ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF EMERGENCY MEDICINE AND CRITICAL CARE

BURNOUT AND ASSOCIATED FACTORS AMONG NURSES WORKING IN INTENSIVE CARE UNIT OF SELSCTED PUBLIC HOSPITALS OF ADDIS ABABA, ETHIOPIA, 2023

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A RESRARCH THESIS TO BE SUBMITED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, DEPARTMENT OF EMERGENCY MEDICINE AND CRITICAL CARE, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR MASTER OF SCIENCE DEGREE IN EMERGENCY MEDCINE AND CRITICAL CARE NURSING.

JUNE 2023

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BURNOUT AND ASSOCIATED FACTORS AMONG NURSES WORKING IN INTENSIVE CARE UNITS OF SELECTED PUBLIC HOSPITALS OF ADDIS ABABA, ETHIOPIA, 2023.

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Acronym And Abbreviation

AOR –----------adjusted odds ratio.

COR –---------- Crued odds ratio

CI ----------Confidence interval

EE –----------Emotional Exhaustion

ICU –----------Intensive care unit

MBIHSS ----------Maslach burnout inventory human service survey

OR –----------Operational research

PA –----------Personal accomplishment

SD –----------Standard deviation

SPMMC –----------St. Paul millennium medical collage

TASH –----------Tikur Anbessa Specialized hospital

TBGH –----------Tirunesh Beijing general hospital

Abstract

Introduction: Nurse burnout is a public health problem, with global prevalence estimates ranging from 15-60%. Intensive care unit nurses are exposed to much pressure from varying stressors in their environment. It is important to gain a greater understanding of burnout, since it may lead to poor patient care, poor communication with relatives, and high staff turnover. Despite this fact, there is a scarce of literature in developing countries, including Ethiopia.

Objective: The objective of the study is to asses burnout and associated factors among nurses working in the intensive care unit of selected public hospitals in Addis Aaba, Ethiopia, 2023.

Method: Institutional-based mixed methods were employed. All nurses who fillfiled the inclusion criteria and worked in the Intensive Care Unit of selected public hospitals were included in the study. The quantitative data was collected at randomly selected public hospitals and entered in to Epi data version 4.6, and analyzed using SPSS version 26.0. the qualitative data were collected by using in-depth nterviews and thematic analysis done manually to supplimet the quantitative results.

Result: The mean age the respondents was 29.66±5.2 years. More than half 118(56.2%) of the study participants had worked in Intensive care unit for less than 2 years. The greater part 198(94.3%) of the study participants reported they had work overload in their working unit. 49 (23.3%) of the participants were found to have burnout syndrome. Among those, 33(15.7%) had high emotional exhaustion, 116(56.2%) experienced depersonalization and 56(26.7 %) of them had low personal achievements. Marital status(AOR 2.23; 95% CI, 1.03-4.80) and perceived quality of life(AOR, 3.34; 95% CI, 1.09-10.24) were independatly associated with burnout.

Conclusion: Approximately one-quarter of Intensive care unit nurses have experienced burnout syndrome. The intention to leave Intensive care unit is also high. Marital status and perceived quality of life were found to be independently associated with the level of burnout. It is crucial to invest in burnout prevention actions and health promotion in critical care context.

Keywords: Burnout, Nurse, Intensive care unit, Addis Ababa, Ethiopia.

Table of content

List of Tables

List of Figures

Introduction

1.1 Background

Nurse burnout is a public health problem, with global prevalence estimates ranging from 15-60%(1). A person can experience burnout at low, moderate, or high levels as a result of chronic stress, depersonalization, and emotional exhaustion(2).

An intensive care unit(ICU) is a highly specified and advanced area of a hospital, which is devoted to the management of critically sick patients, injuries and complications(3). ICU nurses are exposed to have much pressure from varying stressors in their environment. As a result of the suffering and death of patients, work overload, complex actions, a lack of human and material resources, performing high-risk operations, excessive sound, a closed environment, and artificial lighting, among others, workers in these unit's experience stress and fatigue (4).

Professional activities directly related to patients have been associated with burnout. Therefore, professionals such as nurses who work at the bedside are at a higher risk(5). There are different types of professional burnout, including emotional exhaustion, and depersonalization. And diminished self-esteem(6).

Aside from its adverse effects on healthcare professionals, burnout also negatively affects clinical outcomes. Since nurses are required to deal with intense interpersonal relationships within dynamic and overloaded environments (patient care, management, research, education, and political participation), they are especially suscptible to work-related mental disorders(7,8).

The prevalence of burnout in intensive care nurses is a real concern and problem for the health care organizations. Several studies around the globe had been carried out and reveled the high rate of burnout among nurses working in hospitals. has been reported in Western countries that intensive care unit (ICU) nurses suffer from high level of burnout (33–70%) (4,9,10).

Different studies identify that burnout is associated with a variety of factors. This includes socio-demographic factors such as gender, age, marital status, having children, and working experience, organizational factors associated with burnout include low remunerations, work overload, unsupportive peers and lack of control, practice setting, and career satisfaction. Nevertheless, factors influencing burnout in nurses can differ between settings and nations(11–13).

1.2 Statement of the problem

In healthcare, nurses are the frontline professionals; they spend a great deal of time with patients and are consatnlty exposed to emotional strain(14). ICU Nurses provide care in stressful environment that can lead to burnout syndrome. Stress occurs when is a disparity between the resources and the demands of the individual(6).

Since the intensive care unit involves a high stake in the decision-making process, clashes over goals of care, and loss of management autonomy due to increasing protocol use, Burnout level is expected to be higher in intensive care environments(15,16). The magnitude of burnout among intensive care unit nurses is high. The study conducted in Western countries shows the magnitude of burnout ranges from 33% to 70%(17,18). Professional burnout in Asian intensive care unit nurses rivaled 50.3% of ICU nurses who experienced burnout (9).

Nurses who are prone to burnout syndrome are demotivated at work, do their tasks under their capacity, are absent regularly, leave early and resign. consequently, it negatively affects the quality of care provided to patients. This in turn creates professional dissatisfaction, which can compromise patient safety(19).

Regardless of existence of several studies gathered regarding burnout in high-income countries, parts of Africa, and Asia, there is little research conducted on this issue of interest specifically the intensive care unit in Ethiopia. Therefore, this study is aimed to assess the magnitude of burnout and its associated factors among nurses working in selected public hospitals in Addis Ababa, Ethiopia.

1.3. significance of the study

It is important to have a greater understanding of burnout, since it may lead to poor patient care, poor communication with relatives, and high staff turnover(20). The finding of the study would help us to know the magnitude of burnout and to identify the associated factors among intensive care nurses working in selected public hospitals. It could also help institutions and policymakers to recognize factors related to burnout in ICU nurses and make them to take corrective measures. Moreover, the finding would be used as a reference for other researchs who will have an interst in the area for further investigation.

2. Litrature review

2.1 Magnitude and Characteristics of Burnout

A multinational cross-sectional survey conducted in 156 Asian intensive care units reported that the prevalence of burnout among nurses was 52%. According to the study, burnout rates ranged from from 34.6% in Bangladesh to 61.5% in Hong Kong(9).

The cross-sectional population based study conducted in 17 public Brazilian ICUs rivaled that the prevalence of professional burnout syndrome was 0.41%. separating the results by the syndrome defining dimension, 28.9% of the respondents experienced high emotional exhaustion, 6.3% and experienced high level depersonalization, and very low personal accomplishment (10.9%). majority (59.4%) of the participants were primarily female and half (50.4%) lived with a partner. In addition, 45.6% of the nurses worked in general and 37.6% in infants. More than three-fourths (85.2%) of the nurses had a BSc degree. Alchol consumption was observed in 20.5%of the nurses. Only 16% of the nurses exercised regularly(21).

The Oslo University Hospital ICUs showed that most of the study participants were female (84%). The mean number of years working in the ICU was 8.8. the number of staff respondents from 11 bed general ICU was76(52%), from the six bed medical ICU was , 39(27%). And from the three bed coronary care unit was 30(21%). The mean burnout level among nurses was 2.3 (20).

A study conducted at the University Hospital of Geneva, Switzerland, showed (28%) of study participants showed a high level of burnout. Most of them 59(61%) of the participants were females, 66(68%) of them were married and more than half 50(52%) of the participants had no children(22).

A multi ceneter croos sectional study in intensive care units of seven Tunisian university hospital reported that the average age of respondents was 40.2 ± 9.38 years, with female predominance. Maslach scale revealed that 94.71% of the participants had burnout. The mean emotional exhaustion score, depersonalization score, and professional achievement score were 28.65 ± 11.92; 8.62 ± 6.65, and 34.58 ± 8.07 respectively. High to moderate burn-out levels were found in 13.3% and 26.2% of cases respectively. Burn-out effects were dominated by additive behaviors (52.65%) and suicidal ideations (4.59%)(23).

A cross-sectional study conducted in Egypt ICU reviled that the mean age of the study participants was 29.47±5.49 years (range: 17–49 years). Most respondents were younger than 40 years (96.1%), female (57.5%), and currently married (58.3%). Study participants reported that their working hours ranged from 12 to 84 h, with a mean of 60.48 (SD: 20.3), and night shifts ranged from 0 to 12 per month, with a mean of 7.13 (SD: 4.12). The experience period ranged from 1 to 25 years, with a mean of 6.28 (SD: 5.46). Most of them could choose their days off, were not satisfied with resources, had conflicts with a department head, experienced sleep deprivation, and felt unappreciated but did not have any conflicts with their colleagues and patients or their relatives. More than two-thirds of the study participants (68.2%) experienced burnout(24).

A study conducted in eastern Ethiopia showed that 222(53.9%) were females and almost half198 (48.1%) of them were between the age of 20-29. And more than half of the the participants were married. Majority of them were BSc hollders. Regarding work experiance, about one third 135(32.8%) of nurses had less than 3 years of experiances and more than half 222(53.9%) of participants had monthly income > or =to 5295 Ethiopian birr. About 228(53.3%) of participants had perceived their current health status as fair , 204(49.5%) and 146(3 of them had experienced backache and headache. Concerning the working shift. 148(35.9%) were on duty and 147(35.7%) were on night duty. More than half of them pereceived their work as fair. 183(44.4%) of the study participants experienced burnout.

2.2 Factors Associated with Burnout

2.2.1 Individual factors

The literature has shown that demographic characteristics and individual characterstics combined with job characterstics, job satisfaction, and work family interactions contribute to nurse burnout(25).

A study conducted in 16 countries ICUs reviled factors related to burnout among nurses, religiosity and better work life balance were associated with decreased burnout while having a bachelor degree was associated with increased burnout. A higher educational status among ICU nurses was also associated with burnout syndrome, (9).

The study done in Brazil , France, and Ethiopia has shown that individual characteristics such as Age greater than 35, being Male, poor current health status [AOR:4.8,95%CI:(1.1-21.4)]and fair

current health status [AOR:12,95%CI(4.5-32)][AOR:12, 95% CI:(4.5– 32)] associated with Nurses burn out (4,17,26). And marital status [AOR: 2.3, 95% CI: (1.2-4.3)] associated with nurses burnout(4, 17, 26).

2.2.2 Work-related factors:

Burnout is particularly prevalent among nurses due to the stressful nature of the work, which is detrimental to their mental and physical health(27).

In a study conducted in the University Hospital of Geneva, Switzerland, the study participants reported several concerns, and that they felt uncomfortable and felt pain. There was a discrepancy between the factors felt to be important by them and those statistically related to burnout. Among the reported concerns, only the lack of patient cooperation, the organization of the service, and the rapid patient turnover were independently associated with a high level of burnout (22).

The study conducted in 16 countries' ICUs, a thematic analysis of the free text comments converged on six common themes, with high work demand and poor work-life balance being the predominant themes. Lexical analysis revealed a predominance of terms related to workload(9)

The study done in France reported that workload, and end-of-life related factors, such as caring for a dying patient (OR, 1.39; CI, 1.04–1.85; p 0.02), and several decisions to for ego life-sustaining treatments in the last week (OR, 1.14; CI, 1.01–1.29; p 0.04) were identified as a factor associated with burnout(17).

A literature review conducted by S. Collins et al reported that multiple exposures to traumatic events, such as death, suicide, aggression, and suffering, were reported to result in post traumatic stress syndrome (PTSD) and burnout in nurses(28). Another study conducted in Ethiopia showed working greaterthan eight hours/day [AOR:0.52, 95%CI: (0.29-0.92)] was associated with Nurses burnout(26)

2.2.3 Organizational & managerial factors:

Many studies have demonstrated that organizational and managerial factors influence employees' well-being, including human resources and materials, policies and procedures, organizational culture, and rewards. Burnout is also likely to occur when an organization/management/supervisor has high expectaions of their employes but gives less in return(28).

A study in France reviled that organizational factors, such as the ability to chose days off (OR, 0.69; CI, 0.52–0.91; p 0.009) or participation in an ICU research group (OR, 0.74; CI, 0.56–0.97; p 0.03); quality of working relations (1–10 scale), such as conflicts with patients (OR, 1.96; CI, 1.16–1.30; p 0.01), relationship with head nurse (OR, 0.92/point; CI, 0.86–0.98; p 0.02) or physicians (OR, 0.81; CI, 0.74–0.87; p 0.0001) has associated with burn out(17). The study conducted in Egypt ICU among physicians and critical care nurses showed that being a resident and feeling unappreciated was associated with professional burnout (26).

Conceptual framework

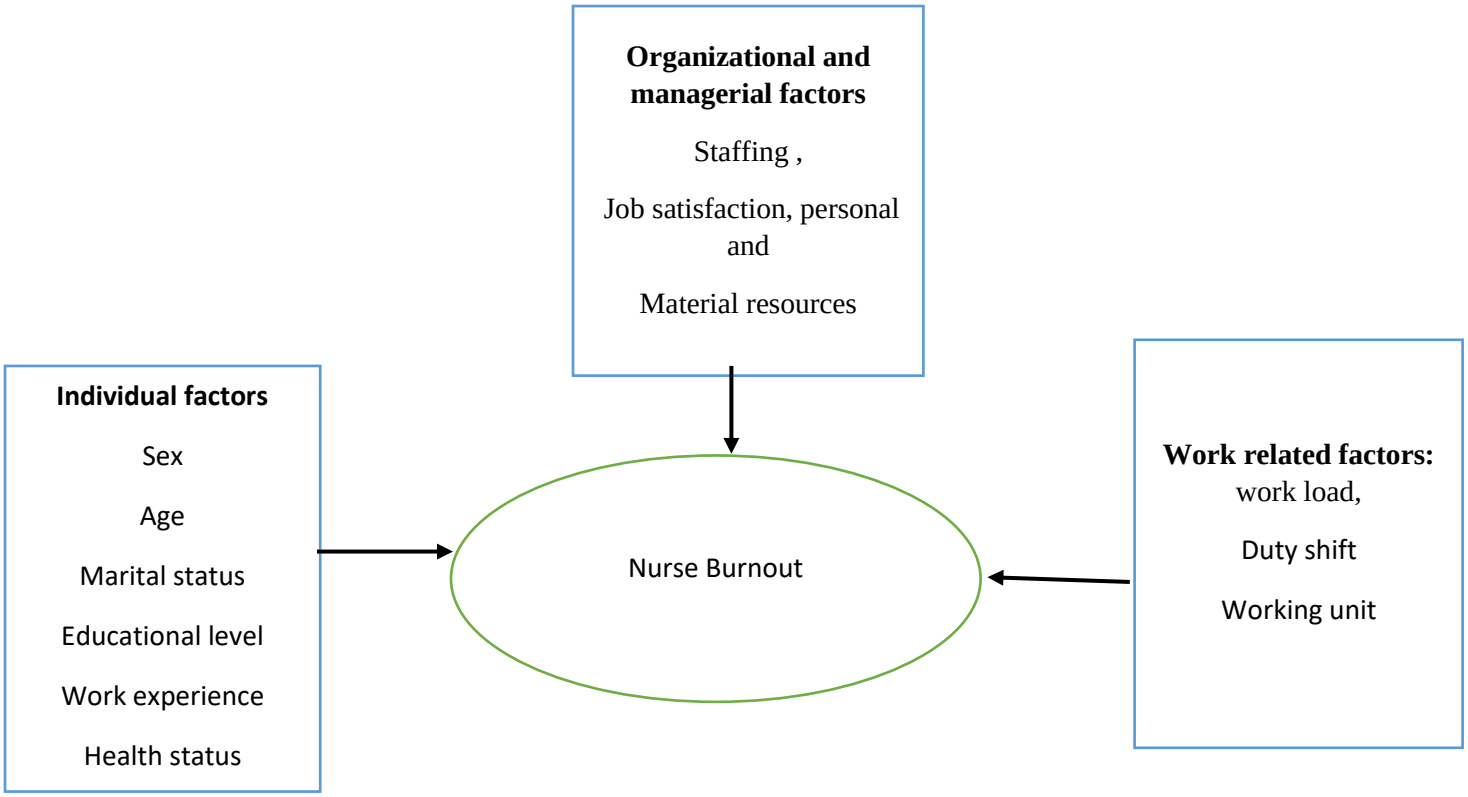

Figure 1: shows the conceptual framework of Burnout and associated factors among nurses working in intensive care unit of selected public hospitals of Addis Ababa, ethiopia, 2023.[(source,14)].

3. Objective

3.1 General objective

To asses burnout and associated factors among nurses working in intensive care units of selected public hospitals in Addis Ababa Ethiopia, 2023.

3.2 Specific objective

- To asess the magnitude of burnout among nurses working in intensive care units at selected public hospitals
- To identify factors associated with burnout among nurses working in intensive care units at selected public hospitals.

4. Methods

4.1 Study setting and period

The study was conducted in Addis Ababa, which is the capital city of Ethiopia, the city has 34, private hospitals and 13 public hospitals, (9). The study was conducted in randomly selected six intensive care units of selected public hospitals. These are

Tikur Anbessa specialized hospital(TASH), is the largest referral hospital in the country boasting a capacity of 700 beds. TASH has two ICUs one for pediatrics and the other for for medical and surgical. The ICU has total of 12 beds, with eight functional mechanical ventilators. On average 75 patients are admitted per month, the critical care service at TASH are provided by 52 nurses 7 Anesthesiologits, 1 pulmonologist, 7 internist and, 5 neurosurgions.

ALERT comprenisve specialized hospital, is one of the oldest hospital in Ethiopia established at fist for the care and treatment of leprosy patients, later the hospital was transformed in to general hospital and research ceneter, now it is a comprensive specialized hospital and one of trauma center in Addis Ababa, giving medical services with different specialities, the hospital has 12 bed general ICU 6 fully functioning mechanical ventilator and 4 bed pediatric ICU with full mechanical ventilator. The ICU is oprated by 36 trained nurses, 3 emergency and crtical care physicians 2 Ansthesiologists, 3 pediatricians, 6 general surgeons, 2 neuro surgeons, and 3 plastic surgeons.

St. Paul hospital millennium medical college(SPMMC) is a teaching hospital affliated by Addis Ababa university and giving advanced medical service following TASH, the ICU of the hospital is one of well organized and, well equipped ICU in the country with 13 beds in the adult and 6 beds in the pediatric ICU with fully functional mechanical ventilators, 2 dialysis machine. And oprated by 63 nurses, 6 anesthesiologist, 4 internal medicine specialists and average monthly admission of 60 patients.

Tirunesh Beijing hospital(TBGH), is one of the early eastblished hospital in the city, giving medical services in several sepecialized units. The ICU of the hospital consists of 6 4 beds with fully functions mechanical ventilator, its oprated by 22 nurses, 4 internal medicine specialists, 1 Ansthesiologis, and 4general surgeons.

Yekatit 12 memorial hospital, is a medical institution under the administration of the Addis Ababa health bureau, as affliated teaching hospital of Addis Ababa university, it offers specialized

medical service such as emergency care surgery, meternity and pediatric care, internal medicine, and other departments, the hospital also provides intensive care services, with adult ICU consisting of ten beds equipped with eight funcational mechanical ventilators. On average 26 patients are admitted to this unit every month, whith the care provided by a team of 31 nurses, 8 internists, 3 Anesthesiologis, 3 emergency medicine and critical care physcians an two internists.

Menelik II comprensive specialized hospital, is one of the earliest healthcare facilities established in Ethiopia and which is administred by Addis Ababa health bureau, this hospital functions as a teaching hospital affiliated with Addis Ababa university, the hospital offers ICU services with ten beds and five fully operational mechanical ventilators. On average, around 25 patients are admitted every month, and the services are provided by three Anesthesiologit, one internist and 18 nurses.

The study was conducted from March to April 2023 among intensive care nurses.

4.2 Study Design

Institutional-based mixed explanatory sequential methods involving a cross-sectional study for the quantitative part, and in-depth intervies for the qualitative part were employed.

4.3 Source population

All nurses who where working in intensive care units of selected public hospitals in Addis Ababa, Ethiopia.

4.4 Study population

All nurses who fulfilled the inclusion criteria and who were working in the ICU of selected hospitals during the data collection period.

4.5 Eligebibillity criteria

4.5.1 Inclusion criteria

- Nurses working in intensive care units for six month or more.
- Nurses who volunteer to participate in this study during the study period.
- Nurses working more than 2 years for qualitative interview.

4.5.2 Exclusion criteria

- All nurses who were not at the work place during the data collection period(sick leave, annual leave and maternity leave).

- Nurses working less than six months in the intensive care unit(ICU)).
- Practicing nurses and nurses who were working as volunteer.

4.6 Sample size determination and procedure

All nurses working in the ICU of selected hospitals who fulfilled the inclusion criteria were taken as the sample size of the study. The study was conducted in randomly selected six intensive care units of selected hospitals, since the number of nurses is small 222 (TASH-52, St, paul-63, Alert-36, Yekatit12 -31, Minilik the II- 18 and TBGH- 22). No sample size calculttion were employed.

4.7 Sampling Techniques

Census

4.8 Measurement Variables

4.8.1 Dependent Variables

- Burnout

4.8.2 Independent Variables

- Socio-demographic
- Age
- Sex
- Marital status
- Educational level
- Experience
- Training
- Job satisfaction
- Workload
- Working unit

4.9 Operational Definitions:

Emotional exhaustion: leading indictor of burnout & defined as an inability to give any more of oneself.(Runing of all emotional resources of the individual).

Depersonalization: feeling of cynicism towards one's patients.(negative and cruel response) to those receivers of service refereed to the individual(negative view about their client).

Reduced Personal Accomplishment: Feeling that one's job is no longer rewarding (a feeling of lower capability in doing personal duties, refered to as a negative evaluation of one's work). *Masalch Jackson & Leiter, 1967

- Emotional exhaustion: low (<16), moderate (17-26), high(≥27).
- Depersonalization: low (<6), moderate (7-12), high(≥13) .
- Personal accomplishment : low(<31), moderate(32-38), high(≥39).

Magnitude: A nurse is considered to have experienced burnout if they scored high in emotional exhaustion or depersonalization but low in personal achievments.

4.10 Data Collection Tools

To asses the magnitude of burnout among intensive care nurses and its associated factors, Maslach burnout inventery human service servey was used, which comprises 22 items wth 8 items for emotional exhaustion (EE), 5 items for depersonalization (DP), and 9 items for personal accomplishment(PA) (15).

Each item was asnswered on a 7 – point ranaging from never(=0) to daily (=6) the MBI-HSS is a self administered questionnaire, which is reliable and valid. To obtain socio-demographic data relevant to the study participant was also asked to provide information about their age, gender, marital status, educational level, area of work, service years of experience, duration in the ICU, work over load, health status, health problems, job satisfaction and intention to leave work within the next 12 months. The questionnaire was pretested before the actual data collection period on 5% of nurses at Zewditu hospital, Addis Ababa, which has similar charcheterstics to the study population to ensure the clarity of the questionnaire, to check the wording, and to confirm the logical sequence of the question. Data collectors were 4 BSc nurses and supervisors were 2 MSc nurses, training was given for both data collectors and supervisors for 2 days by principal investigator. In-depth interview guidelines were used for the qualitative study, the interview was recorded using tape recorder in Amharic language.

4.11 Data Quality Control

The data was collected using MBI-HSS questionarie for the quantitative part and interview was tape recorded for the qualitative data collection, data collectors and supervisors were supervised by the principal investigator, the data was checked for compeletness by supervisors every day,

incomplete questionare was excluded from analysis. to check the wording, and to confirm the logical sequence of the question. After necessary modification, a correction was done to standardize and ensure its reliability and validity of additional adjustments were made based on the results of the pretest.

4.12 Data Entry And Analysis procedure

The collected data was entered with epi-data version 4.6 and analyzed with SPSS version 26.0 software. Participants charachterstics were examined using frequency, percentage distribution mean, and standered deviation. The bianary logstic regression analysis was conducted and all independent variables with a p-value less than 0.25 were included in a multivariable logstic regression model to identify factors associated with burnout. The level of association and statistical significance was set at p-val ue <0.05. the qualitative data was tape recorded in Amharic, and translated to English then transcribed in to word, the analysis was done manually by grouping it into thems. The results was presented in narratives and triangulated with the quantitave results.

4.13 Ethical Consideration

The Ethical clearance was obtained from the Addis Ababa university collage of health sciences, department of emergency medicine and critical care nursing and, Addis Ababa public health and emergency management directorate. The research purpose, its benefit, and the procedure were explained to each potential respondent. The respondents signed an informed written and oral consent and any respondent seeking further calarification was assisted. The respondents name and ID was not required to be written, The information that the respondents provided during the study was kept confidential, and only accesed by the principal investigator and the research team.

4.14 Dissemination Of The Results

The results of the study was submitted to Addis Ababa university, collage of health science department of Emergency Medcine And Critical Care Nursing. The copies of the result was also given to the federal ministry of health, and Addis Ababa public health and emergency managmnet directorate, and hospital management, so they can use the programs, attempt to present in different workshops, and publish my work in scientific jouranls was made.

5. Result

5.1 Sociodemographic characteristics

A total of 210 ICU nurses participated in this study with a response rate of 94.6%. the mean age of the respondent was 29.66±5.2 years. More than half 118(56.2%) of the study participants had worked in ICU for less than 2 years. More than two-thirds 134(63.8%) of nurses experienced backache and more than half of 121(57.6%) of the participants took analgesics secondary to work-related health problems (Table 1).

Table 1: socio demographic charachterstics of, burn out and associated factors among nurses working in ICU of selected public hospitals in Addis Ababa, Ethiopia 2023,(n=210).

Variables		**Frequency (N)**	**Percentage (%)**
Sex	Male	81	38.6
	Female	129	61.4
Age (years)	20-29	131	62.4
	30-39	64	30.5
	>40	15	7.1
Marital Status	Single	129	61.4
	Married	81	38.6
Having children	Yes	66	31.4
	No	144	68.6
Total experience	1-5 years	120	57.1
	6-10 years	69	32.9
	>10 years	21	10.0
ICU experience	< 2 years	118	56.2
	2-5 years	81	38.6
	5-10 years	11	5.2
Salary (Birr)	< 8107	157	74.8
	≥ 8107	53	25.2
Health Perception	Poor	32	15.2
	Fair	60	28.6
	Good	118	56.2
Health problems	Headache	101	48.1
	Backache	134	63.8
	Insomnia	61	29.0
	Hypertension	10	4.8
	Depression	47	22.4
Medication related to work	Anxiolytics/sleeping pills	5	2.4
	Analgesic	121	57.6
	Non-pharmacologic (physical exercise)	84	40.0

5.2 Work-related characteristics

More than half 109(51.9%) of the study participants had worked more than 16 hours per day and only 43(20%) of nurses worked 8 hours per day. Nearly two-thirds133 (63.3%) of the respondents had the plan to leave their current working unit in the next twelve months.

5.3 Organizational & managerial factors

The greater part 198(94.3%) of the study participants reported they had work overload in their working unit. Nearly half 104(49.5%) of the respondents were fairly satisfied with their work whereas more than one-third 81(38.6%) of them were unsatisfied with their work. Concerning the quality of life, nearly half 97(46.2%) of the participants perceived their life as fair while more than one-fourth 64(30.5%) of them perceived it as poor.

Magnitude of burnout

Of the 210 ICU nurses who participated in the study, 49 (23.3%) of them were found to have burnout syndrome(Figure 2). from those 37(17.6%) had high emotional exhaustion, 125(59.5%) experienced depersonalization and 67(31.9 %) of them had low personal achievements(Table 2).

Table 2: Description of MBI-HSS sub-scales of nurses' burnout at selected public hospitals in Addis Ababa, Ethiopia. 2023, (n = 210).

Sub-scales		Frequency (N)	Percentage (%)
Emotional Exhaustion	High	37	17.6
	Modrate	44	21.0
	Low	129	61.4
Depersonalization	High	125	59.5
	Modrate	50	23.8
	Low	35	16.7
Personal achievement	High	96	45.7
	Modrate	47	22.4
	Low	67	31.9

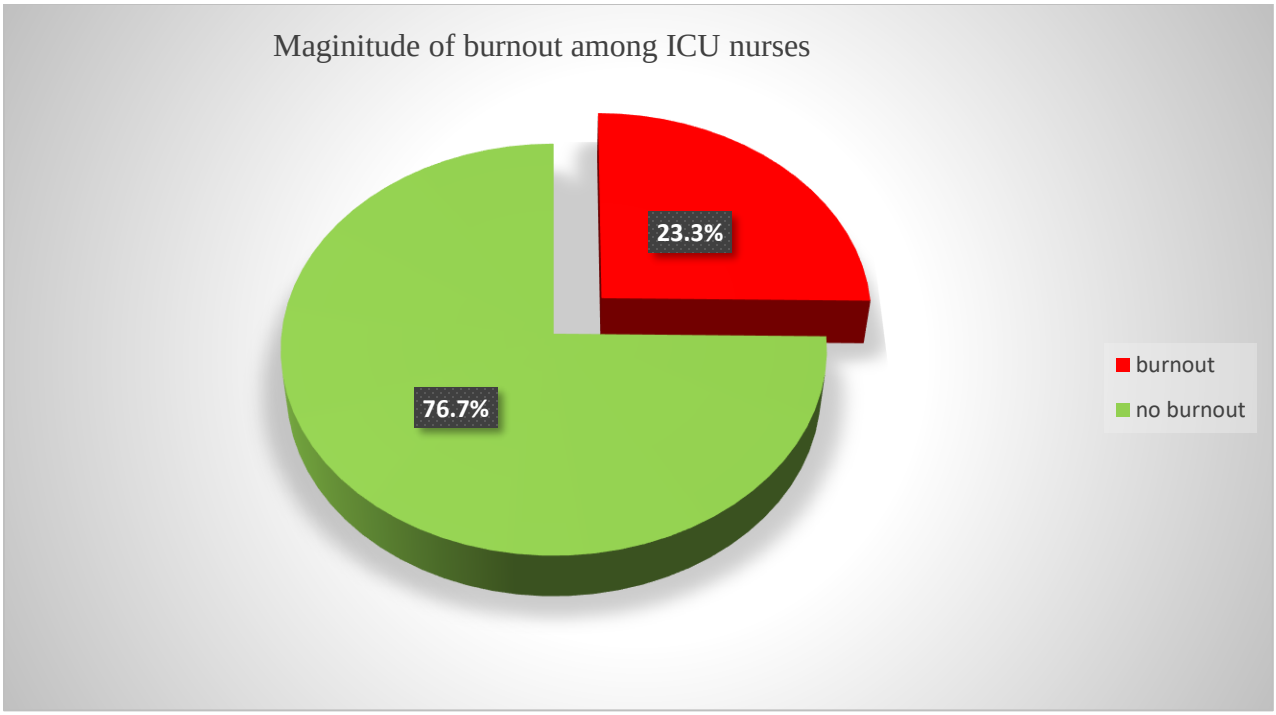

Figure 2: The magnitude of burnout among ICU nurses who were working at selected public hospitals in Addis Ababa, Ethiopia 2023, 46(23.6%) (n = 210).

Factors Associated with Nurses' Burnout

In multivariable regression analysis, marital status and perceived poor quality of life were independently associated with burnout. The odds of burnout for those who were married are higher by 2.23 times (AOR 2.23; 95% CI, .03-4.80) as compared to those who were single. The probability of burnout for those who had poor perception of quality of life is greater by 3.34 times (AOR, 3.34; 95% CI, 1.09-10.24) as compared to those who had a good perception of the quality of life.

Table 1: Factors associated with burnout among nurses who were working at selected public hospitals in Addis Ababa, Ethiopia, 2023, (n = 210).

Variables		Burnout		COR(95%CI)	AOR(95%CI)	P-value
		yes	No			
Sex	Male	16	65	0.71(0.36-1.41)	0.78(0.36-168)	0.535
	Female	33	96	1	1	1
Marital status	Single	25	104	1	1	1
	Married	24	57	0.57(0.29-1.39)	2.23(1.03-4.80)	0.041*
Service in ICU	<2 years	31	87	1	1	1
	2-5 years	15	66	0.68(0.32-1.27)	0.44(0.19-0.99)	0.050
	>5 years	3	8	1.05(0.26-4.22)	0.633(0.13-3.13)	0.575
Educational level	BSc degree	40	142	1	1	1
	MSc degree	9	19	1.68(0.71-4.00)	2.33(0.87-6.18)	0.090
Perceived quality of life	Poor	21	43	0.341(0.131-0.88)	3.34(1.09-10.24)	0.035*
	Fair	21	76	0.56(0.27-1.15)	0.45(0.20-1.03)	0.061
	Good	7	42	1	1	1
Job satisfaction	Poor	16	65	1.29(0.39-4.29)	0.59(0.14-2.43)	0.470
	Fair	29	75	2.03(0.64-6.42)	1.50(0.39-5.74)	0.551
	Good	4	21	1	1	1
Monthly income	<8107 birr	36	121	0.91(0.442-1.89)	0.81(0.30-2.14)	0.667
	≥8107 birr	13	40	1	1	1

NB *=P<0.05, and 1.00=refrence,

In-depth interviews were conducted with 10 intensive care nurses. The resulting empirical data was grouped into three summary discourses, which illustrate three dimension of burnout among study participants: emotional exhaustion, depersonalization and, reduced effectiveness, facilitating a better understanding of the department context in which they work.

Emotional Exhaustion: in this collective discourse, ICU nurses described the daily demands of the work as intense, hard, and producing emotional and physical exhaustion, in addition, they point

out symptoms of physical and mental illness: "*Despite my best efforts, the attendants do not feel that their family is being helped. As a result of hearing the rumors from the attendants, I became emotionally drained. I feel frustrated when I see the patient I helped die, I ask myself what is the point of working here and suffering, so ICU is exhausting both physically and emotionally. there is no job promotion, instead, they put too much pressure on us there is no recognition at all, the leaders make you hate your job and want to leave, and even if you work hard we don't even get respected, no promotion or recognition at all, I end my hope."*

Depersonalization: Throughout this d iscourse, nurses are distancing themselves from certain activities. "*My social life and family are hardly ever part of my daily routine as I am occupied with patients most of the time. Social life with patients occupies most of my time, and I feel disconnected from society. Seeing that a lot of patients have passed away, I develop a behavioral change, becoming emotionally hardened when people die even a closest one. Previously, I would not eat food after hearing someone died, because I could not get rid of the image of that person. Now, I don't give a damn about whether they lived or died, whether they survived or not, I still feel the same way".*

Reduced Effectiveness: This speech synthesis reveals that the nurses were frustrated because they felt neglected and had unrealized demands, which made them believe they could have better performance due to thier exhaustion and discouragement, which caused them reduced effectiveness. "*Inadequate staffing and insufficient resources make it impossible to provide the standard of care. There are times when you feel bad for not helping the patient. There is no way to tell if the nurse gave the medication or not. Whenever you feel burned out, you can sign it as if you were giving it to the patient without actually doing so. You may not provide the care the patient deserves. You may not position the patient, you may not check the airway maintenance, and the cardiac patient admitted for follow-up, if you are tired you may miss them, and the death rate increase".*

6. Discussion

Nurse burnout is a significant problem in healthcare facilities and can negatively impact clinical outcomes. Fortunately, burnout is not a sign of weakness, mental illness, or an inability to cope with life: it is treatable, reversible, and preventable(7,24). Therefore this study aimed to assess the magnitude of burnout and its associated factors among nurses working in selected public hospitals in Addis Ababa, Ethiopia.

The magnitude of burnout among 210 ICU nurses who were working in selected public hospitals of Addis Ababa was 23.3%. this finding is in line with the study conducted in Tunisia and Switzerland ICU nurses(22,23). Our findings are lower than the study conducted in 152 Asia ICUs which showed 52% burnout level and the study conducted in Egyptian ICU which is 62% of the nurses experienced burnout(9,24). The discrepancy in burnout might be attributed to the difference in sociodemographic status, in our study majority of ICU nurses were aged below 30 and most of them had an experience of less than 2 years.

Nurses in ICU often suffer from low back pain . More than two-thirds (63.8%) of nurses reported experiencing backaches during this study. Likewise, Over the last year, studies have shown that 34.5% to 100% of ICU nurses worldwide experienced lower back pain(30). The reason for this may be the physical demands of nurses working in critical care units, which include long periods of standing for hours as well as heavy workloads.

A person experiencing emotional exhaustion feels psychologically spent and drained after experiencing accumulated stress, either personally or professionally. In this study, Nearly one-fifth (17.6%) of the respondents experienced High emotional exhaustion. However, this result has not previously been described by the study conducted in Egypt, Turkey, and Eastern Ethiopia which showed higher (44-68%) emotional exhaustion among nurses(24,26,31). This difference might be related to the difference in work and the amount of workload and the level of support from colleagues and supervisors.

Despite the fact Nursing turnover resulted in a decreased level of care, an increase in medical errors, and operating costs. In the present study, two-thirds (63.3%) of the respondents had a plan to leave their current working unit in the next twelve months. The findings of this study were higher compared to the study conducted in 10 European countries, Taiwan, and eastern Ethiopia

which ranges 9-53%(26,32,33). This might be attributed to high levels of patient acuity, remuneration, caring for families in crisis, and involvement in morally distressing situations.

According to this study, married ICU nurses have a 2.23 times higher chance of burnout than single ICU nurses (P-value =0.041). The results are consistent with a study conducted in eastern Ethiopia. Which found that the nurses who were married burned out 2.3 times more frequently than unmarried nurses(26). Likewise, the study conducted in Pakistan also reported that married nurses experienced higher burnout than single and divorced nurses(34). However, t he meta-analysis conducted at the University of Granada, Spain reported that being single or divorced is associated with the highest levels of of burnout in nurses(35). This might be due to the difference in socio-economic status and study setting.

Nurses' burnout and quality of life are important issues that have been highlighted in numerous studies. In this study, nurses who perceived their quality of life poorly have a 3.34 times greater chance of burnout than those who perceive it well. This is in line with the study conducted in a tertiary care hospital in Pakistan which reported a higher association between poor quality of life and burnout level(34).

Although nurses are well-qualified to develop holistic approaches and to apply creative thinking to counteract social isolation, In this study, the nurses reported that due to their work conditions, excessive workload, and moral distress, they were distancing themselves from certain social activities. Our finding is supported by the study conducted in Australia which verifies that the feeling of being time-pressured and overworked prone professionals to reduced outside activities and disengage in social activities(36).

A feeling of accomplishment and satisfaction that can come from providing high quality care to critically ill patients is a personal accomplishment for ICU nurses. This study reveals that ICU nurses were frustrated because they felt neglected and faced unrealistic demands. This led to exhaustion and discouragement, which in turn reduced their effectiveness. Similarly, the scoping review conducted in Canada showed that the ability of critical care nurses to provide effective care and services can be compromised by unaddressed workplace needs(37).

7. Conclusion

Burnout syndrome has been experienced by approximately one-quarter of ICU nurses. High emotional exhaustion has been reported by nearly one-fifth, while two-thirds have experienced depersonalization and one-third have reported low personal achievements. The intention to leave the ICU is also high among these nurses. Factors such as marital status and perceived quality of life are independently associated with burnout levels. Furthermore, frustration among ICU nurses due to neglect and unrealistic demands can lead to exhaustion, discouragement, reduced effectiveness, and distancing from certain activities.

8. Strength and limitations

8.1 Strength

- This is the fist study to determine the magnitude of burnout and associated factors among nurses working in the intensive care unit of a selected public hospital in Addis Ababa, Ethiopia.
- Its multicenter study
- Mixed explanatory sequential nature of study design.
- Found baseline information for future

8.2 Limitations

- It is impossible to establish a cause-and-effect relationship with a cross-sectional study design.
- Scarcity of literature, very limited litratures to asses the magnitude of nurses burn out and associated factors among ICU nurses in Ethiopia.

9: Recommendation

For the minster of health

- ✓ Designing a strategy to tackle burnout among nurses

For Hospitals

- ✓ Periodic screening for early detection and managemnet of burnout among ICU nurses
- ✓ mindfulness-based interventions

For ICU nurses

- ✓ Set Boundaries Between Work and Personal Life
- ✓ Care for Your Physical and Mental Health

For researcher

- ✓ Longitudinal research is recommended to address hidden variables.

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Annexes I

Subject information sheet - English

Grretings:

My name is _____I am a BSc nurse currently working at ALERT hospital i am working with Yealemsew Hailu who is a postgraduate student at Addis Ababa university, collage of health science, department of emergency medicine and critical care nursing.

The objective of the study is to asses burnout and associated factors among nurses working in the intensive care units of selected public hospitals, in Addis Ababa, Ethiopia. This will help to gain understanding on nurse professional statisfaction based on your answers to our questions you will be asked to fill out a questionnaire that will help in investigating the issue. Your co-opration is very helpful, your name will not be written on the questionnaire and all the information you provided will be kept strictly confidential. You were facing no harm by paraticipating and you are not obliged to answer any questions you don't wish to answer, to fill the questionnaire 20-25 minutes was required.

If you have any doubt you can communicate the following concerning bodies

1, Addis Ababa university, collage of health science, department of emergency medicine and crtitcal care nursing , +251929016068

2, Addis Ababa public health emergency management directorate, +251115520295

3, principal investigator – Yealemsew Hailu, phone-No- +251917128491, email-yealemsewhailu@gmail.com

Consent form

Considering the information you get from the general information sheet, we would be thankful if you spend some time with us solving questions related to the issues. Are you comfortable to participate in this study?

1, if yes, put your signature here_____

2, if no, skip to other paraticipants

Informed consent certified by

Questionnaire collector: Code_____

Name_____ Signature_____Date _____

Checked by: supervisor_____ Signature_____

Part I: personal information

Iinstruction: please circle the number in front of the option you choose.

1. sex:			1, male		2, female
2. Age in a year:		1. 20-29	2. 30-39	3. 40-49	4. ≥ 50
3, Current marital status:		1, single	2, married	3, divorced	4, widowed
4, Do you have children?			1, Yes		2, No
5, Service year			_____		
6, Service year in the ICU	1, 2 years or<	2, 3-5years	3, 6-1o years	4, 11-15 years	5, >15 years
7, current educational level		1, Dipiloma nurse		2, BSc nurse	3,MSc nurse
8, Job title		1, Cilinical nurse		2, Professional nurse	3, Head supervisor nurse
9, Avarge working hours		1,Per shift____	2, Per day_____	3, Per week_____	4, Per month_____
10, Current duty shift		1, Day		2, Night	3, Alternate
11, Do you have ICU training				1,Yes	2,No
12, Monthly income				_____	
13, Presence of work over load				1,Yes	2,No
14, How do you perceive your current health status			1, poor	2, Fair	3, good
15, How do you perceive your current quality of life			1, poor	2, fair	3, good

16, How do you perceive satisfaction with your			1, poor	2, fair	3, good
17, Do you have plans to leave your current unit in the coming 12 month				1,Yes	2, No
18, Which of the following health problems have you experienced concerning your work	1, headache	2, backache	3, depression	4, insominia	5, hypertension
19, Which of the following medications or activities do you use related to the work		1, anxiolytics slleping pills	2, analgesics	3, smoking	4, physical activity

Maslach Burnout Inventory

Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, circle the numbers that best describe youranswer. If you have had this feeling, indicate how often you feel it by writing the number (from 1-6).

How often	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

Emotional exhaustions questions		**Scales**						
		0	1	2	3	4	5	6
1	I feel emotionally drained from my work							
2	I feel used up at the end of the workday.							
3	I feel fatigued when I get up in the morning and have to face another at on the job							
4	I feel burned out of my work							
5	In my work I deal with emotional problems very calmly							
6	I worry that this job is hardening me emotionally							
7	I feel like I'm at the end of my rope							
8	I feel recipients blame me for some of their problems							
Depersonalization questions								
1	I feel I treat some recipients as if they were impersonal objects							
2	Working with people all day is really a strain for me							
3	I have become more callous towards people since oi took this job							
4	Working with people directly puts to much stress on me							
5	I don't really care what happens to some recipients							

Personal accomplishment questions								
1	I feel frustrated by my job							
2	I feel very energetic							
3	I deal very effectively with the problems of my recipients							
4	I can easily create a relaxed atmosphere with my recipients							
5	I feel exhilarated after working closely with my recipients							
6	I have accomplished many worthwhile things in this job							
7	I feel am positively influencing other people since I took this job							
8	I can easily understand how my recipients feel about things							
9	I feel am working too hard on my job							

Annex II

An in-depth interview guide-line for qualitative study part

Dear respondents (good morning/ good aftrenon)

My name is Yealemsew Hailu I am currently studying emergency medicine and critical care nursing at Addis Ababa University. The purpose of the study is to asses burnout and associated factors among nurses working in the intensive care units of selected public hospitals, in Addis Ababa, Ethiopia. Currently you are selected to participate in the deep interview to explore the underlying factors associated with burnout in the intensive care unit. You are free to talk about whatever information you think is important. There are no right or wrong answers. All comments, both positive and negative, are welcomed, in order not to miss any points of the interview, we are using a tape recorder. We would like to confirm to you that whatever information you give as would be very useful for the study and all your comments are confidential and used for research purpose only. The questions does not take more than 30 minutes.

Are you willing to participate in the discussion?

Do you have any questions?

Do you agree to participate in this study?

yes_____, no_____.

If the answer is yes, thanks! Conduct if the answer is no thanks! Transfer to the next respondent.

Record code _____,

Age in completed years_____

Education level _____,

1. How do you become an ICU Nurse?
2. What do you think of the working environment of the intensive care unit?
3. What does being an ICU nurse bring? Likea sense of accomplishment?
4. What do you think of your daily work(working time, workload, workprocess, workprassure, and resources, how do you deal with the relationship between work and life)?
5. Did you experience burnout as an ICU nurse? What caused it?
   probe
    - Do you think your current job promotion opportunities are great? What are the resons?
    - How do you manage your relationship with your colleagues and leaders
    - What do your family
    - Being an ICU nurse, when you come in to it unsatisfactory or urgent matters how do you usually solve the? (including psychological and operational)? Is it effective?
    - When you face emergencies or difficulties in the process of working in the ICU, what kind of help do you most hope for? (material assistance, spiritual assistance, legal and policy support related to working in ICU, authoriazation from the state, and government).
    - What things do you think will affect your motivation at work?

6. What did you do to reduce the feeling of burn out (psychologically and opreationally)? Is it effective?
7. Have you ever thought of quitting the position of ICU nurse? Or have you tried seeking other positions?
8. Do you have any suggestions or expectations for the working in ICU?