



Assessment Of Burnout And Associated Factors Among Health Professionals Working In
The Ed Of Selected Hospital In Addis Ababa, Ethiopia.

HOSPITAL BASED CROSS SECTIONAL STUDY.

A RESEARCH PROPOSAL SUBMITTED TO THE DEPARTMENT OF EMERGENCY
MEDICINE AND CRITICAL CARE FOR THE PARTIAL FULFILLMENT OF
SPECIALTY TRAINING

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SUMMMARY

INTRODUCTION;

Burnout is an established phenomenon across cultures and occupations .It is a psychological syndrome that involves a prolonged response to chronic emotional and interpersonal stressors on the job. It is a common problem among healthcare professionals, especially those at the frontline of care. The quality of healthcare service is strongly affected by the health professionals' levels of burnout at work. Although burnout and resilience are indicators used to assess the level of workplace hardship, there is a dearth of information in most developing countries, including Ethiopia

OBJECTIVE:

To assess the levels of burnout and associated factors among health professionals who work in the Emergency departments in selected Hospitals in Addis Ababa.

METHOD:

A cross-sectional study design was applied among health professionals employed in Emergency departments selected Hospitals in Addis Ababa. A structured self-administered English version questionnaire, consisting of validated scales to measure Burnout was used to collect the data 22 items of Maslach burnout inventory human service survey tool was employed to assess the health professionals' burnout level. Descriptive statistics like frequencies and cross tabulation was made for most selected variables. Linear logistics regression was employed for inferential statistical analysis to assess level of burn out.

CONCLUSION:

In this study from a total of 212 participants 152(71.70%) experienced high levels of burnout. the high prevalence of burnout among emergency department healthcare workers in Addis Ababa is consistent with regional and global trends in low-resource settings. Factors such as long working hours and poor social support are key contributors to burnout.

RECOMMENDATION:

Strong social support should be encouraged among health professionals working in the health setting for the improvement of health care services. Addressing these issues could lead to significant improvements in worker well-being and patient care

KEY WORDS; Health professionals Emergency Department, Addis Ababa Hospitals

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ABBREVIATIONS AND ACRONYMS

AABET: Addis Ababa burn emergency trauma
SPHMMC: Saint Paul millennium medical college
BLH: Black lion hospital
BO: Burn Out
BOS: Burnout Syndrome
CI: Confidence Interval
DP: Depersonalization
EE: Emotional Exhaustion
HPs: Health Professionals
HCWS: Health Care Workers
ICD: International Classification of Disease
LMIS: Low and Middle Income Countries
MBI: Maslach Burnout Inventory
SPSS: Statistical Package for Social Science
SSA: Sub Saharan Africa
USA: United States of America
WHO: World Health Organization

CHAPTER1. INTRODUCTION

1.1. Background

Burnout (BO) is a psychological syndrome resulting from a prolonged negative response to chronic work-related stressors characterized by Emotional Exhaustion(EE), Depersonalization(DP), and Low Personal Accomplishment(PA) that can occur among individuals who work with people in some capacity for a prolonged time without having adequate time physical or emotional recovery (1)(1–4)

In the early 1970s, Freudenberg was the first scholar to use the phrase BOS (5). To express a sense of failure and exhaustion (6). Until Maslach redefined burnout in 1982, the concept was perceived differently (7). As a multidimensional disorder consisting of three spectrums, namely EE, DP and Low PA (8) (9). Burn out (BO) occurs when energy turns to tiredness, involvement becomes cynicism, and efficacy turns into ineffectiveness. Prolonged exposure to high amounts of stress has negative health repercussions. (10) BO is caused by a combination of very high expectations, ongoing situational stress at work, and working with scarce Resources (11 ,12)

BO is quite prevalent in the health care sectors due to the stressful nature of health care activities, and health professionals are the most afflicted profession, suffering from chronic workplace stress. (3,13,14) Emotional exhaustion in BOS causes HP to feel consumed at the conclusion of the work day commitment with a lack of motivation to be concerned or care for the patient. (15). Depersonalization in BO manifests itself as a misguided approach in which HP consider patients like things rather than human beings (16).A perception of decreased PA includes feelings of undervaluing one's own dedication and seeing oneself as unsuccessful in treating patients. (15, 17).

There is a global shortage of HP, which is serious and unavoidable in Sub-Saharan Africa (SSA) (18). By 2013, the requirement for HPs was predicted to be roughly 17.4 million, of which nearly 2.6 million were doctors and approximately 9 million were nurses and midwives. The need for health personnel was greatest in South-East Asia (6.9 million) and Africa (4.2 million) (19).

The World Health Organization (WHO) recognized 57 low and middle income countries LMICs with a significant shortage of HCWs, 37 of which were in SSA, including Ethiopia. With only 3% of the global healthcare workforce and limited financial resources, LMICs' healthcare systems are expected to care for 24% of the world's illness burden (18). Human resource shortages have had a severe influence on health care delivery systems and service quality across Africa. As a result, the existing healthcare personnel is frequently subjected to excessive and sometimes difficult workloads, leading to burnout(20).Because of BO, health professionals who work in institutions with heavy workloads have a decreased interest in caring for patients, a desire to leave their jobs, and a lack of drive to serve to their maximum capacity. The issue was exacerbated by burnout, which resulted in brain drain, high turnover, a heavy workload, and diminished satisfaction and drive. As a result, the well-being of HP is critical in providing effective health care (18).

The high turnover of health professionals caused by BO in the face of a health professional shortage poses a major danger to the quality, accessibility, and equity of healthcare services. (18–20).Globally, the prevalence of burnout is 20-60% among

different health professionals (10, 21). The reported incidence of burnout varies across the globe (13)

In Europe, for example, there is a gap between European Union countries (10%) and non-European Union countries (17%) (13). The situation is significantly worse in SSA, where the majority (2/3) of health workers have BO as a result of EE (5,23,24). In Africa, the prevalence of BOS ranges from 36.1% to 75.5% (24-27). The SSA region had the highest rate of burnout symptom prevalence (12), whereas Europe and Central Asia had the lowest (23). The prevalence of BO among professionals in Ethiopia ranges from 13.7% to 65.2% (14,23,24).

Several factors have been found to be related to the risk of burnout in health care organisations. The factors are socio-demographic (age, gender, monthly pay, and marital status). Work-related factors (profession type, years of experience, sleep deprivation, weekly working hours, night shifts per month) (12). and physical and psychosocial factors (lack of recognition, social support, substance abuse) were significant predictors of BO (18,25). Other factors associated with burnout include travelling time to work, poor wages, too frequent night duties additional work load or inadequate support from leaders (1,18)

1.2 STATEMENT OF THE PROBLEM

Burnout is a major global health service-related hazard that is regarded as a workplace epidemic in modern society, and it is a component of occupational stress that is garnering significant attention globally (11,12,26). The World Health Organization designated burnout syndrome as "occupational phenomenon" in the 11th Revision of the International Classification of Diseases (ICD-11) (27).

According to one study, over 100,000 deaths in the health care sector occur each year as a result of errors caused by BOS among health personnel, which necessitates immediate treatment (28). The impact of BOS is not limited to patient care decline and life costs, but also to increased turnover, which costs the health sector more than 500,000 dollars. If BOS is not identified early and corrective measures are not implemented, there is an 11% increase in medical error for every one point increase in depersonalization, which is a component of BOS, resulting in an overall negative patient experience and unwillingness to seek care due to bad previous experience (28).

About 15% of work place absenteeism was caused by BO and annual cost of this syndrome has reached 1.7 billion euros (21). According to a recent study, BOS has a huge influence on the economy of hospitals and health-care institutions, costing around \$20 billion every year, resulting in a significant financial burden (28).

In the United States, around 54% of physicians and 35% of hospital nurses reported burnout. Burnout is prevalent in high-income countries at a rate ranging from 13-27% (29). Over 60% of physicians in the United States of America said they would quit their jobs if they could because of BO (5).

BO was shown to be common in low and middle income countries (LMIC), with one out of every two physicians having burnout at any given time. This may have an impact not just on one's own well-being, but also on the quality of treatment provided (13,30). BOs had a greater impact in Sub-Saharan Africa, where as many as 81% of physicians and 45.8% of nurses suffered burnout, with 31% of physicians experiencing severe burnout (29). Burnout is reported to affect 39% of Ethiopian nurses, and it affects two out of every five nurses in Ethiopia (23).

BO has a negative impact on people's personal, psychological, and physical wellbeing. Personal consequences include substance misuse, shattered relationships, and even suicide (13).

BOs in HPs have also been proven to be a major predictor of headaches and musculoskeletal discomfort (16). Psychological effects range from a loss of sleep to marital issues, anxiety, irritability, and depressive symptoms, as well as the prescription of antidepressant prescriptions by health professionals (14,16)

Ethiopia seeks to meet the World Health Organization's (WHO) 2025 benchmark for Sub-Saharan Africa, which is a ratio of 2.3 health professionals per 1,000 people, which appears to be a far-fetched ambition if the issue of burnout is not addressed (23). Moreover, the number of Ethiopian physicians to population ratio is not compatible with the WHO recommendation causing physicians to be overworked. The number of physicians in Ethiopia was estimated to be Low, according to evidence which corresponds to a physician-to-population ratio of 1:42,706, while the World Health Organization's (WHO) minimal standard was 1:1000.(5).

Many strategies have been established around the world to reduce the frequency of burnout among healthcare personnel. To meet the growing demand of the health system, the Ethiopian Federal Ministry of Health introduced incentives, rotation among frontline health professionals, and increased the number of health professional graduates, educational opportunities, rewarding staff serving for a long time, providing a private vehicle and a house for senior physicians with a mortgage loan, but the country faces major health workforce management challenges, including shortages, low motivation, and retrenching (23).

Regardless of the above mentioned efforts the issue of health professional burn out is still critical and can get solution only when the problem is given attention as a sensitive issue and shared responsibility between health care system, government and individual physicians can be maintained. Though it's sensitive agenda as a work place epidemic much is not studied in Ethiopia particularly in the post covid-19 era. Moreover, most of these studies were conducted in hospitals, and on single professionals either in physicians, nurses or others of interventions have been implemented to lower the risk (23).

There is no more data on the prevalence of burnout among health professionals, in hospitals in Addis Ababa. The purpose of this study is to assess the burnout among health professionals working in Emergency department using the Maslach Burnout Inventory (MBI), which is the most commonly used tool to self-assess the risk of burnout and the symptoms of burn-out syndrome of people who have experienced burnout(9,18,32)

1.3 SIGNIFICANCE OF THE STUDY

Burnout is one of the problems faced by Health professionals globally, as observed in both high middle and low income countries. The issue of BOS is a priority issue as vast majority of HPs are prone to it. It also contribute to the improvement of healthcare service in Sub Saharan Africa by uncovering job related factors resulting in burnout, as well as estimating the level of burnout.

Having a good estimate of the prevalence of burnout in primary health-care professionals in Emergency department is important because this information will provide the first step in identifying ways to mitigate the impact of burnout and to develop culturally and organizationally appropriate interventions.

Ethiopia has been affected by a shortage of health professionals as well as high levels of professional burnout and low levels of resilience among healthcare workers. In response to the critical shortage of human resources in the healthcare system, the Government of Ethiopia invested significant resources in the effort to increase the quantity of the healthcare workforce, utilizing a ‘flood-and-retain strategy’. This strategy involves an accelerated and voluminous increase in the number of students studying health professions. In this regard, the number of health science colleges, as well as the enrollment of health professionals into Higher institutions, has been increasing in the last 15 years (27).

Therefore, this study is aimed to examine the level of burnout among health professionals who are working at the Emergency Department in selected Hospitals in Addis Ababa, Ethiopia. The measurement will enable both the scientific realm and policymakers to understand the current level of burnout of Emergency and highlight components that should be managed to enhance the development of a more efficient healthcare system.

CHAPTER 2. LITERATURE REVIEW

2.1 PREVALENCE OF BURNOUT

Burnout syndrome has been identified as a global workplace health issue in recent years, particularly among health professionals (9,29). The reported incidence of burnout varies globally, depending on health professions, medical specialties, and geographical region. (15).

Globally, the prevalence of burnout among nurses/midwives is 15%-85%, with a higher prevalence of BO among physicians (25-70%), with differences noted between geographical locations and specializations (22).

In a study comparing burnout occurrences between US physicians and a population control, physicians had a 37.9% incidence of burnout symptoms compared to 27.8% in the control population (13). In Europe, there is a gap between European Union countries (10%) and non- European Union countries (17%). Burnout rates in European Union countries range from 4.3% in Finland to 20.6% in Slovenia, whereas it ranges from 13% in Albania to 25% in Turkey in non- EU countries. (13).

One systematic review conducted to assess burnout and provide an estimate of the prevalence of physician burnout from 182 studies involving 109,628 individuals in 45 countries found significant variability in burnout prevalence estimates ranging from 0% to 80.5%, and the overall burnout prevalence was 67%, with 72% experiencing emotional exhaustion and 63.2% experiencing low personal accomplishment (33).

A cross-national investigation study involving 53,846 nurses from six countries: the United States, Germany, Japan, the United Kingdom, Canada, and New Zealand and using the Maslach burnout inventory tool revealed that the highest level of burnout was seen among nurses in Japan and the lowest level of burnout was seen in Germany, and the findings revealed that all nurses in the six countries with Burnout provide poor care to their patients (7). Another cross-sectional investigation of 871 doctors working in five tertiary institutions in Nigeria found that the frequency of burnout is as high as 75.5% (34).

In the 2020 Medscape National Physician Burnout and Suicide Report, the incidence of burnout was ranked across 29 medical specialties. Urology (54%), neurology (50%), and nephrology are the top three medical specialties for burnout. General surgery (35%), psychiatry (35%), and orthopedics (34%), have the lowest rates of burnout) (13).

A cross-sectional study of 265 health care workers in six referral hospitals in Brazil during the Covid-19 pandemic found that nearly half of them (48.6%) had high levels of emotional weariness, and nearly one-third (29.4%) had high levels of depersonalization. Professional efficacy was found to be low in 18.1% of the sample (31).

Another descriptive cross-sectional study conducted on 730 physicians working in Northeast, Erzurum Anatolia, Turkey in 2008 to assess burnout and its associated factors found that burnout was low among physicians, as evidenced by the mean emotional exhaustion score being high in 5.3% of physicians, the mean depersonalization score being 5.4%, and the mean personal accomplishment score being low 69.9% (17).

Burnout is prevalent in the eastern area of Saudi Arabia, with significant percentages in all three subscales: Exhaustion 269 (67%), Professional Efficacy 61 (15%), and Cynicism 241 (60%). Middle Eastern research suggest a high prevalence of burnout among healthcare providers (40%- 60%) and significant degrees of burnout, particularly among nurses.(35).

A multi centric cross sectional study done on burnout and work place stress on 100 medical oncologist in Cairo Egypt, found that the overall burnout positive rate was 32% in all burnout subscales, while the percentages of those who were suffering EE, DP, and reduced PA were 30%,30%, and 25%, respectively(36).

Another cross-sectional study conducted in Egypt among 147 physicians and 234 nurses to assess the prevalence, associated factors, and consequences of burnout among ICU health care workers found that the majority (68.2%) of study participants reported a moderate level of burnout, with a significant difference between physicians and nurses, and that more than half of the nurses had high emotional exhaustion compared to 38.8% of physicians. For the depersonalization subscale, nurse outperformed physicians by 59.8% to 70.1%.Approximately half of the physicians reported having very low sentiments of personal accomplishment (12).

A study conducted in Malawi on burnout among maternal health personnel at a referral hospital found that 72% experienced emotional weariness, 43% experienced depersonalization, and 74% acquired a low level of personal achievement (24). According to a cross-sectional survey of 871 physicians working in five tertiary institutions in Nigeria, the frequency of burnout is as high as 75.5% (34).

Certain studies in Ethiopia revealed that the prevalence of burnout syndrome varies by geographical location, with 47.6% in Mekele public and private Hospital, 13.7% in Gondar University Hospital, 50.4% in public hospitals of Amara region, 36.7% in Jima University Teaching Hospital, 65.2% in public, General and specialized hospitals of southern Ethiopia, and 54.1% in public health facility of Dire city, respectively (5,23,24,27).An institutional based cross-sectional research of 508 health workers in dire dawa found that burnout was prevalent at 54.1% (23).

A cross-sectional study conducted at public hospitals in Addis Ababa in 2021 on the prevalence of burnout and associated factors among healthcare workers found that 31.6% of respondents had burnout syndrome, and 42% were highly emotionally exhausted. In this study, 43% (n=224) of respondents reported depersonalization and 45% (n=234) reported low personal achievement, respectively (21).

CHAPTER 3. OBJECTIVE

3.1 GENERAL OBJECTIVE

To assess burnout and its associated factors among health care professionals working in ED in selected hospitals in Addis Ababa from April to September 2024.

3.2 SPECIFIC OBJECTIVES

To determine the prevalence of burnout among health professionals working in ED in selected hospitals in Addis Ababa from April to September 2024.

To identify the associated factors for burn out among health professionals working in ED selected hospitals, from April to September 2024.

CHAPTER 4. METHODOLOGY

4.1 STUDY AREA

The study was conducted in selected three tertiary hospitals in Addis Ababa which have separate Emergency Department i.e SPHMMC, Black lion Hospital, AABET.

4.2 STUDY DESIGN AND PERIOD

An institution based multicenter cross-sectional study design was conducted to assess burnout and its associated factors among HCP working in ED of SPHMMC, Black lion Hospital, AABET from April to September 2024.

4.3 POPULATION

4.3.1 SOURCE POPULATION

The source population for this study was all health professional who were working in the ED of SPHMMC, Black lion Hospital, AABET in Addis Ababa at the time of data collection.

4.3.2 STUDY POPULATION

The study population were all health care professionals working in ED of SPHMMC, Black lion Hospital, AABET and who met the inclusion criteria and able to participate in the study.

4.4 INCLUSION AND EXCLUSION CRITERIA

4.4.1 INCLUSION CRITERIA

All health Care professionals with work experience at ED and who were available during the data collection period and willing to participate in the study.

4.4.2 EXCLUSION CRITERIA

Those who were not willing to participate in the study and Health professionals who come for short term attachment during data collection period (for example a resident who came from other institutions for detachment).

4.5 SAMPLE SIZE DETERMINATION

The sample size was determined by using the single population proportion formula assuming the $p = 54.7\%$ from a study done on health professionals at the Hawassa Ethiopia(23).with a 5% margin of error (d) and 95% confidence interval of certainty ($\alpha = 0.05$), non-response rate 10%.

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

n= minimum sample size required for the study

Z= standard normal distribution ($Z=1.96$) with confidence interval of 95% and $\alpha=0.05$

Using $P= 54.7\%$ (0.541) since the prevalence of burnout was 54.1 % from previous study conducted in Hawassa

d= Absolute precision or tolerable margin of error (d) = 5%=0.05

Non response = 10%

Applying the formula: $n = \frac{(Z_{\alpha/2})^2 \times P(1-P)}{d^2}$

d2

$$\text{Then, } n = (1.96)^2 [0.547 \times (1 - 0.547)] / (0.05)^2$$

$$= 380$$

The calculated sample size is 380

Since the total number of health professionals working in ED in the three selected study area was 455 (AABET=125, BLH=210, SPHMMC=120 i.e obtained from HR of respective Hospital) which is less than 10,000 correction formula was used

$$n_f = n / 1 + (n/N).$$

n_f=207 and adding 10% none-response rate from previous related research response rate

$$207 + 20.7 = 228$$

Therefore the final sample size =228

4.5.1 SAMPLING TECHNIQUE AND SAMPLING PROCEDURE

All health professionals found in the hospital were stratified by their profession type based on the assumption that workers in different hospitals have different risk for Burnout therefore Multi stage sampling was used as follows:

I selected three hospitals by convenience sampling technique namely: Addis Ababa Burn emergency and Trauma center (AABET), Black lion Hospital (BLH), St. Paul's hospital millennium medical college (SPHMMC) from hospitals found in Addis Ababa because these are the only hospitals having different health professional categories like residency ship program

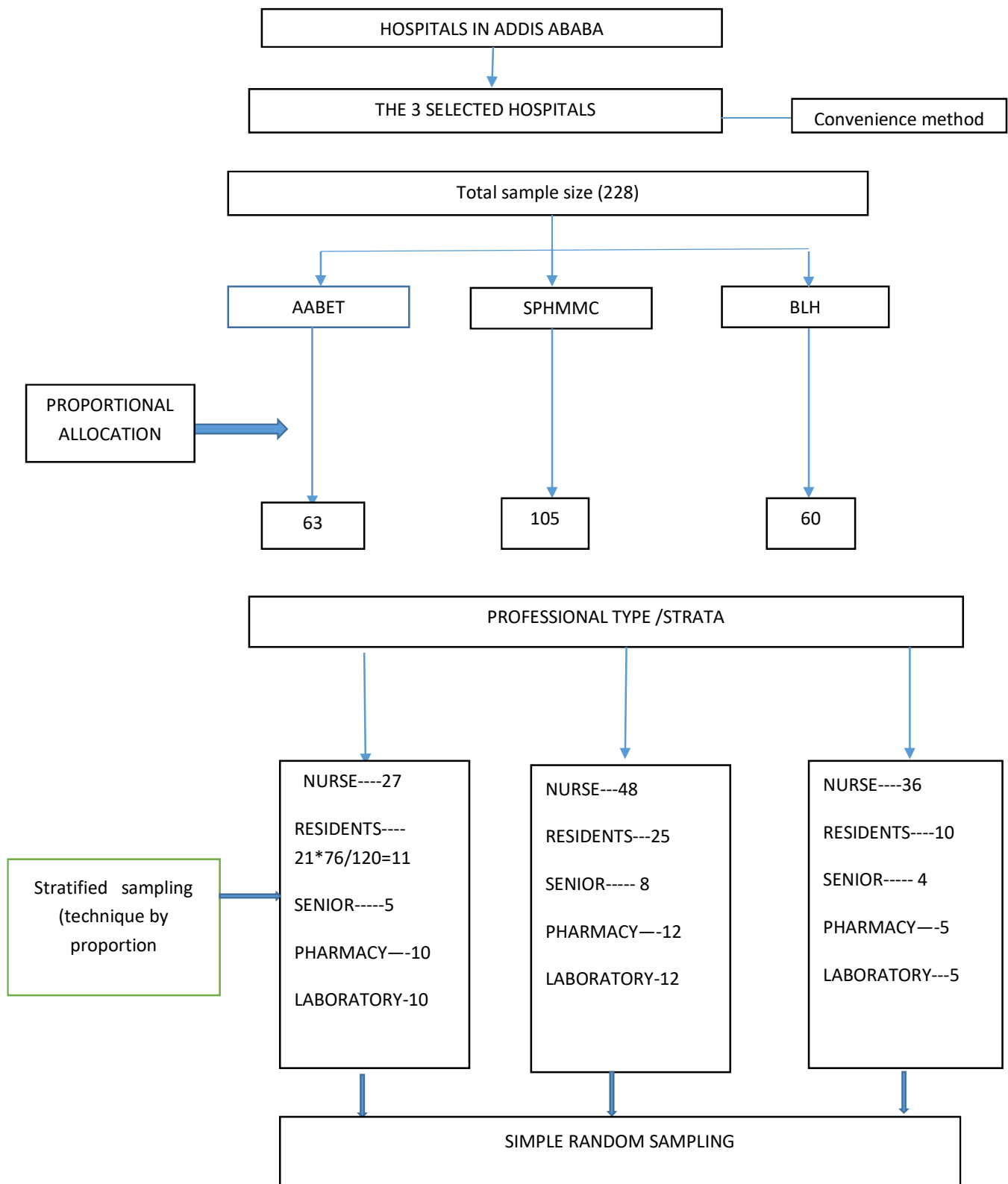
Then calculated sample size will be allocated to each stratum (Hospital) by their proportion

Accordingly the proportion for each hospital by proportion was :

$$\text{SPHMMC } (120 \times 228 / 455 = 60, \quad \text{for } \text{BLH } (210 \times 228 / 455 = 105, \quad \text{for } \text{AABET } (125 \times 228 / 455 = 63.$$

A simple random sampling technique will be used to select sample from each stratum in the selected hospital.

FIGURE 1: MULTISTAGE SAMPLING TECHNIQUE OF SOURCE POPULATION



4.6 VARIABLES

4.6.1 DEPENDENT VARIABLES

Prevalence of burnout

4.6.2 INDEPENDENT VARIABLES

Socio-demographic factors: age, sex, marital status, educational level, number of children and monthly salary

Personal risk factors: satisfaction with work, conflict with colleagues, smoking, drinking alcohol and khat-chewing

Work-related characteristics: job title, work overload, area of service delivery unit, hospital type, duty hours, years of work experience, training, recognition, support from family and organization, intention to leave work, sleeping hours and working hours.

4.7. DATA COLLECTION

4.7.1 DATA COLLECTION TECHNIQUE

The data was collected by nurses using a self-administered standardized Questionnaire. To assess the prevalence of burnout and its associated factors, Maslach Burnout Inventory- Human Services Survey (MBI-HSS) was used, which is the most commonly used 22-item measuring tool to self-assess the risk of burnout and it is a validated tool that values the three syndrome subscales of emotional exhaustion (9 items), depersonalization (five items), and lack of personal accomplishment (eight items) (18).

To obtain socio-demographic data relevant to the study participants were asked to provide information about their age, gender, marital status, educational level, the title of work, area of work, service years of experience, duration as a frontline health worker, work overload, health status, Health problems.

The questionnaires were given to the participants in all three study areas to fill during their free time after explaining the contents, aim, and anonymity of the study. There was no identifier for any personal response and the participants were not aware of the scoring system. Before starting the data collection, data collection format was cross matched with available information on records. The completed questionnaire were checked for missed values and completeness on daily basis.

4.8 DATA PROCESSING AND ANALYSIS

Data was checked for its completeness and correctness. It was also coded and analyzed using the SPSS version 29 software package. To explain the study population about relevant variables, descriptive statistics such as frequencies, and percentages were calculated. The result was presented in tables and charts. A P-value of less than 0.05 was considered to be statistically significant in all cases.

4.9. OPERATIONAL DEFINITION

Burnout is a physical and psychological outcome that resulted from long term exposure to job related stress characterized by psychological weariness to provide human service, it is characterized by emotional exhaustion (EE), depersonalization and lack of personal accomplishment.

The Maslach Burnout Inventory (MBI) is the most commonly used measure to assess burnout among health workers include 22-item measuring tool to self-assess the risk of burnout (18).

Emotional Exhaustion (EE): is described as “wearing out, loss of energy, depletion, debilitation, and fatigue”.

Depersonalization (DP): Is defined as “negative or inappropriate attitudes towards clients, irritability, loss of idealism, and withdrawal”.

Reduced Personal Accomplishment (PA): defined as ‘reduced productivity or capability, low morale, and an inability to cope.

High level of burnout: High scores on EE and DP Subscales and a low score on PA subscale. Cut-off values of high scores ≥ 27 for EE dimension, ≥ 13 for DP dimension, and ≤ 32 for PA (low PA dimension), was considered to correspond to a high level of burnout

Emotional exhaustion: low (<13), moderate (14-26), high (≥ 27). Corresponding to symptoms experienced a few times per month

Depersonalization: low (<2), moderate (3-9), high (≥ 10) corresponding to symptoms experienced once per month or less.

Personal accomplishment: low (≥ 43) average (31-42), high degree of burnout (≤ 31) corresponding to symptoms experienced approximately once per week.

4.10 ETHICAL CONSIDERATIONS

The final proposal of the research was presented to IRB of the college for approval of the research. After the approval, the research was conducted in St. Paul Hospital, BLH and AABET without using patient's name, staff's name or potential identifiers.

Information obtained from individual participants was kept secured and confidential. Names and other identifying data of respondents will be eliminated throughout the study process to maintain confidentiality

4.11 DISSEMINATION OF RESULTS

The result of the study will be presented to the community of SPHMMC and will be disseminated to concerned stake holders in order to enhance appropriate intervention and guide future plan for comprehensive prevention and appropriate management of burnout in emergency department. . Finally, after rigorous review it may be published in reputable medical journals

5. RESULT

5.1 SOCIODEMOGRAPHIC CHARACTERISTICS

A total of 212 health workers in emergency department of three hospitals in Addis Ababa participated in this study with a 93.9% response rate. The total sample size of the study was 228 participants, all of whom were healthcare professionals working in Black Lion Hospital, Saint Paul Hospital, and AABET Hospital.

The age of the respondents ranged from 21 to 46 years, with a mean age of 29.467 years. The study population was predominantly female, with 56.60% of participants identifying as female and 43.40% as male. A slight majority (52.36%) of respondents indicated that they had children, whereas 47.64% reported not having children. 56.60% of the respondents were married, 42.93% were single, and only 0.47% were divorced.

Nurses constituted the largest professional group (55.66%), followed by residents (34.91%). A small percentage (7.08%) were categorized under "other" professions, and 2.36% were specialists. This distribution indicates that nurses and residents form the bulk of the emergency department workforce.

Most participants (58.02%) reported an income between 10,000 and 20,000 ETB, while 33.02% earned between 5,000 and 10,000 ETB. A smaller portion (8.49%) earned above 20,000 ETB, and only 0.47% reported an income below 5,000 ETB.

5.2 WORK RELATED CHARACTERISTICS

Most participants (64.62%) worked between 11 to 14 hours per day, while 33.02% worked between six to ten hours. A small group (2.36%) worked over 14 hours daily, highlighting the demanding nature of emergency department work

Participants were grouped based on their years of work experience. A majority (66.98%) had between three and six years of experience, 21.23% had one to three years of experience, and 11.79% had more than six years. The data shows that most of the emergency department staff are in the middle stages of their careers.

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	92	43.40
	Female	120	56.60
Income (ETB)	10,000 - 20,000	123	58.02
	5,000 - 10,000	70	33.02
	Above 20,000	18	8.49
	Less than 5,000	1	0.47
Children	Yes	111	52.36
	No	101	47.64
profession	Nurse	118	55.66
	Resident	74	34.91
	Other	18	7.08
	Specialist	5	2.36
Years of work	1-3 years	45	21.23
	4-6 years	142	66.98
	Above 6 years	25	11.79
Marital status	Single	91	42.93
	Married	120	56.60
	Divorced	1	0.47
Hospital	Black lion	72	33.96
	St Paul	71	33.49
	AABET	69	32.55
Daily Work hours	6-10 hours	70	33.02
	11-14 hours	137	64.62
	Above 14 hours	5	2.36

Table 1: socio-demographic characteristic of study population

5.3 PREVALENCE OF BURNOUT AMONG HEALTH PROFESSIONALS IN EMERGENCY DEPARTMENT

This study also assessed the prevalence of burnout among health professionals working in the emergency departments of Black Lion, Saint Paul, and AABET Hospitals. Burnout was measured across three components: **personal achievement**, **depersonalization**, and **emotional exhaustion**. The overall burnout levels were categorized into mild, moderate, and high, providing a comprehensive view of the mental health challenges faced by these healthcare workers.

A health care provider is said to have had burnout if he/she had high scores in either emotional exhaustion or depersonalization sub-scales. In this study from a total of 212 participants 152(71.70%) experienced high levels of burnout.

5.3.1 BURN OUT COMPONENTS

The study also analyzed the three major components of burnout: **personal achievement**, **depersonalization**, and **emotional exhaustion**.

- **Personal Achievement:** A high percentage (86.79%) of the healthcare workers reported a high level of personal achievement, suggesting they feel competent and successful in their roles despite the emotional strain.
- **Depersonalization:** A significant proportion of respondents (89.62%) experienced high levels of depersonalization, which reflects a sense of emotional detachment and negative attitudes toward patients.
- **Emotional Exhaustion:** Emotional exhaustion, a key indicator of burnout, was reported as high by 80.66% of the respondents, with a smaller portion (16.04%) experiencing moderate exhaustion

Components of BO	Degree of BO	Frequency (n)	Percentage (%)
Emotional exhaustion	Mild	7	3.30
	Moderate	34	16.04
	High	171	80.66
Depersonalization	Mild	1	0.47
	Moderate	21	9.91
	High	190	89.62
Personal achievement level	Mild	14	6.60
	Moderate	14	6.60
	High	184	86.79

Table 2; burn out components (Maslach Burnout Inventory Human Service Survey)

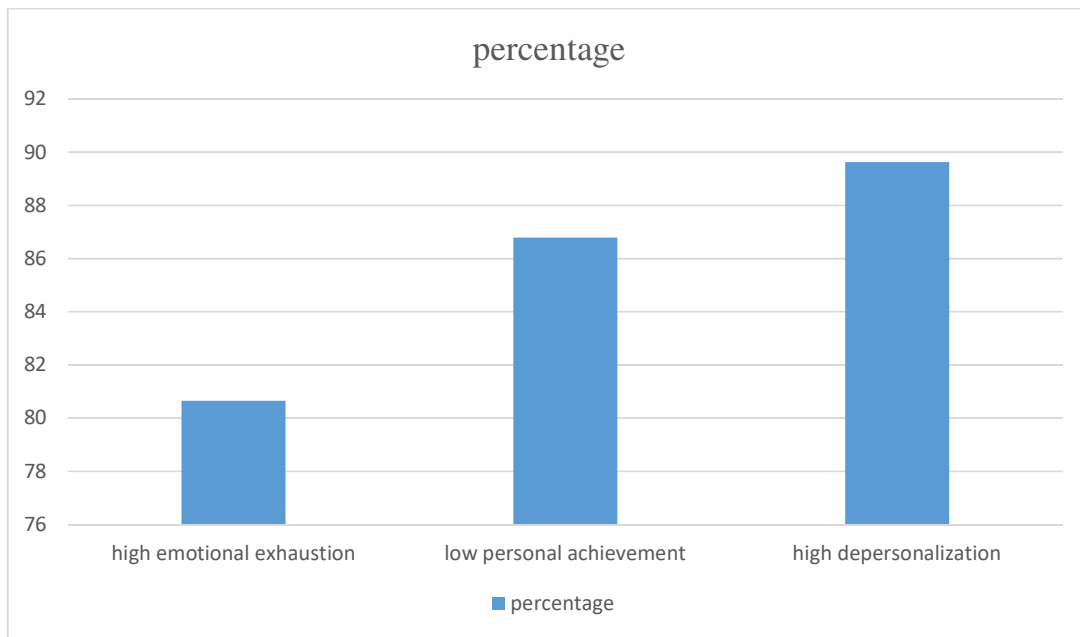


Figure 2: Bar graph representation of MBI Components of Burn out

5.4 SOCIAL SUPPORT OF HEALTH PROFESSIONALS

The Oslo Social Support Scale (OSSS) was used to assess the level of social support among health workers in the emergency departments of AABET, St. Paul, and Black Lion hospitals.

- ☐ Strong support was reported by 8 participants, which accounts for **3.77%**
- ☐ Moderate support was reported by 69 participants, representing **32.55%**
- ☐ Poor support was reported by the majority, with 135 participants (**63.68%**).

The results indicate that a significant proportion of the health workers in emergency departments experience **poor social support** (63.68%). This suggests that most of the workforce in these settings may lack sufficient social support, which could potentially contribute to higher levels of stress, burnout, or poor mental health. The small percentage of workers who reported strong social support (3.77%) may be a critical area for intervention to improve the wellbeing of healthcare workers.

Frequencies for social support (N=212)			
Oslo social support	Frequen cy	Percent	Valid Percent
Strong support	8	3.77	3.77
moderate support	69	32.55	32.55
poor support	135	63.68	63.68
Total	212	100.00	

Table 3 Frequencies for social support of study population

5.5 SLEEP DISTURBANCE

The Athens Insomnia Scale (AIS) was utilized to evaluate the degree of sleep disturbance among the same population. The data shows that the majority of healthcare workers suffer from **mild insomnia** (79.72%), with a notable portion also experiencing **moderate insomnia** (18.87%). Only a small fraction suffers from severe insomnia. This high prevalence of sleep disturbance, with nearly 99% of participants experiencing some degree of insomnia, may be associated with the demanding work conditions of emergency departments, such as long shifts, high workload, and stress, all of which can significantly affect sleep quality.

Frequencies for Athens insomnia scale(N=212)			
Athens os	Frequency	Percent	Valid Percent
Mild insomnia	169.00	79.72	79.72
Moderate insomnia	40.00	18.87	18.87
Severe insomnia	3.00	1.42	1.42
Total	212.00	100.00	100.00

Table 4: Frequencies for Athens insomnia scale of study population

5.6 FACTORS ASSOCIATED WITH BURNOUT AMONG HCW IN EMERGENCY

Based on the linear regression results provided for burnout prevalence and its components (emotional exhaustion, depersonalization) A variable that shows significant association for linear regression were Duration of years spent in the emergency department, hours worked per day and poor social support.

The model summary for emotional exhaustion shows an **R² of 0.245**, indicating that approximately 24.5% of the variance in emotional exhaustion is explained by the independent variables (age, children, duration, income, hours, gender, profession, marital status). The **Adjusted R²** of 0.215 suggests that the model is a good fit after adjusting for the number of predictors.

Duration of years spent in the emergency department has a positive and significant effect on emotional exhaustion ($\beta = 0.057$, $p = 0.006$), suggesting that longer service in the department increases emotional exhaustion.

Hours worked per day is also a significant predictor ($\beta = 0.062$, $p < 0.001$), indicating that more hours worked per day is associated with higher emotional exhaustion.

Model Summary - BO-emotional exhaustion				
Model	R	R ²	Adjusted R ²	RMSE
M ₀	0	0	0	0.492
M ₁	0.495	0.245	0.215	0.436
Note. M ₁ includes age, children, duration, income, hour, gender, profession, marital status				

Table 5:- emotional exhaustion component regression analysis model summary

Coefficients						
Model		Unstandardized	Standard Error	Standardized	t	p
M ₀	(Intercept)	2.774	0.034		82.036	< .001
M ₁	(Intercept)	2.14	0.489		4.377	< .001
	age	-0.009	0.009	-0.073	-0.97	0.333
	children	0.008	0.126	0.008	0.063	0.95
	duration	0.057	0.02	0.192	2.806	0.006
	income	-0.033	0.035	-0.063	-0.942	0.347
	hour	0.062	0.01	0.407	6.027	< .001
	gender	-0.061	0.062	-0.062	-0.99	0.323
	profession	0.011	0.03	0.024	0.387	0.699
	marital status	-0.017	0.122	-0.018	-0.143	0.886

Table 6: Multiple linear regression analysis for emotional exhaustion component

The ANOVA table shows that the model is significant overall ($F = 8.240$, $p < 0.001$), meaning that the independent variables collectively predict emotional exhaustion.

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	12.534	8	1.567	8.24	< .001
	Residual	38.598	203	0.19		
	Total	51.132	211			
Note. M ₁ includes age, children, duration, income, hour, gender, profession, marital status						

Table 7: ANOVA model summary for emotional exhaustion component

The model for overall burnout prevalence has an **R² of 0.111**, indicating that 11.1% of the variance in burnout is explained by the independent variables. The **Adjusted R²** is 0.076, reflecting that the model has a relatively low predictive power.

Hours worked per day and **poor social support** are the significant predictor of burnout prevalence ($\beta = 0.057$, $p < 0.001$), meaning that health professionals working more hours per day tend to experience higher burnout levels

Overall, **hours worked per day** and poor social support consistently emerged as a significant factor in both emotional exhaustion and burnout prevalence, suggesting that reducing work hours might help mitigate burnout among emergency department health workers.

The ANOVA table indicates that the model is significant ($F = 3.157$, $p = 0.002$), meaning that the predictors collectively have a meaningful effect on burnout prevalence. Other variables such as age, gender, and marital status did not play a significant role in predicting burnout or its components.

These findings highlight the critical role of work conditions (specifically hours and tenure) in shaping burnout outcomes, suggesting that interventions targeting work schedules could be effective in reducing burnout among healthcare workers in these hospitals

Model Summary – Burn Out-prevalence				
Model	R	R ²	Adjusted R ²	RMSE
M ₀	0	0	0	0.589
M ₁	0.333	0.111	0.076	0.566

Table 8: Model summary for Burn out prevalence

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regression	8.101	8	1.013	3.157	0.002
	Residual	65.12	203	0.321		
	Total	73.222	211			
Note. M ₁ includes age, children, duration, income, hour, gender, profession, marital status						

Table 9: ANOVA summary for Burn out prevalence

Coefficients						
Model		Unstandardized	Standard Error	Standardized	t	p
M ₀	(Intercept)	5.665	0.04		140.022	< .001
M ₁	(Intercept)	4.974	0.635		7.833	< .001
	age	-0.005	0.012	-0.031	-0.381	0.704
	children	0.038	0.163	0.032	0.234	0.815
	duration	0.022	0.026	0.063	0.849	0.397
	income	-0.028	0.046	-0.044	-0.607	0.545
	hour	0.057	0.013	0.308	4.204	< .001
	oslo sss	0.012	0.08	0.01	0.153	0.009
	profession	0.001	0.039	0.002	0.036	0.971
	Marital status	-0.008	0.159	-0.007	-0.051	0.959

Table 10: Multiple Linear regression table for Burn out prevalence

6. DISCUSSION

Burnout syndrome (BOS) is a psychological syndrome characterized by Emotional Exhaustion (EE), Depersonalization (DP), and Low Personal Accomplishment (PA) as a result of a prolonged negative response to chronic work-related stressors. It can occur in people who work with people in some capacity for an extended period of time without adequate rest or recovery time. Emotional exhaustion, depersonalization, and personal accomplishment subscale values all contribute to burnout. Maslach Burnout Inventory-Human Services Survey (MBI- HSS) was used to assess burnout. The purpose of this cross-sectional study was to determine the prevalence of burnout syndrome and its associated factors in a public hospital. Furthermore, the findings of this study will be critical in overcoming the issues associated with burnout syndrome among health professionals, such as decreased quality of care, poor interaction with health care professionals, and high turnover rates and absenteeism (45–47).

The results of this study highlight significant levels of burnout among healthcare workers in the emergency departments of Black Lion, St. Paul, and AABET hospitals in Addis Ababa. These findings align with the broader literature on burnout in healthcare professionals, particularly in high-stress environments such as emergency departments

In this study, 71.7% of healthcare workers experienced high levels of burnout, a figure that resonates with global reports. The literature notes that burnout prevalence among healthcare workers varies significantly, with rates as high as 85% for nurses and 70% for physicians, depending on geographical region and medical specialty. In particular, the 75.5% burnout prevalence observed in Nigerian physicians is similar to the findings in Addis Ababa, emphasizing the universal nature of this issue across low- and middle-income countries. Moreover, Ethiopian studies have shown burnout rates ranging from 13.7% to 65.2%, depending on the location and specific healthcare setting. The high

burnout rates in this study are consistent with these national findings, particularly for public hospitals in Ethiopia.

The study found that 80.66% of respondents reported high levels of emotional exhaustion, while 89.62% experienced significant depersonalization. These results align with global trends where emotional exhaustion is often the most prevalent component of burnout. For example, a systematic review found that 72% of healthcare workers reported Emotional exhaustion. The literature also points to high levels of depersonalization in countries such as Brazil (29.4%) And Egypt, where 70.1% of nurses exhibited this symptom. The exceptionally high rates of depersonalization in Addis Ababa might reflect the extreme pressures faced by emergency department staff, who are often exposed to life-or-death situations, overwork, and resource constraints.

Interestingly, despite high levels of emotional exhaustion and depersonalization, 86.79% of respondents reported a high sense of personal achievement. This contrasts with findings from other studies, where low personal accomplishment is a common burnout symptom. For example, in Malawi, 74% of healthcare workers reported low personal achievement. This discrepancy may be due to cultural differences in how personal achievement is perceived, or it could indicate that, despite the emotional toll, emergency department workers in Addis Ababa still find meaning and satisfaction in their work.

The regression analysis identified hours worked per day, long duration of work at emergency and poor social support as significant predictors of burnout, particularly in emotional exhaustion and overall burnout prevalence. The literature similarly identifies long working hours as a major risk factor for burnout. Studies from Egypt and Saudi Arabia emphasize the role of excessive working hours in elevating burnout levels. The association between poor social support and burnout has also been well-documented. In this study, 63.68% of respondents reported poor social support, which correlates with findings from other research showing that limited social support exacerbates stress and burnout among healthcare workers.

The literature supports these findings, as multiple studies have highlighted the impact of long working hours and poor social support on burnout. For example, studies from the Middle East and Africa frequently cite high workload and inadequate social support as primary contributors to burnout. A cross-sectional study in Nigeria, which showed a burnout prevalence of 75.5%, similarly pointed to high workloads and insufficient social support as key drivers. The global data from regions like Europe and North America also indicate that excessive work hours are a strong predictor of burnout, particularly in high-stress environments such as emergency departments

The high prevalence of insomnia (99% experiencing some degree of insomnia, with 79.72% reporting mild insomnia) is another key finding. The literature underscores the impact of sleep disturbance on burnout, with one Brazilian study showing that nearly half of healthcare workers suffered from emotional weariness and sleep-related issues during

the COVID-19 pandemic. This suggests that poor sleep hygiene, exacerbated by long working hours and high stress, is a critical factor contributing to both physical and emotional exhaustion.

Compared to the burnout rates observed in high-income countries, such as those reported in Europe and North America, the burnout prevalence in this study appears significantly higher. European Union countries, for instance, report lower burnout rates, with some as low as 4.3% (Finland). This contrast may be attributed to better working conditions, lower workloads, and stronger social support systems in these regions. On the other hand, the burnout rates in this study are more in line with those reported in African and Middle Eastern countries, where healthcare systems are often under-resourced and workers face heavier workloads and higher emotional demands.

7. STRENGTH AND LIMITATION OF THE STUDY

This study has several strengths, including a high response rate and it is the first study to be conducted in emergency department and encompassing these three hospitals. The questionnaires used in this study are all validated and international. I had adequate time to collect the data from respondent.

The study was a cross-sectional study and can only reflect the experience of front-line healthcare providers at the time of assessment, and therefore the analysis may not represent burn out and its predictors in other working sites of hospitals.

The data was collected through self-report of the respondents, so there could be a social desirability bias to the outcome Variable and some health professionals who were not interested in joining the study stated that not having enough time to fill out the questionnaire.

8. CONCLUSION AND RECOMMENDATION

In conclusion, the high prevalence of burnout among emergency department healthcare workers in Addis Ababa is consistent with regional and global trends in low-resource settings. Factors such as long working hours and poor social support are key contributors to burnout, and addressing these issues could lead to significant improvements in worker well-being and patient care. The study highlights the need for targeted interventions to reduce the burden of burnout in these high-stress environments

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10. ANNEXES

ANNEX-1 INFORMED CONSENT

Dear participants,

This study aims to assess the "burn among HCP and Associated factors of Burnout Syndrome among health professionals working in ED of three selected hospitals in Addisababa: You are selected to participate in this study because you are currently working as a health care provider in this facility. Your participation in this study will only be based on your willingness to participate. You have the right to choose not to take part in this study. If you are willing, you have the right to stop at any time or withdraw without giving any reason which you will not be subjected to any ill-treatment. There will be no direct benefit by participating in this study but in future information gathered by this study will helps policy makers, programmers and researchers to give appropriate attention on issues of health care provider burn out in ED.

The questioners involve various personal and job life related questions. To achieve the objective of the research, we are requesting to participate. There are questions for you to answer politely and there is no need to put your name on the questionnaire; no individual response will be reported. Your response will be completely confidential. It is your full right to accept or refuse to answer on behalf of your relative questions. However; your honest answer to those questions will help us to assess and understand the effect. So; we are requesting you give informed consent based on your volunteer.

The information that you provide will be kept confidential by using only code numbers and locking the data. Only the members of the study team will have the access to the non-coded data and the data will not be used for purposes other than the study.

Are you willing to participate in this study? A. Yes B. No

If yes, signature of the participant-----

Date :-----

A..SOCIODEMOGRAPHIC

1, Age (how old are you?)

2, Gender ☐ Male ☐ Female

3, Marital status ☐Single ☐Married ☐Divorced ☐Widowed ☐Married but not living together

5, What is your Monthly household income (birr/month)?

6, Do you have children ? ☐Yes ☐No

7, What is your current educational level? ☐Diploma ☐degree ☐MSC ☐ specialist ☐other

8, What is your proffesion (Job title)? ☐Nurse ☐Pharmacy ☐Resident ☐ specialist ☐ other

9, How long work as a health care provider in years ?

10, How long work as frontline health care worker in ED ?

11, What is the average working hours: A, ----- per shift? B,----- per day? C----- per week? D,----- per month?

B. QUESTIONNAIRE ON WORK RELATED FACTORS

S.NO	QUESTION	RESPONSE	REMARK
1	Number of patients you will treat or provide care per week	1.less than 10 2.11-20 3.21-30 4.Greater than 30	
2	Are you working in shifts?	1.YES 2.NO	
3	Do you work in private health institutions?	1.YES 2.NO	
4	Are you paid for any extra load/duty payment on time?	1.YES 2.NO	
5	Is there organizational support for a staff related to your service?	1.YES 2.NO	
6	Is your working environment equipped with adequate medical equipment/Lab investigations/Medications?	1.YES 2. NO	
7	Do you have intention to leave working environment in the future?	1 YES 2 NO	
8	Are there opportunities for career advancement within ED	1 YES 2.NO	
9	Are there support systems in place to help you cope with the emotional toll of your work	1.YES 2.NO	
10.	How frequent do you have to work overtime or take an additional shift in ED	1.Everyday 2.twice a week 3.once a week 4.specify	
11.	How often do you have to deal with emotionally challenging or traumatic situations in ED?	1.everyday 2 twice a week 3.once a week 4.specify	
12	Are there opportunities for breaks during your shifts in the ED?	1.YES 2.NO	

10	How frequent do you have to work overtime or take an additional shift in ED	1. Everyday 2. twice a week 3. once a week 4. specify	
11.	How often do you have to deal with emotionally challenging or traumatic situations in ED?	1. everyday 2 twice a week 3. once a week 4. specify	
12	Are there opportunities for breaks during your shifts in the ED?	1. YES 2. NO	

S. No	Questions	Never	A Few Times per Year	Once a Month	A Few Times per Month	Once a Week	A Few Times per Week	Every Day
	Section A	0	1	2	3	4	5	6
1	I feel emotionally drained by my work.							
2	Working with people all day is really a strain.							
3	I feel burned out from work.							
4	I feel frustrated by my work.							
5	I feel that I'm working too hard on my job.							
6	Working with people directly puts too much stress							
7	I feel like I am at the end of my tether.							
	Subscores							
	Section A- Total Score							

1. MASLACH BURNOUT INVENTORY (MBI)

