ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

PREVALENCE OF COMPASSION FATIGUE AND ASSOCIATED FACTORS AMONG NURSES WORKING IN CANCER CENTERS OF SELECTED HOSPITALS IN ETHIOPIA

ATHESIS TO BE SUBMITTED TO THE SCHOOL OF NURSING AND MIDWIFERY, COLLEGE OF HEALTH SCIENCE, ADDIS ABABA UNVIRSITY AS PARTIAL FULFILLMENT OF THE REQUIRMENT FOR THE DEGREE OF MASTER OF SCIENCE IN ONCOLOGY NURSING.

BY: -ALMAZ MIRUTSE (BSC)

ADVISOR(S):-

1 .ZURIASH MENGISTU (BSC, MSC, PHD FELLOW)

2. KETEMA BIZUWORK (BSC, MSC)

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ABBREVIATIONS

ARP- Address Resolution Protocol

BO- Burnout

CDC-Centres for Disease Control and Prevention

CF-Compassion fatigue

CHS-College of Health Science

IRB-Institution Review Board

MBS-Mindfulness-based stress reduction

MSPS-Multidimensional scale of perceived social support

NORA -National Occupational research agenda

OLS-Ordinary least square

ProQOL-Professional Quality of Life Scale

STS-Secondary traumatic stress

TASH-Tikur Anbessa Specialized Hospital

TIPI -Ten-Item Personality Inventory

DECLARATION

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every effort has been made to avoid plagiarism in the preparation of this thesis.

This thesis is submitted in partial fulfilment of the requirement for a master of degree from the Addis Ababa University at College of Health Sciences, department of Nursing and Midwifery. I solemnly declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma or certificate.

STUDENT

Name: Almaz Mirutse Signature: _____Date: _____

RESEARCH ADVISORS:

_____	_____	_____	_____
NAME	RANK	SIGNITURE	DATE
_____	_____	_____	_____
NAME	RANK	SIGNITURE	DATE

APPROVED BY THE BOARD OF EXAMINERS

As member of the Board of examiners of the final/MSc thesis open defences examination, we certify that we have read and evaluated the thesis submitted by AlmazMirutse. We recommended that the thesis be accepted as fulfilling the thesis requirement for Master of Science in oncology nursing

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Name of Chairman Signature Date

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Name of Internal Examiner Signature Date

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ABSTRACT

Background: - oncology nurses are exposed to stressors that may contribute to compassion fatigue, leading to high rates of turnover, potential financial implications for organizations, and concerns for patient safety and employee well-being. Therefore the aim of this study to assess the prevalence of compassion fatigue and associated factors among nurses working in cancer centres of selected hospitals in Ethiopia.

Objective: -The aim of this study was to assess the prevalence of compassion fatigue and associated factors among nurses working in cancer centres of selected hospitals in Ethiopia.

Methods: - Institution based cross-sectional study were conducted in nurses who were working in oncology unit of public Hospitals of Ethiopia.

Total sample sizes of 230 nurses were participated in the study. Data was coded and entered into EPi data software and exported to SPSS version 23 for analysis. Descriptive statistics such as frequencies and percentiles were computed to describe the study population in relation to relevant variables. Multiple linear regression models were employed. Variables p value <0.05 at 95 confidence interval were considered statically significant.

Results: - Majority of the respondents 154 (67%) were females. One hundred forty seven of the respondents (63.9%) were in the age group of 24-34yrs and 66.09% of the participants had moderate compassion fatigue.

Discussion: - The average compassion fatigue mean score among all study participants was 35.8 (SD = 7.78). Educational status, significant other support, family support, Consciousness and openness were the variables negatively associated and work over load, income, friend support and neuroticism were the variables positively associated with compassion fatigue in oncology nurses respectively.

Conclusion:-The average compassion fatigue mean score among all study participants was 35.8 (SD = 7.78). Educational status, work over load, income, significant other support, family support, friend support, Consciousness, neuroticism and openness were the factors that affect the compassion fatigue of oncology nurses.

Kew words: compassion fatigue, oncology nurse, Ethiopia

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INTRODUCTION

1.1. Back ground

Compassion fatigue is defined as the typical effect of working with clients that have experienced extremely stressful events and it lowers the level of empathy that practitioners give for their clients (1, 2). It is the state of emotional, biological and physiological exhaustion that occurs because of the exposure to the clients suffering, and in the process it reduces the compassionate care that they give for their clients.

(3, 4).

Compassion fatigue is a fatigue that has an acute onset and it can be difficult to be detected and make the nurses to be unable to give proper care for their patients (5-7). It is a natural effect that follows from the behaviour and emotions resulting from the awareness of the extremely stressful event of the patient. Compassion fatigue consists Secondary Traumatic Stress, Burnout and Compassion Satisfaction (8). If you work directly in the path of danger, such as being a fighter or humanitarian aid worker; your exposure is primary. However, if you are exposed to others' traumatic events as a result of your work, such as in an emergency room or working with child protective services, this is secondary exposure (9).

On the other hand, from the researches perspective burnout is a negative feeling with gradual onset associated with feeling of hopelessness and difficulties in dealing with work or in doing your job effectively (10).Whereas, compassion satisfaction is defined as the satisfaction resulting from being able to do your work well (11-13). Although the existence of burnout is thought to increase of likelihood of developing CF, compassion fatigue and burnout are not the same (14). CF is considered a" natural'' consequence of caring for people who are suffering, while burnout is a response to negative work environment triggers such as workload and the inability to achieve work goals(3, 5, 15).

Since cancer is a serious life treating disease which involves physical, emotional and spiritual suffering and due to the fact that oncology nurses are the responsible ones to provide care to cancer patients; nurses who work in oncology or see more patient deaths may be at greater risk (15, 16).Also when we form close caring relationships with patients, we may be putting ourselves at higher risk; since a particular patient or

a patient's family member may remind us of someone important in our lives. Especially if that person is dead, we may be triggered emotionally (3, 4).

1.2. Statement of the problem

Compassion fatigue affects the nursing profession globally and it is the cause for the existence of burnout (17).Therefore, Oncology nurses acquire compassion fatigue through repeated exposure to patients suffering the effects of trauma, such as side effects of aggressive treatment and the end stages of cancer (18).

Oncology nurses are one of the most exposed groups in the healthcare profession, due to their strong, compassionate relationships and interactions with patients and families while providing end of life care. These nurses have an increased risk of stress and psychological disorders, including CF. The physical, spiritual, social and organizational consequences of compassion fatigue are widely spread and they are increased rates of absenteeism, burnout, turnover, stress, insomnia, nightmares, headaches, gastrointestinal complaints, anxiety and depression(13, 19).

When the patient dies, the deep relationship recognized between the nurse, patient, and family members may transform into devastating grief. Moral distress evolves when work place barriers prevent nurses from carrying out what they believe to be ethically appropriate courses of action(20).

The occurrence of compassion fatigue is significant for healthcare organizations because of its associations to nurse retention and turnover, patient satisfaction, and patient safety. Study have also shown that compassion fatigue can take a toll on the care as well as the workplace, causing decreased productivity, more sick days used, and higher turnover rate(21, 22).

The prevalence rate of compassion fatigue between oncology nurses is 16%-39%, with burnout range of 8%-38%. Not only does CF impact nurses' jobs and health, it also impacts hospitals, and most considerably, patients(13).

All over Africa, the human resource failures have strictly affected healthcare quality. The healthcare work forces take extreme and sometimes multifaceted workloads that lead to compassion fatigue(23).

Nursing care engages natural admiration and duty to alleviate pain and suffering, which involve, kindness, compassion, and competency, In general, those who enter the nursing profession are motivated by the desire to give quality compassionate care, in spite of specialty care provided by oncology nurses challenges persist due to the nature of cancer(24).

There are few researches conducted on area of compassion fatigue in US, Canada and china; however in Ethiopia this area on oncology nurses has not been explored. Therefore, this study was assessing the prevalence of compassion Fatigue and its associated factors on nurses working in oncology centre at hospitals in Ethiopia.

1.3. Significance of the study

The study describes the prevalence of compassion fatigue and associated factors among nurses working in oncology unit in Ethiopia. The study will help health care institutions; particularly hospitals to recognize factors related to compassion fatigue among nurses working in oncology unit &it helps to decrease the rates of turnover, potential financial implications for organizations, and concerns for patient safety and employee well-being. It also helps to take corrective measures and for improving compassionate care for patients.

It will also be significant for policy makers for taking corrective actions regarding the profession. Moreover, its findings will be used as a reference for other researchers who have interest in the area for further investigation.

2. LITERATURE REVIEW

2.1. Compassion fatigue history

Compassion fatigue was first introduced by Join son in 1992 during an investigation of burnout in emergency nurses (18).Compassion fatigue is a recently defined disorder, characterized by depressed mood in relationship, to follows by feelings of fatigue, pessimism and valueless. Nurses may be chronically tired and irritable, they may also dread to go work or walking into a patient's room they will lack joy in life, feel inattentive, drink more alcohol or eat too much or practice an exasperation of existing physical complaint, such as headache or body aches (25).

Since there is no instrument of measurement specific to compassion fatigue, the concept of CF is vague. Different concepts are used interchangeably because of the lack of appropriate measurement tools that can identify individual suffering from burnout or other traumatic stress syndromes ,leading to ambiguity in available studies (26).

(CF) is incorporated of Secondary Traumatic Stress (STS), Burnout (BO) and Compassion Satisfaction (CS) (8). Compassion fatigue development is unpredictable and can occur in nurses besides of their years of experience. In a recent qualitative study, the most influence on CF was the existence of STS. BO comes gradually and stems from high and mighty workloads or unaccommodating work environments.

BO illustrates feelings of hopelessness and that an individual's efforts make no difference. CS is defined as the pleasure that comes from the feeling that work is done well, that it donate to the work environment, and even to the greater good. An imbalance in support of STS and BO, when difference to CS, can lead to compassion fatigue (27).

2.2. Prevalence of compassion fatigue

One of the most exposed groups in the healthcare profession is oncology nurses. Due to their strong, caring relationships and communications with patients and families while providing end of life care, these nurses have an increased risk of stress and psychological disorders, including CF. The prevalence rate of compassion fatigue among oncology nurses is average score21.39 (4.84), in china oncology nurse(28)., 15.2 (SD = 6.6),in mid-western United States(29).,13 reported by(30). Statistical

analysis demonstrated the risk associated with each of the ProQOL R-IV subscales based on cut scores. (M = 13.6, SD = 6.59). measure by (ProQOL-CSF-R-III)reported in hospice nurses Florida(31) .

Healthy People 2020 are combination with the Centres for Disease Control and Prevention (CDC) and the National Occupational Research Agenda (NORA) to aid prevent risks. Several studies that show high levels of compassion fatigue among oncology nurses compare with levels of compassion satisfaction, burnout, and compassion fatigue in emergency department nurses (n = 49) with nurses in intensive care units (ICUs; n = 32) and inpatient oncology (n = 12) and nephrology (n = 16) units in a hospital located in the South eastern United States (8).

2.3. Associated factors of compassion fatigue.

2.3.1. Demographic and Work related factors

The demographic factors are influence in compassion fatigue in the prior study these factors include age, gender, education level, marital status, and religion (32). Trends noted in regards to education level were that levels of depersonalization were higher among younger nurses with less than 4 years of experience (33). Thus, the older and more experienced the nurse, the higher was the degree of knowledge and skill and the lower was the risk for compassion fatigue. The consequence that younger and less experienced nurses are at higher risk for compassion fatigue than their older age group (13).

Work-related factors such as years of clinical nursing, work department, shifts and loadings, and characteristics of the working hospital have also shown a significant relation with compassion fatigue (34) Oncology nurses with years of experience always had the highest percentages of high-risk scores across all three subscales populations (35). When contrasts to nurses from palliative care units, oncology nurses were found to have statistically significant higher emotional exhaustion and depersonalization scores and lower personal achievement scores. Work environment and factors like working as a staff nurse especially at night shift upset individuals (34).

It is known that Nurses are the largest and most important occupational group in the health care sector who provide care to meet the multifaceted needs of patients. In the increased workload in the health care system they are at risk for the perception of

compassion fatigue; since the concept of compassion fatigue negatively affects the physical and mental health of nurses; job performance and satisfaction (36).

"Factors that were positively associated with the incidence of compassion fatigue included:- personal trauma, patient trauma, turnover intention, anxiety, life demands, empathy variance, stress, nurse caring, work-related loss, lack of engagement with work, inadequate coping mechanisms, burnout, and specialized work(37).

Factors that were negatively associated with the incidence of compassion fatigue included:- personal supports, compassion satisfaction, working through bereavement, stress management activities, health backing behaviours, intervention programs, supposed attentiveness during basic nursing education, and engagement with work''(18, 38)

2.3.2. Psychological factors

Personality has been defined as a constellation of attributes that describe and predict an individual's behaviour across situations and over time (39, 40)., Research conducted in China indicated that persons with neuroticism are more likely to feel angry, anxious and depressed compared with those without neuroticism so; neurotic nurses may have a greater inability to control their emotions when faced with negative events, putting them at higher risks of Compassion fatigue (41).

2.3.3. Social factors

Social support plays a significant role in reliving compassion fatigue and burnout among health care professionals(4).

Social support has been defined as the actual or perceived availability of helpful behaviours by others (42).there for Higher levels of support from co-workers were correlated to lower levels of emotional exhaustion in nurses(43). Social supportive behaviours are correlated to commitment for work and units' decision-making style in nurses. Perceived organizational support is related to nurses' health and job satisfaction (44). Social support (supervisory support and family support) was negatively related to BO and secondary traumatic stress (STS) (45-47).

2.4. Compassion fatigue symptoms

Compassion fatigue has a wide array of consequences, Preoccupation with the recounted Traumatic events, avoidance and numbing, an increase in negative arousal, lowered frustration and tolerance, intrusive thoughts of client's material, dread of working with certain clients, a decrease in the personal feeling of safety, a sense of corrective impotence, a reduced sense of purpose, and a decreased level of functioning in a number of areas are instances of warning sign(48).

Figley, defined three primary characteristics of the compassion fatigue development process happening within a traumatic experience (disaster, death, etc.) and the exposure to pain, deep concerns of professionals, and understanding and sharing the suffering felt by the patients for whom they provide care. In this case, as the empathic response starts, nurses have a propensity to internalize the condition as they watch the amount of pain suffered by those they care for (2).

There are some signs of compassion fatigue that Reduced feelings of sympathy or empathy, fright of working for or taking care for others and feeling culpable as a result ,Feelings of irritability, anger, anxiety, depersonalization, Hypersensitivity or complete selfishness to emotional material, Feelings of injustice toward the therapeutic or caregiver relationship, Headaches, problem on sleeping, Weight loss, impaired decision-making, Problems in personal relationships, Poor work-life balance reduced sense of career completion (49).Specific symptoms of CF may include re-experiencing the traumatic event, having disturbing thoughts, avoiding or numbing reminders of the event and having sleep disorder (50).

2.5. Theories and Developmental Models of Compassion Fatigue

Compassion fatigue is an ordinary consequence of working with people who have practiced extreme stressful events in their lives. compassion fatigue reactions categorized into three essential area of professionals who work with trauma victims (51).that manifest First, indicators of psychological distress occur and include-Emotions(sadness, depression, anxiety, or dread), Nightmares or negative images, Sleep difficulties, Headaches, Gastrointestinal suffering, Obsessive behaviours,-Physiological symptoms of palpitations and hyperventilation and Impairment daily activities (50).

The Canadian Nurses Association (2010) concluded that there is no operational description of compassion, Moreover the absence of instruments of measurement specific to compassion fatigue leads to the indirectness of the concept. Different concepts are used interchangeably in amendment because of the lack of appropriate measurement tools that can identify individuals suffering from burnout or other traumatic stress syndromes, leading to ambiguity in available studies (26).

Experts in the field of compassion fatigue have only now starts to understand the potential use and effectiveness of involvement in the field of nursing. With the concept of compassion fatigue becoming better understood, results from newer studies involving use of group interventions for nurses have been available. The well validated stress reduction model of an MBSR(Mindfulness-based stress reduction) program was developed by Kabat-Zinn (1990) and employed in many stress-management clinics across the United States (52).

2.6. Conceptual frame work

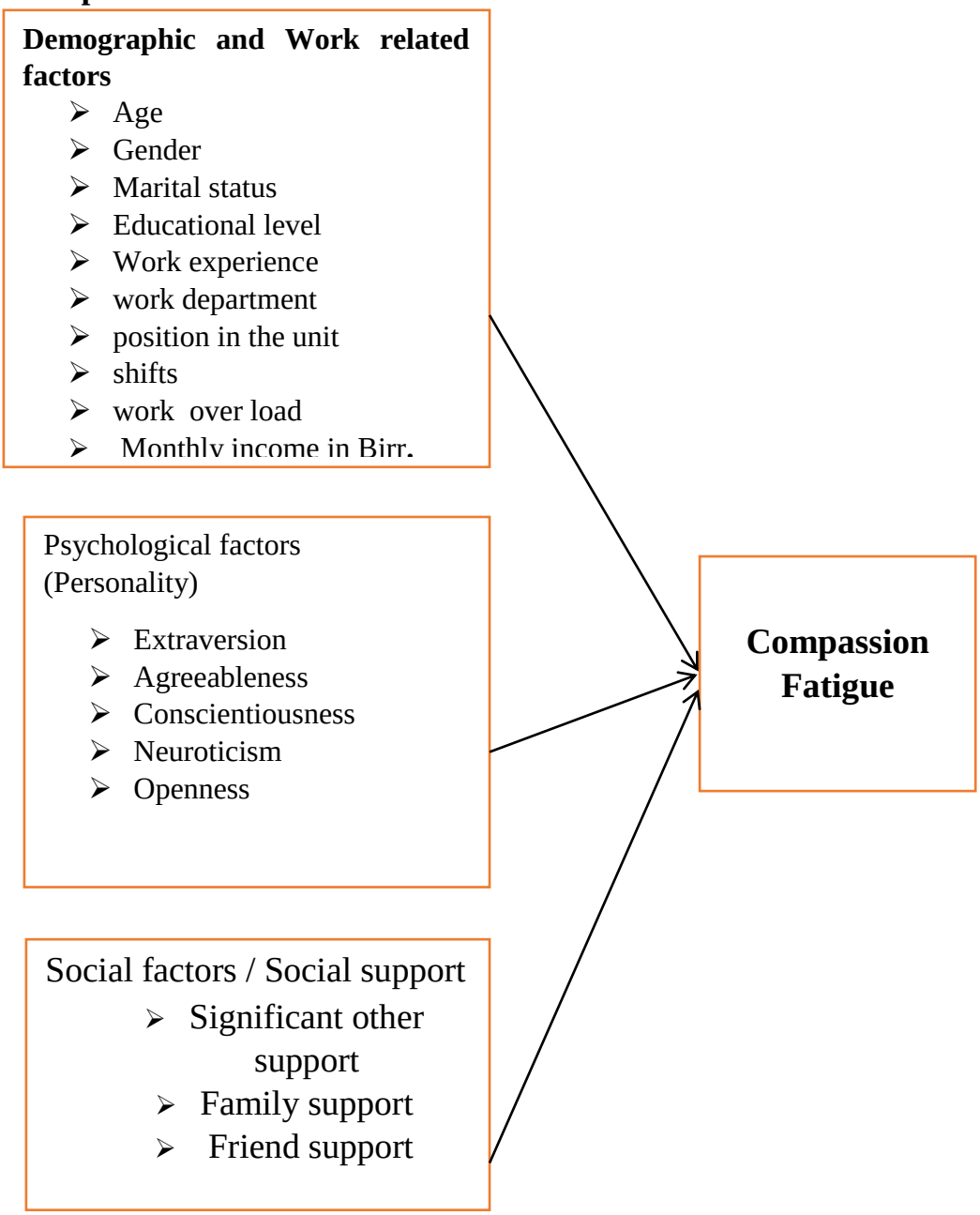

Figure 1 Compassion fatigue frame work adopted from Literature(28).

3. OBJECTIVE

3.1. General objective

The aim of this study was to assess prevalence of compassion fatigue and associated factors among nurses working in cancer centres of selected hospitals in Ethiopia.

3.2. Specific objectives

- To determine prevalence of compassion fatigue among nurses working in cancer centres of selected hospitals in Ethiopia.
- To identify factors associated with compassion fatigue among nurses working in cancer centres of selected hospitals in Ethiopia.

4. METHODS

4.1. Study area and period

The study was conducted between March 20-May 20/2020, in 5 selected public hospitals in Ethiopia. Tikur Anbessa Specialized Hospital (TASH),St.Pauls Hospital, Zewditu memorial hospital, Ayder comprehensive specialized hospital and Jimma University medical centre (JUMC).

TASH is a tertiary teaching hospital with 700 beds and give service for about 370,000 to 400,000 patients per year. The oncology centre at the Hospital is the only referral centre in the country. The oncology unit were giving service for more than 60,000 cancer patients annually and has an outpatient, in-patient (33beds), radiotherapy, and chemotherapy and surgery care service. There are 6 senior oncologists, 25 residents and 99 nurses and 11 oncology nurses and 8 pharmacists, 5 radiologists, 4 medical physicists working in the unit.

The second study area was St. Pauls Hospital located in Gulele sub city, Woreda 08 of Addis Ababa Ethiopia; it currently has 392 beds, with an annual average of 200,000 patients and a catchment population of more than 5 million. The oncology unit is giving service for more than 600 cancer patients annually has an outpatient; there are 1senior oncologists, and 40 nurses and 2 oncology nurses.

The third study area Ayder comprehensive specialized hospital. Ayder comprehensive specialized hospital is a teaching hospital with 500 beds and gives service for about 200,000 patients per year. The oncology gives service for more than 2000 cancer patients annually an outpatient and in-patients (20beds). There are 1 adult, 2 paediatric oncologists, 33 nurses and 3 oncology nurses working in the unit. The forth study area is jimma university medical centre (JUMC).JUMC is geographically located in Jimma town which is 357km from Addis Ababa. The oncology unit is giving service for more than 450 cancer patients annually it has 35nurses' work in the unit. The fifth study area were Zewditu memorial hospital oncology unit there were 35 nurses work in the unit.

4.2. Study design

Institutional based Cross-sectional study design was conducted on selected public Hospitals.

4.3. Source population

All nurses who were working in oncology unit of Ethiopia public Hospitals.

4.4. Study population

All nurses' were working in oncology unites of those selected 5 public hospitals In Ethiopia.

4.5. Inclusion and exclusion criteria

All Nurses working in different oncology departments of the selected hospitals were included.

4.6. Sample size

The total numbers of nurses working on oncology unit were 250. As a result, census method was used.

4.8. Sampling procedure

Simple random sampling techniques were used to selective hospitals serving oncology service among the 7 public Hospitals. The selected Hospital in the study was Addis Ababa (Tekur Anbesa Specialized Hospital, Zewditu Hospital, and St. Paul's Hospital Millennium Medical College (SPHHMC).Mekelle (Ayder Referral Hospital), and Jimma (Jimma Medical University Hospital).

4.9. Study variables

4.9.1. **Dependent variable**: - Compassion fatigue

4.9.2. **Independent variables**

- Demographic factors
- Work-related factors
- Psychological factor :-Personality traits
- Social factor

4.10. Operational definitions (Measurement)

Compassion fatigue is defined by Pro QOLV as how frequently the nurse experienced components of compassionate fatigue in the last 30 days.

Score ≤22 considered as had Low risk of compassion fatigue

Score 23-41 considered as have =average compassion fatigue

Score ≥42 = considered as have high risk of compassion fatigue(53).

4.11. Data collection Instrument procedure and its measurement method

For assessing compassion fatigue and its related factors of oncology nurses Professionals; a tool measuring Quality of Life Scale (ProQOLV) was used. The Pro QOL was developed to assess the levels of (compassion satisfaction), (compassion fatigue), and (burnout levels) for individuals who work with clients who have experienced extremely stressful events. Using a five-point Likert-type scale from 1 (never) to 5 (very often) that yields composite scores for the three psychometrically unique phenomena each of the subscales; the Cronbach was 0.88 for compassion satisfaction, 0.75 for burnout, and 0.81 for compassion fatigue.

The scales are defined as, Compassion fatigue: -The negative feelings an individual experience by being exposed to work-related trauma which may include secondary traumatic stress. The questions selected for this research study directly correspond with the questions Located within the Pro QOLV. Each scale evaluated in the Pro QOLV is made up of ten questions. The compassion fatigue scale, referred to as the secondary traumatic stress scale, is comprised of the following questions.SUM of pq2, pq5, pq7, pq9, pq11, pq13pq14, pq23, 25, and 28.

pq =professional quality of life.

In addition to (Pro QOLV); Questionnaire includes demographic factors (Age, Gender, Marital status, Educational level and Monthly income in Birr).work related factors, (Work experience, work department, job title, shifts, work load)

(Psychological factors (TIPI) and Multidimensional scale of perceived social support (MSPSS) ware used. The MSPSS is a measurement for perceived social support (emotional, instrumental, informational, and appraisal) from three sources of

individuals' social lives: family, friends, and significant others. This scale contains 12 items.

The MSPSS makes use of a 7-point Likert-type scale for its measurements, with ratings from "1 = very strongly disagree" to "7 = very strongly agree." The range of possible scores is 12–84, with higher scores (or mean scores) representing higher levels of perceived social support. It is a self-report scale measuring the perceived level of support from family (Item 3, 4, 8, and 11), friends (Item 6, 7, 9, and 12), and a significant other (Item 1, 2, 5, and 10) (54).

The MSPSS produces three scores. The Cronbach's coefficient alpha values were 0.91, 0.87, and 0.85 for significant other, family, and friends subscales, respectively (55).Cronbach's alpha values of 0.88 was found for the family, 0.90 for the friends, and 0.61 for the significant other subscales (56).

(TIPI) Ten-Item Personality Inventory is an appropriate measure of the Big-Five model. It suggests Five personality traits: Extraversion (to be sociable, active), Agreeableness (to be soft-hearted, trusting), Conscientiousness (to be organized, reliable), Emotional Stability (to be calm, relaxed), and Openness (to be curious, creative) (57).

Respondents were encouraged to fill the questionnaire and revisited at least twice and the respondents was encouraged to respond to all items in the questionnaire within the time they dedicated as much as possible to minimize large non-response rate.

4.12. Data quality assurance

In order to assure the quality of data the following measures were taken. Quality and reliability was assessed using pre-test which was conducted in armed force hospital on 5% of the sample size. Orientation was given to one data collector, to collect the questionnaire and to give clarification if needed at each site. The data collectors were BSc nurse students who were taken from the same university (hospital) in each study area .Valid questioner that testes in other research The Cronbach's coefficient alpha values of 0.81were used.

4.13. Data processing and analysing

Data were analysed by using descriptive statistics tools like frequency, mean and standard deviation. Linear multiple regression were used to assess the correlation

between the dependent and independent variables. Multiple linear regression models was used to analyse the relationship between the compassion fatigue and explanatory variables like gender, age, educational level, income, marital status, work load, duty shift, position and others due to the dependent variable had 3 outcome variables. In addition, ordinary least square (OLS) is conducted using SPSS software version 23 to determine the most significant and influential explanatory variables affecting the compassion fatigue of nurses. In light of the above, to investigate the effect of the determinants of compassion fatigue, the following general multiple regression models were adapted from different studies conducted on the same area.

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots + \beta_{17} x_{17} + \varepsilon_i$$

$$y\ (Compassion\ fatigue) = \beta_0 + \beta_1 gen + \beta_2 age + \beta_3 educ + \beta_4 income + \beta_5 maritalstatus + \beta_6 work\ load + \beta_7\ duty\ shift + \beta_8\ significant\ support\ + \beta_9\ family\ support + \beta_{10}\ friend\ support + \beta_{11}\ total\ service + \beta_{12}\ oncology\ service + \beta_{13}\ e\text{xtraversion} + \beta_{14}\text{agreeableness} + \beta_{15}\text{consciousness} + \beta_{16}\text{neurotis} + \beta_{17}\ openness + B18position$$

Where:

Y ($Compassion\ fatigue$) = dependent variable

$x_1 = gender$

$x_2 = Age$

$x_3 = educational\ status$

$x_4 = income\ (birr)$

$x_5 = Marital\ status$

$x_6 = work\ load$

$x_7 = duty\ shift$

$x_8 = significant\ support$

$x_9 = family\ support$

$x_{10} = friend\ support$

$x_{11} = total\ service$

$x_{12} = oncology\ service$

$x_{13} = extraversion$

$x_{14} = agreeableness$

$x_{15} = consciousness$

$x_{16} = neurotism$

$x_{17} = openness$

ε_i = error component

β_0= Constant

β_i= 1, 2, 3…11 are coefficients to be estimated

(58).

4.14. Ethical considerations

The ethical clearance and approval letter was obtained from Institution Review Board (IRB) of Addis Ababa University College of health science, school of nursing And midwifery post graduate school.

Addis Ababa University send a letter to the Health facility of the study setting.

There is no any potential risk that caused harm for any of the study participants.

The information obtained from participants was kept secured and confidential.

Plan for dissemination of the findings

Addis Ababa University, college of health science school of nursing and midwifery
TASH, Ayder Referral Hospital, Jimma medical university Hospital
Zewditu Memorial Hospital, St.paul'sHospital Millennium medical college,
Federal ministry of health & international journals for publication

5. RESULT

5.1. Socio demographic and work related characteristics.

From the total 250 questionnaires 230 respondents participated in the study making 92% response rate. One hundred forty seven (63.9%) fall in between the age group of 24-34. Majority of the respondents 154 (67%) were females. Two hundred five (89.1%) has degree level of education and 19 (8.3%) were master degree. Fifty two percent of the participants were married.

Majority of the participants were159 (69.1%) had greater than 5000 monthly income. Fifty nine percent (25.7%), 47(20.4%) and 42(18.3%) of the nurses were working on paediatric oncology, adult oncology and gynaecology ward respectively. Majority of the nurses (90.9%) were staff nurses. Majority 90 (39.1%) and 86 (37.4%) of nurses were more than 7 years and 4-7 years of work experience. One hundred twenty five (54.3%) of the nurses had served 3 and below years oncology unit (Table 1).

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Table 1Socio-demographic and work related characteristics among nurses that work in oncology unit in selected hospitals in Ethiopian, 2020(N= 230).

Variables	Category	Number	Present (%)
Age in years	< 24 24 – 34 35 – 45 >45	19 147 52 12	8.3% 63.9% 22.6% 5.2%
Sex	Male Female	76 154	33.0 67.0
Educational status	Diploma Degree Master	6 205 19	2.6 89.1 8.3
Marital status	Single Married Divorced Windowed	98 120 11 1	42.6 52.2 4.8 0.4
Monthly income in birr	< 3000 3000 -5000 >5000	8 63 159	3.5 27.4 69.1
Area of work	Paediatric oncology ward, paediatric oncology opd, Adult oncology ward Adult oncology opd Haematology unit, Gynaecology ward Palliative care unit.	59 16 47 41 24 42 1	25.7% 7% 20.4% 17.8%10.4% 10.4%18.3% 18.3% (0.4%)
Position in working area	Head nurse Staff nurse	21 209	9.1% 90.9%
Years of total clinical service	<3 4-7 >7	54 86 90	23.5 37.4 39.1
Years of oncology service	<3 4-7 > 7	125 80 25	54.3 34.8 10.9%
Duty shift	Day shift Night shift Alternate shift	122 20 88	53.0 8.7 38.3
Work overload	Yes No	180 50	78.3 21.7

5.2. Prevalence of Compassion fatigue on nurses

The average compassion fatigue score among all study participants were 35.8 (SD = 7.78). Majority 152 (66.09%) of the nurses had moderate compassion fatigue, followed by high 64 (27.8%) and 14(6.1%) low compassion fatigue.

5.3. Factors Associated to compassion fatigue in nurses

Multiple linear regressions model was used among dependent and the independent variables. educational status, work over load, income, significant other support ,family support, friend support, Consciousness, neuroticism and openness were the variables significantly associated with compassion fatigue. As educational status increased by one unite compassion fatigue decreases by 3.7 (t- -2.665 and p-value of 0.0085).

As work overload increase by one unite compassion fatigue also increased by 2.9 (t-2.506, p-value of 0.013) When monthly income increase by one unit compassion fatigue in nurses increase by1.94 (t-2.098, p-0.037).

When significant other (colleague and supervisor)support increase by one unit compassion fatigue decrease by 1.8 (t--2.913, p-value 0.004).

In the friend sport is increase by one unit compassion fatigue increase by2.4 (t-3.082,p-value 0.002).

Neuroticism in the nurse's increase by one unit compassion fatigue also increasesby2.3 (t-2.352, p-value 0.020).

Family support is negatively associated to compassion fatigue. When Family support is increase by one unite compassion fatigue decrease by1.5 (t—2.057, p-0.41).

When Conscientiousness increase by one unite compassion fatigue decrease by 2.7 (t--2.265, p-value0.025).As openness in the nurses is increase by one unit compassion fatigue in nurses decrease by 2.4 (t-2.118, p-value0.035) (table 2).

Table 2 multiple regression output of compassion fatigue among nurses that work in oncology unit in selected hospitals in Ethiopia, 2020 (N=230).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	37.878	6.487		5.839	.000
	Sex of respondent	.760	.941	.046	.808	.420
	Educational status	-3.657	1.372	-.153	-2.665	.008
	Marital status of respondent	.271	.862	.021	.315	.753
	Work area of respondent	-.004	.206	-.001	-.022	.983
	Position in unit	1.237	1.575	.046	.785	.433
	Duty shift	-.638	.482	-.078	-1.325	.187
	Work over load	2.877	1.148	.153	2.506	.013
	Age	-.320	.819	-.028	-.391	.696
	Income	1.938	.924	.136	2.098	.037
	Significant support	-1.752	.601	-.180	-2.913	.004
	Family support	-1.549	.753	-.136	-2.057	.041
	Friend support	2.381	.772	.188	3.082	.002
	Total service	1.048	.743	.105	1.410	.160
	Oncology service	1.181	.801	.104	1.476	.142
	Extraversion	-.896	.898	-.057	-.997	.320
	Agreeableness	-1.158	1.139	-.064	-1.017	.310
	Consciousness	-2.669	1.179	-.161	-2.265	.025
	Neurotism	2.263	.962	.142	2.352	.020
	Openness	-2.386	1.126	-.146	2.118	.035

a. Dependent Variable: compassion fatigue

Discussion

This study revealed that 9 out of ten nurses had moderate to high level of compassion fatigue

Educational status, work over load, income, significant support, family support, friend support, Consciousness, neuroticism and openness were the factors associated with compassion fatigue of nurses

The study revealed work over load is positively associated with compassion fatigue of nurses, as work overload increase by one unite compassion fatigue also increased by This similar with a study done in Canada(59).

The study showed when significant other support (colleague and supervisor) increase by one unit compassion fatigue decrease. This is supported by similar with a study done Jordanian nurses and in United Kingdom(60, 61).This study showed, as neuroticism increase by one unit compassion fatigue increase by 2.3 (t-2.352,p-value 0.020). The finding is with a study done in china, neurotic nurses may have a greater inability to control their emotions when faced with negative events, putting them at higher risks of compassion fatigue(62).

Family support is negatively associated to compassion fatigue. This similar with a study done in Jordanian nurses and in United Kingdom (60, 61).Conscientiousness is negatively associated with compassion fatigue, when Conscientiousness increase by one unites compassion fatigue decrease. This might be due to conscientiousness nurses are prudent, hardworking and set high standards for themselves.

Compassion fatigue is negatively associated with openness of nurses, as openness in the nurse's increase by one unit compassion fatigue decrease). The study is similar with a study done in china, openness promotes smooth relationship, open nurses may engage in more activities that enhance their satisfaction with caring work(63).

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5.3. Limitations of the Study

The research results were limited to only quantitative methods, which may not have fully explored the complex personal experiences associated with compassion fatigue.

6. Conclusion and Recommendations

6.1. Conclusions

The average compassion fatigue score among all study participants was 35.8 (SD = 7.78). Ninety per cent of the nurses had moderate to high level of compassion fatigue Educational status, work over load, income, significant support, family support, friend support, Consciousness, neuroticism and openness were factors significantly associated with compassion fatigue of nurses

6.2. Recommendations

The FMOH should increase human resource of nurses working on the oncology unit in addition by training nurses in oncology.

The nurses should have to develop smooth relationship with co-workers so that they can able to give compassionate care for patients and Hospitals should arrange colleague and supervisor support and Increase educational level of nurses

Researchers better to do a qualitative research to understand the extent and depth of compassionate fatigue in oncology nurses

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Annexes

Annex I: English Version Questionnaire

Dear respondents:-

This questionnaire was designed to preparing a thesis titled of "Prevalence of Compassion fatigue and its associated factors" among nurses working cancer centres of Ethiopia. The outcome of the study will be used in order to suggest possible solutions for problems identified while conducting the study. I kindly request you to spent your precious time to fill the questionnaire as frank as and reasonable as possible. I inform you that, the information you provide will be consumed for research purpose only. The information you provide will also be kept confidential. Therefore, you all not expected to write your name. Thank you for your cooperation!

Signature ----------

Section 1: Demographic and work related questions

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

Question	Response
1. How old are you?	----------(age in years)
2. What is your sex?	1/male 2/female
3. What is your educational qualification	1/ Diploma 2/Degree 3/master 4/other(specify)
4. What is your marital status	1/ single 2/ Married 3/divorced 4/widowed
5. Area of work department	1/Paediatric Oncologyward 2/Paediatric Oncology Opd (day care) 3/ Adult oncology ward 4/ Adult oncology Opd (day care)5/Haematology unit 6/Palliative care unit 7/x-ray unit 8/Gynaecology ward 9/ Other (specify)
6. Years of clinical nursing service	1/Total----------2/in oncology unit----------

7. Position in the unit	1/head nurse 2/staff nurse
8. Duty shift	1/day shift 2/night shift 3/alternative shift
9. Work overload	1/Yes 2/No
10. Monthly income in Birr	

Section 2: Personality scale questions

TEN-ITEM PERSONALITY INVENTORY-(TIPI)

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

I see myself as some who…	1	2	3	4	5
1. … is revered					
2. Is generally trusting					
3. … tends to be lazy					
4. …is relaxed, handles stress well					
5. …has few artistic interests					
6. ….is outgoing, sociable					
7. …tends to find fault with others					
8. .. does a thorough job					
9. … gets nervous easily					
10. … has an active imagination					

Section 3: Table social support scale

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 really 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 really 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.							

Section 4: PROFESSIONAL QUALITY OF LIFE SCALE (PROQOL) INSTRUMENT

COMPASSION SATISFACTION AND COMPASSION FATIGUE (PROQOL) VERSION 5

When you *[help]* people you have direct contact with their lives. As you may have found, your compassion for those you *[help]* can affect you in positive and negative

ways. Below are some questions about your experiences, both positive and negative, as a *[helper]*. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the *last 30 days*.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

I frequently experienced :	1	2	3	4	5
1. I am happy.					
2. I am preoccupied with more than one person I *[help]*.					
3. I get satisfaction from being able to *[help]* people.					
4. I feel connected to others.					
5. I jump or am startled by unexpected sounds.					
6. I feel invigorated after working with those I*[help]*.					
7. I find it difficult to separate my personal life from my life as a *[helper]*					
8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I [help]					
9. I think that I might have been affected by the traumatic stress of those I *[help]*					
10. I feel trapped by my job as a *[helper]*.					
11. Because of my *[helping]*, I have felt "on edge" about various things.					
12. I like my work as a *[helper]*.					
13. I feel depressed because of the traumatic experiences of the people I *[help]*.					
14. I feel as though I am experiencing the trauma of someone I have *[helped]*.					
15. I have beliefs that sustain me.					
16. I am pleased with how I am able to keep up with *[helping]* techniques and protocols.					
17. I am the person I always wanted to be.					
18. My work makes me feel satisfied.					
19. I feel worn out because of my work as a *[helper]*.					

20. I have happy thoughts and feelings about those I *[help]* and how I could help them.					
21. I feel overwhelmed because my case [work] load seems endless.					
22. I believe I can make a difference through my work.					
23. I avoid certain activities or situations because they remind me of frightening experiences of the people I *[help]*.					
24. I am proud of what I can do to *[help]*.					
25. As a result of my *[helping]*, I have intrusive, frightening thoughts.					
26. I feel "bogged down" by the system.					
27. I have thoughts that I am a "success" as a *[helper]*.					
28. I can't recall important parts of my work with trauma victims.					
29. I am a very caring person.					
30. I am happy that I chose to do this work.					

© B. HudnallStamm, 2009. Professional Quality of Life; Compassion Satisfaction, Burnout and Fatigue Version 5 (ProQOL). /www.isu. edu/~bhstamm or www. Prqol.org. This test may be freely copied as long as (a) author is credited, (b) no changes are made, and (c) it is not sold.

Annexes II. Information sheet (English Version)

Hello dear? Dear respondent my name is _____I am here to collect data for a study entitled, "prevalence and its associated factors of compassion fatigue among nurses in Ethiopia" The study is being conducted by Almaz mirutse who is MSC Oncology nursing student at Addis Ababa University, College of health sciences, school of nursing and midwifery. For this study you are selected as a participant and before getting your consent or permission of your participation, you need to know all necessary information related to the study.

Thus, this information will be detailed as the objective of the study is to assess the "prevalence and its associated factors of compassion fatigue among nurses in Ethiopia"You are being asked to take part in this study and to respond sincerely. This questionnaire focuses on assessing your prevalence and their association's factors of compassion fatigue. Your cooperation and willingness is greatly helpful in identifying problems in the mentioned area. This questionnaire may take 30 to 40 minutes to complete.

There is no major risk for participating in this study. Your name will not be written in this form and for all the information you give us will be kept confidentially. Your participation is voluntary and if you feel discomfort with any of the questions it is your right to drop or stop filling the questionnaire, if you have questions regarding the study or if you wish to know the result after its completion, its pleasure to give you our phone number. Please contact the principal investigator

Sister, Almaz MirutseTell no -0914746000

Email: almazmirutse1969@gmail.com

Are you willing to participate in this study?

If yes please proceed to consent form. Thank

Annex III. Consent form (English Version)

In signing this document I am giving my consent to participate in the study entitled,"prevalence and its associated factors of compassion fatigue among nurses in Ethiopia"I have been informed that the objective of this study is to assess prevalence and its associated factors of compassion fatigue among nurses working cancer centres of selected hospitals in Ethiopia. I have understood that participation in this study is completely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any by any means. I understood that participation in this study doesn't involve risks except the time spent for completing the questionnaire.

I understand that Sister Almaz is the contact person and if I have questions about the study or about my rights as a study participant the following is the contact address.

Address of principal investigator: Almaz Mirutse

Mobile no: 0914746000

Email: almazmirutse1969@gmail.com

Participants signature: _____ date: _____

Thank you for your willingness to participate!!

ANNEX IV APPROVAL SHEET

ABABA UNIVERSITY

COLLEGE HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

I, the undersigned MSc student, declare that I have submitted my original research proposal on a title "prevalence and its associated factors of compassion fatigue among nurses in Ethiopia" for the examination.

Submitted by:

Almaz mirutse_____ , _____

Name of student Signature Date

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

Approved by:

1. Zuriyash Mengistu _____ _____

Name of Advisor Signature Date

2.Ketema Buzuwork_____

Name of Co-Advisor Signature Date