for my research),

4.6. Sampling Procedures

First, all public hospitals in Addis Ababa were taken. Then, nurses who were working in an adult ICU during the data collection period in Addis Ababa, Ethiopia were included in the study. Using census methods, the study was conducted from December 10th 2021 to January 15th, 2022. The study's sample consisted of all nurses who volunteered to participate in the study, working in the adult ICU and fulfilling inclusion criteria.

Source population from each public hospital ICU in Addis Ababa

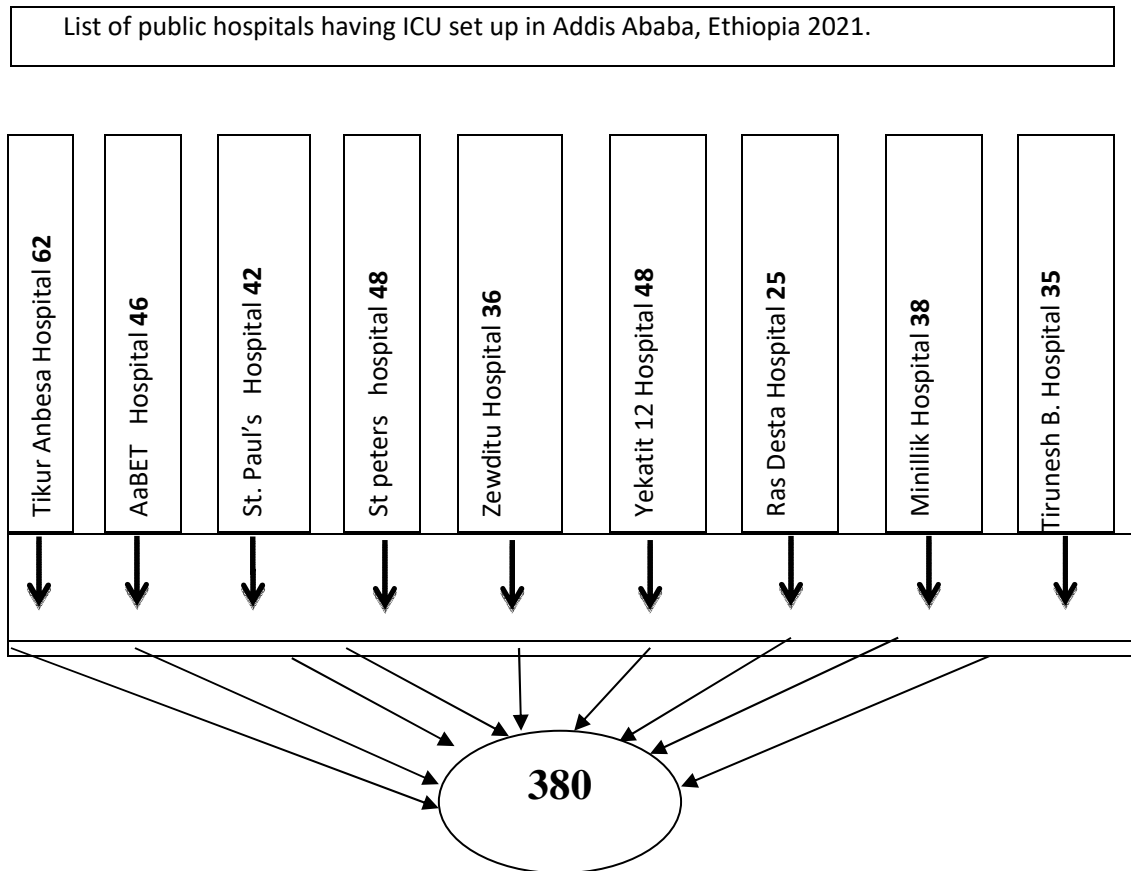


FIGURE 2: SCHEMATIC PRESENTATION OF SAMPLING PRODUCER OF PREVALENCE OF COMPASSION FATIGUE AND ASSOCIATED FACTORS AMONG NURSES WORKING IN ADULT INTENSIVE CARE UNITS AT A PUBLIC HOSPITAL IN ADDIS ABABA, ETHIOPIA, 2021.

4.7. Study Variables

4.7.1. Dependent Variable

- Compassion fatigue (Yes/No)

4.7.2. Independent Variable

- **Socio-demographic factors**
 - Age
 - Gender/sex
 - marital status
 - Educational level
 - Religious
- **Work related factors**
 - Service years of experience
 - position in the unit
 - Shift duty
 - Work load
 - Monthly income in birr
- **Psychological factors (Personality)**
 - Neuroticism
- **Social factors / Social support**
 - family (peer) support
 - organizational support

4.8. Operational Definition (Measurements)

Compassion fatigue - is defined as work related stress (fatigue) among nurses working in ICU.

Presence or Absence compassion fatigue by using compassion fatigue (CF) subscale of ProQOL R-IV (22,46,47)

Absence of Compassion fatigue (no): If Nurses working in ICU scores $\leq$ mean CFST (3.6603) related items (question).

Presence of compassion fatigue (yes): when CFST related items (Question) scores above mean (3.6603)

Intensive Care unit nurses: - A Person who are working in the intensive care unit greater than six months in the public hospital.

Neuroticism is a personality trait that describes a person's tendency to have negative experiences. It may be tested using ten-item personality inventories, from which a neuroticism item score can be estimated.

Social support is the real or perceived availability of helpful behaviors by others and, by determining a person's response to exposure to traumatic situations as defined by twelve social support questions(48) it can be estimated.

4.9. Data Collection Tools

Data collections were conducted from December 10th 2021 to January 15th 2022 using the data collection instrument, which is Self-administered questionnaire, includes Socio-demographic, CF Associated factors and CF self-test question part. Those parts have four sections including: socio-demographics and work-related factors, psychological (personality), social support assessment question and the Compassion Fatigue assessment questions.

The instrument for collecting data consisted of two parts; Part I contains the socio-demographic data of the participants. A series of socio-demographic information questions were administered to each study participant in order to collect the data. The items were designed to collect information on age, gender, marital status, educational background, position in the unit, service years of experience, and current duty shift. The next part was the CF Self-Test (CFST).

The data collection Questionnaire format was assessed by experienced researchers and advisor's pre-test was done before starting the actual survey, (5%) of the total sample size, randomly

(Total) all nurses working in Adult ICU in Gandhi hospital ahead of the start of the main data collection, and finally acceptability and applicability the instrument was evaluated and modified accordingly.

To obtain socio-demographic data relevant to the study, participants were also be asked to provide information with regard to their age, gender, marital status, educational level, service years of experience, duty shift, and work overload and use measurement scales such as the Compassion Fatigue Self-Test (CFST) for CF. The CFST tool was adopted from different related documents based on clinical experience and designed to assess CF (46,49)

The ProQOL tool is comprised of 30 items that are scored on a Likert scale ranging from 1 (never) to 5 (very often), with higher scores indicating higher levels on each sub-scale. The ProQOL Scale is comprised of three sub-scales with 10 items each that pertain to CF, CS and BO. From those ProQOL V-5 of 30 items measuring compassion fatigue, compassion satisfaction, and burnout but only ten items measuring compassion fatigue were analyzed (19,22,50–52) . And the instructions ask respondents to indicate how frequently (1 = rarely or never, 2 = at times, 3 = not sure, 4 = often, 5 = very often) a particular characteristic is true about themselves or their situation (53).

4.10. Data Collection Procedures

The data were collected with a structured self-administered questionnaire which was adopted based on the stated research question in the introduction part of this proposal and the objectives of the study.

The data collection was conducted from December 10th 2021 to January 15th 2022 immediately after the training given to facilitators based on the prepared questionnaire and when the respective informed consent is obtained based on the ethical clearance. After explaining the purpose of the study, the data collectors gave written consent form to individuals been studied. Then, after approval, data were collected through a self-administered questionnaire.

4.11. Data Quality Control

To assure the quality of the data, two-day training was given for four data collectors and one supervisor prior to data collection and the pre-test was done in Gandhi hospital. The questionnaire was carefully designed and has an English version. Before actual data collection time, the questionnaire was checked for clarity, comprehensiveness, and content validity by

experts. During data collection, the supervisor was monitoring the data collection process by checking the completeness of the data and making corrections on the spot when any problem occurs. The principal investigator was checking the data for its completeness during data entry and the cleaning process.

4.12. Data Processing and Statistical Analysis

The data obtained from the respondents were checked for its completeness, sorted, categorized, and coded. After coding, data was entered into a computer using Epi-data 4.4 and analyzed using SPSS 25 version. Descriptive statistics were used to illustrate the median and Interquartile range for continuous variables that skewed distribute, and frequencies and percentage of the study variables. Associations between dependent variables and independent factors were tested using bi-variate and multivariate logistic regression analysis and expressed as Odds Ratios (OR) with 95% Confidence Intervals (CI). Bi-variate analysis were computed and those variables whose values are less than or equal to 0.2 were fit into the multivariate logistic regression model. Odds ratios with a 95% confidence interval were used to determine the strength of the association between dependent and independent variables. Statistical significance is defined as values less than or equal to 0.05.

4.13. Ethical Consideration

The research protocol was approved and ethical clearance was obtained from the Institutional Review Board (IRB). of St. Paul's Hospital Millennium Medical College and submitted to the respective Human Resource Management Department and Addis Ababa Health Bureau Ethical Clearance Committee. A formal letter of cooperation was written to Addis Ababa City Administration's Health Bureau. Consent from the city health bureau and respective at public hospitals were also be obtained. Prior to the launch of the study, all clinical nurses and MSc Nursing holders serving as data collectors and supervisors was informed in written form about the aims of the study.

Data collectors were giving full information to the study Participants about the purpose of the study and were ask them to give their consent before participating in the study. Participation in the study was entirely voluntary and any involvement in the study was assured only after obtaining complete verbal informed consent. The study results were provided benefits for participants and for their organizations by giving CF related recommendations.

All participants in this study were seen justly and their moral values were kept strictly, safety was secured and they were not getting any harm, and the potential risk was limited to the time they lost during self-administered questionnaire. Confidentiality was strictly adhered to and identification numbers (using codes) rather than names were used during the data collection and analysis. The progressive report was reported to St. Paul's Hospital Millennium Medical College and to Addis Ababa Health Bureau Ethical Clearance Committee timely.

4.14. Dissemination and Utilization of Results

It will present and submit to St. Paul's Hospital Millennium Medical College, school of nursing and copy of the result will distribute the respective public hospitals. Also, it will present different scientific conferences. Finally, it will send to international journal for publication.

5. RESULTS

5.1. Socio-demographic characteristics of study participants

A total of 360 participants were included in the study which makes the response rate 94.7%. From the total, more than half (52.78%) of respondents were females. Two hundred sixty-one (72.50%) of study participants were in the age interval of 25-34 years with the overall median of 31 years and IQR of 7 years. Two hundred nineteen (60.83%) of study subjects were married. More than half (56.94%) of study participants were orthodox Christian religion follower. More than quarter (30.28%) of respondents had 4-7 years of work experience. Majority of nurses (64.44%) had 5251-7800 Ethiopian Birr monthly income with median of 7071 ETB and IQR of 1863 ETB. More than 3/4th (86.94%) of study participants had bachelor degree of educational level.

Table 1 Sociodemographic characteristic of study participants, Addis Ababa (n=360)

Variables	Responses	Frequency	Percent
Age in years	≤24	4	1.11
	25-34	261	72.50
	35-44	89	24.72
	≥45	6	1.67
	Median ± IQR	31±7	
Sex	Male	170	47.22
	Female	190	52.78
	Total	360	100.00
Marital Status	Single	133	36.94
	Married	219	60.83
	Divorced	8	2.22
Religious	Orthodox	205	56.94
	Muslim	34	9.44
	Protestant	119	33.06
	Catholic	1	0.28
	Others	1	0.28
Experience in years	≤3	212	58.89
	4-7	109	30.28
	≥8	39	10.83
Monthly Income in ETB	≤3200	2	0.56
	3201-5250	13	3.61
	5251-7800	232	64.44
	≥7801	113	31.39
	Median ± IQR	7071±1863	
Educational Level	Nurse Diploma	12	3.33
	Nurse Bachelor Degree	313	86.94
	Nurse MSc	35	9.72

5.2. Work area related factors

As illustrated in table 2, two hundred twenty-seven (63.06%) of study subjects were alternative shift of current duty shift. Majority of nurses (92.50%) were staff nurses. Three hundred nine (85.83%) of study subjects were from referral hospital in case of level of institution. Majority (96.94%) of study participants were reported the presence of work overload.

Table 2: Work related factors of study participants, Addis Ababa, (n=360)

Variables	Responses	Frequency	Percent
Current duty shift	Day shift	107	29.72
	Night Shift	26	7.22
	alternative Shift	227	63.06
Position in the unit	Staff Nurse	333	92.50
	Head Nurse	21	5.83
	Coordinator	6	1.67
Level of institution	General Hospital	51	14.17
	Referral Hospital	309	85.83
Presence of work overload	Yes	349	96.94
	No	11	3.06

5.3. Psychological factors (Personality trials)

As demonstrated in Table 3, One hundred forty-four (40.0%) of study participants were reported at times for the statement of “I see myself as someone who is revered” and 34.44% of study subjects at times were generally trusting. One hundred (27.78%) of study subjects were not sure whether they saw themselves as someone who tends to be lazy and 99 (27.50%) of respondents were not sure to saw themselves as someone who is relaxed, handles stress well. One hundred- Six (29.44%) of study participants were reported they saw themselves as some who has few artistic interests at times and about one-third (30.83%) of study respondents reported at times they saw themselves as someone who was outgoing to be sociable. One hundred eighteen (32.78%) of respondents e reported at times they saw themselves as some who get nervous easily and more than 1/4th (29.44%) of study subjects of described at times they saw themselves as some who had an active imagination.

Table 3: Psychological factors (Personality traits) among study participants, Addis Ababa (n=360)

Variables	Rarely/Never		At times		Not Sure		Often		Very Often	
	N	%	N	%	N	%	N	%	N	%
I see myself as some who is revered	98	27.22	144	40.00	68	18.89	37	10.28	13	3.61
Is generally trusting	64	17.78	124	34.44	77	21.39	57	15.83	38	10.56
I see myself as some who tends to be lazy	114	31.67	88	24.44	100	27.78	41	11.39	17	4.72
I see myself as some who is relaxed, handles stress well	70	19.44	95	26.39	99	27.50	61	16.94	35	9.72
I see myself as some who has few artistic interests	64	17.78	106	29.44	88	24.44	65	18.06	37	10.28
I see myself as some who is outgoing, sociable	65	18.06	111	30.83	63	17.50	64	17.78	57	15.83
I see myself as some who tends to find fault with others	110	30.56	102	28.33	68	18.89	37	10.28	43	11.94
I see myself as some who does a thorough job	76	21.11	101	28.06	70	19.44	61	16.94	52	14.44
I see myself as some who gets nervous easily	81	22.50	118	32.78	83	23.06	44	12.22	34	9.44
I see myself as some who has an active imagination	59	16.39	106	29.44	77	21.39	61	16.94%	57	15.83

5.4. Social Support

As illustrated in Table 4, One hundred nineteen (33.06%) of study subjects strongly agree with the statement of ‘There is a special person who is around when I am in need.’ More than quarter (30.83%) of study participants were asked about the statement of whether there was a special person with whom he/she can share his/her joys and sorrows and they reported that as they were strongly agreed. Similarly, 118(32.78%) of respondents strongly agreed with the statement of their family really tried to help them. One hundred-twelve (31.11%) of study participants very strongly agreed about the idea of as they got the emotional help and support as they need from their family and 108(30.0%) of study subjects very strongly agreed on the statement of as they had a special person who was a real source of comfort to them. One hundred thirty-four (37.22%) of respondents were asked if they could talk about their problems with their family, and they reported very strongly agree the question. More than 1/3th (38.06%) of study participants very strongly agreed with the statement of ‘I have friends with whom I can share my joys and Sorrows.’ More than half (50.83%) of study subjects were reported very strongly agree about the idea they were asked about as they could talk about their problems with their friends.

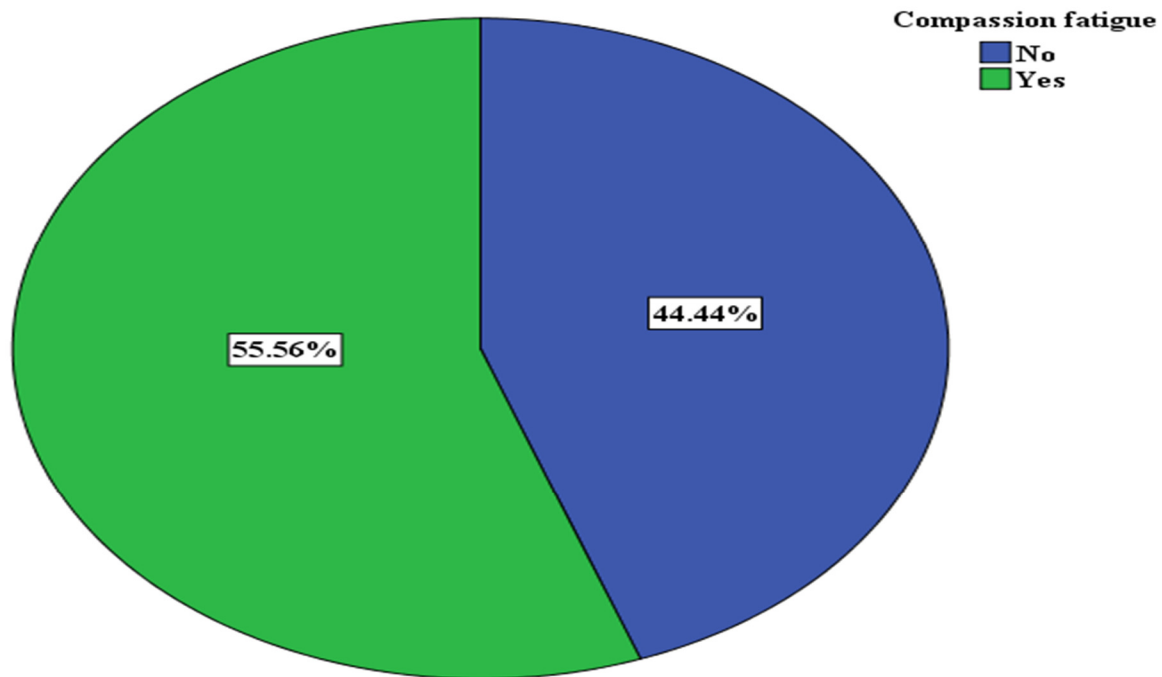
Table 4: Social support characteristics among study participants, Addis Ababa (n=360)

Variables	Very Strongly Disagree		Strongly Disagree		Mildly disagree		Neutral		Mildly Agree		Strongly Agree		Very Strongly Agree	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
There is a special person who is around when I am in need.	5	1.39	13	3.61	40	11.11	46	12.78	51	14.17	119	33.06	86	23.89
There is a special person with whom I can share my joys and sorrows.	21	5.83	28	7.78	22	6.11	32	8.89	67	18.61	111	30.83	79	21.94
My family really tries to help me.	17	4.72	21	5.83	22	6.11	29	8.06	55	15.28	118	32.78	98	27.22
I get the emotional help and support I need from my family.	20	5.56	22	6.11	22	6.11	22	6.11	51	14.17	111	30.83	112	31.11
I have a special person who is a real source of comfort to me	17	4.72	22	6.11	24	6.67	32	8.89	36	10.00	121	33.61	108	30.00
My friends really try to help me	11	3.06	25	6.94	21	5.83	37	10.28	45	12.50	109	30.28	112	31.11
I can count on my friends when things go wrong.	17	4.72	25	6.94	30	8.33	30	8.33	54	15.00	110	30.56	94	26.11
I can talk about my problems with my family.	15	4.17	22	6.11	25	6.94	22	6.11	37	10.28	105	29.17	134	37.22
I have friends with whom I can share my joys and Sorrows.	11	3.06	25	6.94	18	5.00	30	8.33	39	10.83	100	27.78	137	38.06
There is a special person in my life who cares about my feelings.	15	4.17	21	5.83%	19	5.28	18	5.00	31	8.61	79	21.94	177	49.17
My family is willing to help me make decisions.	12	3.33	21	5.83%	21	5.83	28	7.78	27	7.50	55	15.28	196	54.44
I can talk about my problems with my friends.	18	5.00	23	6.39	19	5.28	23	6.39	26	7.22	68	18.89	183	50.83

Prevalence of CF among nurses working in adult ICU

This study revealed that the prevalence of CF was (55.56%) and (44.44%) had no CF among nurses working in adult intensive care units.

Two hundred (55.56%) of the study participants scored as having compassion fatigue, and the rest to 160 (44.44%) of the study subjects scored below the mean as having no compassion fatigue.



5.5. Associated factors with compassion fatigue

As shown table 5, bivariable logistic regression analysis was carried out, and variables with P-value of <0.2 were selected for multivariable logistic regression analysis. These variables were marital status, year of work experience, educational background, current duty shift, level of institution, presence of work overload, neuroticism, and social support.

Table: 5 Bivariable logistic regression analysis

Variables	Category	OR	95% CI COR		P-value
			Lower	Upper	
Age in years	≤24				
	25-34	1.21	0.38	3.86	0.849
	35-44	1.62	0.50	5.25	0.638
	≥45	0.00	0.00		0.999
Sex	Male				
	Female	1.22	0.96	1.56	0.345
Marital Status	Single				1
	Married	1.44	1.12	1.86	0.100
	Divorced	0.59	0.25	1.40	0.484
Experience in years	≤3	19.36	10.30	36.37	<0.001*
	4-7	7.42	3.89	14.15	<0.001*
	≥8				1
Monthly Income in ETB	≤3200				1
	3201-5250	0.86	0.15	4.92	0.919
	5251-7800	1.39	0.27	7.13	0.816
	≥7801	1.05	0.20	5.44	0.970
Educational Level	Nurse Diploma	0.24	0.09	0.63	0.089
	Nurse Bachelor Degree	1.65	1.09	2.49	0.162
	Nurse MSc				1
Current duty shift	Day shift				1
	Night Shift	0.23	0.13	0.43	0.006*
	Alternative Shift	1.61	1.23	2.11	0.045*
Level of institution	General Hospital				1
	Referral Hospital	4.00	2.72	5.87	<0.001*
Presence of work overload	Yes	13.27	3.94	44.62	0.014*
	No				1
Nueroticism	Nueroticism	1.02	1.01	1.04	0.046*
Social Support	Social support	1.07	1.05	1.08	<0.001*

Keys; 1 indicates references; * indicates significances at p-value < 0.20

As displayed in Table 6, the result of multivariable logistic regression analysis showed that participant year of work experience, current duty shift, neuroticism, and social support had a statistically significant association with compassion fatigue. Accordingly, the odds of having compassion fatigue among nurses who had work experience of less than three years was 16.24 times the odds of nurses who had work experience of greater than 8 years (AOR = 16.24; 95%CI:4.80-55.00). Similarly, the odds of having compassion fatigue among nurses who had work experience of 4-7 years was 4.90 times the odds of nurses with more than eight years (AOR= 4.90;95% CI:1.46-16.42). Nurses who had current duty shift of night were 80% less likely to develop compassion fatigue compared to day shift (AOR= 0.20; 95%CI: 0.06-0.67). The odds of compassion fatigue of nurses were 1.05-fold increases as the score of neuroticisms of nurses increases by one unit (AOR=1.05; 95%CI: 1.02-1.09). As social support score of nurses increases by one unit, the odds of compassion fatigue increase by 1.05(AOR=1.05; 95%CI: 1.03- 1.07).

Table 6: Factors associated with compassion fatigue among nurses working in ICU in public hospital, Addis Ababa, Ethiopia, 2021 (n=360)

Variable	Category	Compassion fatigue		COR (95%CI)	AOR (95%CI	P-value
		No, n (%)	Yes, n (%)			
Marital Status	Single	66(49.6)	67(50.4)	1.00		
	Married	89(40.6)	130(59.4)	1.44(1.12, 1.86)	1.35(0.78, 2.34)	0.29
	Divorced	5(62.5)	3(37.5)	0.59(0.25, 1.40)	1.03(0.14, 7.40)	0.97
Work experience	≤3	66(31.1)	146(68.9)	19.36(10.30,36.37)	16.24(4.80, 55.00)	<0.001*
	4-7	59(54.1)	50(45.9)	7.42(3.89, 14.15)	4.90(1.46, 16.42)	0.01*
	≥8	35(89.7)	4(10.3)	1.00		
Educational background	Diploma	10(83.3)	2(16.7)	0.24(0.09, 0.63)	0.14(0.02, 1.004)	0.05
	Degree	131(41.9)	182(58.1)	1.65(1.09, 2.49)	1.49(0.63, 3.55)	0.36
	MSc	19(54.3)	16(45.7)	1.00		
Current duty shift	Day shift	53(49.5)	54(50.5)	1.00		
	Night Shift	21(80.8)	5(19.2)	0.23(0.13, 0.43)	0.20(0.06, 0.67)	0.01*
	Alternative Shift	86(37.9)	141(62.1)	1.61(1.23, 2.11)	0.68(0.36, 1.31)	0.25
Level of institution	General Hospital	37(72.5)	14(27.5)	1.00		
	Referral Hospital	123(39.8)	186(60.2)	4.00(2.72, 5.87)	1.55(0.64, 3.75)	0.33
Presence of work overload	Yes	150(43.0)	199(57.0)	13.27(3.94, 44.62)	1.73(0.11, 28.23)	0.70
	No	10(90.9)	1(9.1)	1.00		
Neuroticism	Median ± IQR	25± 13		1.02(1.01, 1.04)	1.05(1.02, 1.09)	<0.001*
Social Support	Median ± IQR	73±21.5		1.07(1.05, 1.08)	1.05(1.03, 1.07)	<0.001*

Keys: 1.00 indicates reference category; * significance at p-value < 0.05

6. DISCUSSION

The main purpose of this study was to assess the prevalence of compassion fatigue and associated factors among nurses working in adult intensive care units at public hospitals in Addis Ababa, Ethiopia in 2021. A study was conducted to determine the presence or absence of compassion fatigue experienced by nurses who work in adult intensive care units by using a compassion fatigue (CF) subscale of the Professional Quality of Life Scale (ProQOL R-IV)(49,54) to measure the presence or absence of compassion fatigue at public hospitals in Addis Ababa, Ethiopia.

This particular study demonstrated that 55.56% of study participants found having compassion fatigue. This study finding is higher than that of studies done in Iran, which shows the prevalence of CF at 45.3%(21), Northern Uganda, which has CF at 29.62%(22), and Kenya, which shows CF at 29.6%(23). The reason for such discrepancies could arise because of differences in Sociodemographic characteristics between the study population and design.

In our study, to identify the factors that are associated with compassion fatigue, bivariate and multivariable analysis were employed. Nurses with less than three years of work experience had 16.24 times the chance of having compassion fatigue as nurses with more than eight years of work experience. Likewise, odds of compassion fatigue among nurses with 4-7 years of work experience was 4.9 times higher than nurses with more than eight years of experience.

This study finding is supported by a study done in northern Uganda which declares the work experience is statistically significant factor of compassion fatigue(22). Likewise, an evidence from Spain demonstrates that years of nursing experience has linkage of CF (37).

Nurses who worked a night shift were 80% less likely to develop compassion fatigue than those who worked a day shift. In line with this study finding, a study done in Spain indicate that work shifts have been linked to CF (37).

Regarding neuroticism, as a nurse's neuroticism score rises by one unit, the likelihood of compassion fatigue rises by 1.05 times. A study conducted in the United States of America illustrates that neuroticism linked to a broad range of mental and physical health (42). Similarly, a study conducted in China, those with neuroticism are more likely to be angry, nervous, or depressed than those who do not have neuroticism (44).

Concerning social support, compassion fatigue increases by 1.05 units for every one-unit increase in a nurse's perceived social support score. This study finding is supported by a study conducted in Iran that indicates CF among health care personnel might be alleviated by social assistance (21). Additionally, this study investigation is maintained with the study done in Germany shows Nurses' health and job happiness are linked to their perceptions of organizational support (25,36) and an evidence from Iran illustrate that CF was adversely connected to social support (supervisory support and family support) nurses in ICU (40,41).

7. Conclusion and Recommendation

7.1 Conclusion:

This study illustrates that the compassion fatigue among nurses working in the intensive care unit of a public hospital was 55.56% in 2022 at public hospital Addis Ababa, Ethiopia which represents was having compassion fatigue. The final result of multivariate logistic regression analysis showed that participant work experience, current duty shift, neuroticism, and social support had a statistically significant association with compassion fatigue.

To prevent compassion fatigue among nurses in Addis Ababa, the Ministry of Health, in collaboration with other stakeholders, should attempt to improve career advancement options for nurses, improve nurse salary, and enhance the overall workplace environment.

Nursing leadership and other stakeholders can use these findings to build an enabling environment for nurses to increase job satisfaction and reduce nursing turnover.

In general, improve the overall workplace environment to prevent compassion fatigue among nurses working in intensive care unit.

7.2 Recommendation:

- The FMOH should increase the human resources of nurses working in the ICU in addition to training nurses in the ICU.
- Compassion fatigue must be addressed in all aspects of nursing practice so that nurses can recognize it when it arises. Nurses working in intensive care units and hospitals in general require improved training and capacity to deal with compassion fatigue.
- To assist all hospital staff in dealing with their compassion fatigue, an assessment of compassion fatigue among other workers who were not included in this study is required.
- The hospital should establish team leaders who will work closely with the ICU and monitor their degree of compassion fatigue to intervene if it happens.
- Nurses should have to develop a smooth relationship with co-workers so that they can be able to give compassionate care to patients.
- Hospitals should arrange for colleague and supervisor support and increase the educational level of nurses.

- Researchers should do qualitative research to understand the extent and depth of compassion fatigue in ICU nurses.
- Compassion fatigue is high at public hospitals in Addis Ababa, Ethiopia, so the hospital administration should design interventions such as training to increase their (self-) awareness of compassion fatigue through education, debriefings, and supervisions and equip helping professionals with adequate knowledge and skills that will enhance their coping and resiliency resources such as getting educated, practicing self-care, setting emotional boundaries, engaging in outside hobbies, cultivating healthy friendships outside work, boosting resilience, using positive coping strategies, identifying workplace strategies, and seeking personal therapy.
- The organization should have a counselor to help those that exhibit signs of compassion fatigue manage them in their early stages and also implement strategies that was help to minimize emotional and physical exhaustion. Moreover, institutions could emphasize encouraging psychotherapists in their work by exploring the positive aspects of providing psychological help, such as psychological growth and compassion satisfaction.

8. Strength and Limitation

8.1 Strength

The strength of our thesis:

- We used the self-administered questionnaire so my study participants may have been more confident in describing their compassion fatigue.
- Our current study has provided more information about compassion fatigue among the nurses working in the intensive care unit which could contribute to more practical recommendations.

8.2 Limitation

The limitations of our study include:

- The research results were limited to only quantitative methods, which may not have fully explored the complex personal experiences associated with compassion fatigue.
- Short period of time to collect data and analysis for this research because of the processing of getting letters to collect data for each public hospital.
- There was not enough budget allocation for this research thesis to study at all public hospitals.

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Annexes/Appendices

ANNEX 1: INFORMATION SHEET

Good morning/afternoon, my name is _____. I am here on behalf of Mr. Dawit Geto Tadesse to collect data for a study to assess the prevalence of Compassion

Fatigue and Associated factors among nurses working in intensive care units of public hospitals in Addis Ababa, Ethiopia. I am a data collector who is conducting research for the partial fulfillment of the requirements for the degree of Master of Critical Care Nurse Practitioner at St. Paul's Hospital Millennium Medical College. This location has been randomly all for assessment, and your involvement is completely based on volunteer participation. I guarantee that your identity was kept confidential. I was not asking for your name or any other information that directly identifies you. There are no risks anticipated for this study, and no benefit or compensation was awarded for participating in the study, but the results of your response was essential for policy makers in regards to identifying problems. You have the right to participate or not to respond to the question partially or fully, and you also have the right to withdraw your participation at any time during the self-administered question. This question was last at most 5-10 minutes. If you agree to participate, you were start with a question. Before we start, I need you to explain that I have read you this consent and you understand and freely agree to self-administer questionnaire.

Are you a volunteer? 1. Yes. 2. No.

If yes, please continue. If not, please stop participating in the study.

If you have any inquiries or questions, please contact Mr. Dawit Geto Tadesse.

Address of the principal investigator: + 251 911034327 (Email: dawitgeto547@gmail.com)

Name of data collector: _____ Signature: _____

Date_____

ANNEX 2: CONSENT FORM

In signing this document, I am giving my consent to participate in the study entitled "Prevalence of Compassion Fatigue and associated factors among nurses working in all public hospitals in Addis Ababa". I have been informed that the purpose of this study is to assess the prevalence of Compassion Fatigue and associated factors among nurses working in an intensive care unit. I

have understood that participation in this study is entirely voluntarily and my participation or refusal to answer the questions was having no effect on me. I have been told that my answers to the questions or reports of this study were never identifying me in any way. I understood that Dawit Geto is the contact person if I have questions about the study or about my rights as a study participant. I also know that the address of the principal investigator is: Dawit Geto, mobile number +251 911034327, e-mail dawitgeto547@gmail.com

I here approve my consent to take part in the study with my signature.

Signature_____

Date_____

ANNEX 3: QUESTIONNAIRE

Part I: -Table 1. Socio-demographic and work-related characteristics among nurses that Work in adult intensive care unit at public hospitals in Addis Ababa, Ethiopia in 2021.

Section 1. Socio-demographic and work-related characteristics

Please answer the following questions about yourself by circling the number in front of the option you choose.

S/NO	Characteristics	Chooses
101.	Age	1. ≤ 24 . 2. 25 – 34 yr. 3. 35 – 44 yr. 4. ≥ 45
102.	Gender	1. Male 2. Female
103.	Marital Status	1. Single 2. Married 3. Divorced 4. Widowed 5. others
104.	Religious	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others
105.	Working Experience	1. ≤ 3 years 2. 4-7 years 3. ≥ 8 years
106.	Monthly income in ETB	1. ≤ 3200 2. 3201-5250 3. 5251-7800 4. ≥ 7801
107.	Educational (qualification) Background	1. Nursing Diploma 2. Nursing Bachelor's degree 3. Nurse MSc
108.	Current duty shift	1. Day shift 2. Night shift 3. Alternate shift
109.	Position in the unit	1. Staff Nurse 2. Charged (Head) Nurse 3. Coordinator
110.	Level of institution	1. General Hospital 2. Referral Hospital
111.	Presence of work overload	1. Yes 2. No

Section 2: Personality Scale Questions

TEN-ITEM PERSONALITY INVENTORY-(TIPI)

1= Rarely/Never 2=At times 3=Not Sure 4=Often 5=Very Often

Read each statement carefully. Indicate how you feel about each statement.

S.no	Characteristics	1	2	3	4	5
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1.	I see myself as some who is revered					
2.	Is generally trusting					
3.	I see myself as some who tends to be lazy					
4.	I see myself as some who is relaxed, handles stress well					
5.	I see myself as some who has few artistic interests					
6.	I see myself as some who is outgoing, sociable					
7.	I see myself as some who tends to find fault with others					
8.	I see myself as some who does a thorough job					
9.	I see myself as some who gets nervous easily					
10.	I see myself as some who has an active imagination					

Section 3: Table Social Support

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement. 1=Very Strongly Disagree 2= Strongly Disagree 3=Mildly Disagree 4=Neutral 5 = Mildly Agree 6= Strongly Agree 7= Very Strongly Agree								
1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7
2.	There is a special person with whom I can share my joys and sorrows.							
3.	My family tries to help me.							
4.	I get the emotional help and support I need from my family.							
5.	I have a special person who is a real source of comfort to me.							
6.	My friends try to help me.							
7.	I can count on my friends when things go wrong.							
8.	I can talk about my problems with my family.							
9.	I have friends with whom I can share my joys and Sorrows.							
10.	There is a special person in my life who cares about my feelings.							
11.	My family is willing to help me make decisions.							
12.	I can talk about my problems with my friends.							

Part II: Compassion Fatigue self-test response of participants to each item of nurses working in Adult Intensive care units at public hospitals in Addis Ababa, Ethiopia 2021.

Section 4. Choose the number that accurately reflects how frequently you encountered it.

1= Rarely/Never 2=At times 3=Not Sure 4=Often 5=Very Often

I frequently experienced: 1 2 3 4 5 Consider each of the following characteristics about you and your current situation. Circle in the number for the best response. (Use one of the following answers).

S/ N O	Items about you:	Rarely/N ever (1)	At Times (2)	Not Sure (3)	Often (4)	Very Often (5)
1.	I am preoccupied with more than one person I [help].	1	2	3	4	5
2.	I jump or am startled by unexpected sounds.	1	2	3	4	5
3.	I find it difficult to separate my personal life from my life as a [helper]	1	2	3	4	5
4.	I think that I might have been affected by the traumatic stress of those I [help]	1	2	3	4	5
5.	Because of my [helping], I have felt "on edge" about various things.	1	2	3	4	5
6.	I feel depressed because of the traumatic experiences of the people I [help].	1	2	3	4	5
7.	I feel as though I am experiencing the trauma of someone I have [helped].	1	2	3	4	5
8.	I avoid certain activities or situations because they remind me of the frightening experiences of the people I [help].	1	2	3	4	5
9.	As a result of my [helping], I have intrusive, frightening thoughts.	1	2	3	4	5
10 .	I can't recall important parts of my work with trauma victims.	1	2	3	4	5