

**INSTITUTE OF HEALTH
FACULTY OF PUBLIC HEALTH
DEPARTMENT OF HEALTH POLICY AND MANAGEMENT**

**BURNOUT AND ASSOCIATED FACTORS AMONG HEALTH
PROFESSIONALS IN SELECTED PUBLIC, AND PRIVATE HOSPITALS OF
JIMMA ZONE SOUTHWEST ETHIOPIA.**

**BY
JEMILA TAHA**

A Thesis to be Submitted to Jimma University Institute of Health, Faculty of Public Health, Department of Health Policy and Management for the Partial Fulfillment of the Requirement for Degree of Master in Public Health in Health Service Management.

**NOVEMBER, 2022
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Abstract

Background: Burnout refers to the emotional depletion and loss of motivation that result from prolonged exposure to chronic emotional and interpersonal stressors on the job. It is defined by the three dimensions of exhaustion, cynicism, and professional inefficacy. Health care professionals-due to the nature of their day-to-day activities are prone to occupational burnout. The healthcare workforce often carries excessive and sometimes complex workloads that lead to burnout. Burnout results in reduced job satisfaction and performance, and an increase in stress-related health problems. To best of our knowledge there is a paucity of literature of regarding the topic. Thus, this study aimed to fulfill knowledge gap in the study area.

Objectives: To assess the prevalence of burnout and associated factors among health professionals working in private and selected public health hospitals in the Jimma Zone.

Methods: A comparative cross-sectional study design was employed from May 24-August 24, 2022. A total of 406 (203 from public and 203 health professionals from private hospital were involved by using a systematic random sampling technique. Data were collected using quantitative method of data collection using self-administered questionnaire. Job satisfaction was assessed by Minnesota Job Satisfaction Questionnaire and burnout was assessed by Maslach Burnout Inventory methods. The collected data were entered into epidata software v 4.6.1 and exported to SPSS version 26 for analysis. Both descriptive and inferential statistics were use. Multivariable logistic regression analysis was employed. P-value < 0.05 was used to identify the significant predictors.

Results: The overall health professionals' burnout was 53% [95%CI: 48.9-57.9]. High level of burnout was observed in 30.5%, 49.3% and 56.7% for emotional exhaustion, depersonalization and personal accomplishment subscales respectively. In multiple logistic regression analysis, monthly income >10500 [AOR=2.14, CI (1.17-3.89)], moderate perceived social support [AOR=0.33, CI (0.17-0.64)], high perceived social support [AOR=0.19, CI (0.09-0.41)], and less satisfaction with the job [AOR=2.87, CI (1.51-5.47)] were significantly associated with the presence of burnout.

Conclusion and recommendations: Overall the magnitude of burnout was high among health professionals of Jimma Zone. There was no statistically significant difference in the rates of burnout comparing health professionals working in private versus public hospitals. Moderate and high level of perceived social support negatively associated with burnout. Health care professionals satisfied with their job have less risk of burnout. Stakeholders should give due emphasis to burnout of health professionals. Strategies to promote social support and job satisfaction of health professionals should be the priorities of interventions. Future studies should evaluate the problem including the role of monthly income on burnout with better design and causality.

Keywords: Burnout, Health professionals, associated factors, Jimma zone

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List of Abbreviations

AOR	Adjusted Odds Ratio
ASSIST	Alcohol, Smoking, and Substance Involvement Screening Test
CI	Confidence interval
COR	Crude Odds Ratio
DP	Depersonalization
EE	Emotional Exhaustion
ICD	International Disease Classification
IRB	Institutional Review Board
MBI	Maslach Burnout Inventory
MSPSS	Multidimensional Scale of Perceived Social Support
PA	Personal Accomplishment
SPSS	Statistical Product and service solution software

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Chapter One: Introduction

1.1. Background

The term burnout was introduced by Freudenberg in 1974 when he observed a loss of motivation and reduced commitment among volunteers at a mental health clinic. Burnout refers to the emotional depletion and loss of motivation that result from prolonged exposure to chronic emotional and interpersonal stressors on the job. It is defined by the three dimensions of exhaustion, cynicism, and professional inefficacy [2].

Burnout is now categorized as a “syndrome” that results from “chronic workplace stress that has not been successfully managed,” according to the World Health Organization’s International Disease Classification (ICD-11)—the official compendium of diseases. It is characterized by three dimensions: Feelings of energy depletion or exhaustion; Increased mental distance from one’s job, or feelings of negativism or cynicism related to one's job; and Reduced professional efficacy [3]. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life. Physician burnout has increasingly become a focus of public health concern. Notably, workplace burnout has been recognized in the ICD-11 as a diagnosable condition (diagnostic code QD85), “resulting from chronic workplace stress” and encompassing a constellation of exhaustion, cynicism, and reduced efficacy [4].

Burnout has become a big concern within healthcare. It is a response to prolonged exposure to occupational stressors, and it has serious consequences for healthcare professionals and the organizations in which they work. Burnout is associated with sleep deprivation, medical errors, poor quality of care, and low ratings of patient satisfaction [5]. Burnout does not just affect patient safety. Failing to deal with burnout results in higher staff turnover, lost revenue associated with decreased productivity, financial risk, and threats to the organization’s long-term viability because of the effects of burnout on quality of care, patient satisfaction, and safety [6]. Burnout is common among physicians in the United States, with an estimated 30% to 40% experiencing burnout. Many aspects of patient care may be compromised by burnout. Physicians who have burnout are more likely to report making recent medical errors, score lower on instruments measuring empathy, and plan to retire early and have higher job dissatisfaction, which has been associated with reduced patient satisfaction with medical care and patient adherence to treatment plans [7].

Various measures were proposed, based on different assumptions about burnout, and many of them relied on the face validity of the measurement items or statements. The first burnout measure that was based on a comprehensive program of psychometric research was the Maslach Burnout Inventory (MBI) [8]. The MBI was specifically designed to assess the three dimensions of the burnout experience which had emerged from the earlier qualitative research; in contrast, other initial measures of burnout focused only on the dimension of exhaustion [9].

High level of burnout is more common among physicians and nurses, and it is associated with external factors such as high workload, long journeys, and ineffective interpersonal relationships. The presence of burnout among health professionals is associated with worsening patient safety [10]. Few studies[11–14] were conducted in Ethiopia regarding burnout in healthcare workers. Due to the growing nature of the population, health-seeking behavior of the society, and implementation of health insurance schemes, as well as market inflation[15], health care workers will face a greater burden nowadays.

1.2. Statement of the Problem

A systematic review and meta-analysis conducted to determine burnout among nurses in 49 countries and 61 studies (45,539 nurses), pooled the global prevalence of burnout to be 11.23%. Significant differences were noted between geographical regions, specialties and type of burnout measurement used. Sub-Saharan African region had the highest burnout symptoms prevalence rate while Europe and Central Asia region had the lowest [16].

A systematic review and meta-analysis conducted among sub-Saharan African countries to investigate burnout among nurses found; according to the Maslach Burnout Inventory (seven studies, n = 1923), the prevalence of emotional exhaustion was 66% (95% confidence interval [CI], 37% to 89%), 60% (95% CI, 31% to 85%) for depersonalization, and 49% (95% CI, 19% to 80%) for low personal achievement. The overall prevalence of burnout among studies that utilized the Professional Quality of Life Scale (three studies, n = 337) was 87% (95% CI, 54% to 100%) [17]. The pooled burdens of occupational stress and burnout in Ethiopia were 52.9% (95% confidence interval [CI], 46.2-59.7) and 39.1% (95% CI, 23.9-52.3), respectively [18]. Generally, more than half and more than one-third of health care workers were affected by occupational stress and burnout, respectively, in Ethiopia, and sociodemographic and occupation-related factors were significant factors. Physician burnout can lead to severe personal and professional consequences if left unaddressed.

A meta-analysis of 47 studies on 42,473 physicians found that burnout is associated with 2-fold increased odds for unsafe care, unprofessional behaviors, and low patient satisfaction. The depersonalization dimension of burnout had the strongest links with these outcomes; the association between unprofessionalism and burnout was particularly high across studies of early-career physicians[19]. Physician burnout is associated with suboptimal patient care and professional inefficiencies [19].

About 9% of the physicians who experience burnout are prone to have made at least one major medical error in the past three months and receive low patient-physician satisfaction scores [20,21]. There is a strong bidirectional dose-response relationship between burnout syndrome scores and medical errors, where errors lead to distress and distress leads to errors [20]. Emotional exhaustion is suggestive of being positively correlated with the workload, constrained organization, work conflicts, violence, and poor mental health, and negatively correlated with autonomy. It is seen that female physicians are more prone because of clinical burden. Unable to handle this challenge, some physicians leave the organization, resulting in a loss of \$50,000 to \$1 million in training and recruiting a new physician [20,21]. US physicians experience lower emotional exhaustion compared to European physicians due to safe culture,

excellent career opportunities, and the problem facing coping methods [22]. Tawfik et al. [23] conducted a population-based survey of US physicians from August 2014 to October 2014 with the objective of evaluating physician burnout, well-being, and work unit safety grades about perceived significant medical errors. The results of the survey showed that 54.3% reported symptoms of fatigue, 32.8% reported excessive fatigue, and 6.5% reported recent suicidal ideation, with 3.9% reporting a poor or failing patient safety grade in their work area and 10.5% reporting a significant medical error in the three months prior. Physicians reporting medical errors were more likely to have symptoms of burnout, fatigue, and recent suicidal ideation [23].

The economic, personal, and work-related factors can be responsible for the burnout of the working staff, resulting in the premature departure from their jobs. This influences the high turnover of costs for administration in replacing trained health workers, lost quality, diminished productivity, and lowered morale [24]. The contributors include workload stress, including working in the proximity of terminal illness, trauma, and deaths. This can sometimes lead to psychological stress ending in friction at work, such as verbal violence and others. These factors can be addressed by gaining insight into factors such as recognition being the critical motivator at work, stability, flexible work schedules, professional growth, and adequate supervision, which play a vital role in the longevity of the working staff. This can eventually lead to enhanced job commitment by the working staff [24].

The personal consequences of physician burnout can be classified into two categories: physical and psychological. These consequences manifest as symptoms and can range from mild to severe on a case-by-case basis. More broadly, burnout is associated with impairment to physicians, who can complain of feeling tired, exhausted, fatigued, inattentive, and irritable [25].

Burnout can also put a physician at increased risk of motor vehicle accidents and near-miss events, even after adjusting for fatigue [26]. Psychologically, physician burnout might contribute to increased incidence of stress, disruptive behavior, mood disorders, and a noted correlation with depression [27]. The presence of any of these conditions can severely impact a physician's well-being, disrupting their personal life and decreasing professional efficiency. This creates a slippery slope because it increases the odds of substance abuse with increased alcohol abuse/dependence, especially in surgeons [28]. Most physicians do not acknowledge their symptoms or admit that they can be affected by burnout and refuse to seek help to lead to a two-fold increased risk of suicidal ideation [29,30].

Physicians are at an increased risk of suicide (28–40 per 100,000) compared to the general population (12.3 per 100,000), especially among specialties that make up the “front-line of care” like an emergency, primary, and preventive medicine [31]. Although physicians of both genders with burnout have an

equally high suicide rate, it is thought-provoking to note the completed suicide rate in female physicians exceeds that of the general population by 2.5 to 4 times. They attempt suicide far less often than women in the general population, but when they do, it is usually a completed suicide rather than an attempted one. Therefore, the suicide rate among female physicians is 2.27 times higher compared to females in the general population. In male physicians, it is 1.41 times higher compared to males in the general population [32,33].

Perhaps the professional consequences of physician burnout can contribute to the failure of interpersonal relationships, increased medical errors, increased risk of malpractice, reduced patient satisfaction, and the quality of care and patient outcomes [34]. A physician suffering from burnout is less productive and may even quit at some point, impacting the health care system economically by increasing costs. Among physicians, the degree of perceived control over stressors at work can have both behavioral as well as physiological effects, and this is one of the single most potent predictors of burnout. It is conceivable that a reduced sense of control over the work environment has been associated with anxiety, reduced motivation and persistence, depression, longer time needed to solve problems, and the tendency to give up easily [35].

Although, burnout has been a real problem among health professionals in Ethiopia, studies especially comparing the burnout rates in private and government health institutions are scarce. Besides, the associated factors for burnout were not determined in the study area. Identifying these factors will provide directions for possible intervention.

Since nurses are the most vulnerable followed by physicians, we planned to conduct this study on these two professionals. Among the occupations in health institutions nurses had the highest vulnerability in experiencing burnouts followed by Doctors [36]. In a study done in Nigeria 2.9% of nurses had emotional exhaustion (EE), 47.6% had depersonalization (DP) and 53.8% had reduced personal accomplishment (RPA) [37].

To our knowledge, there is a paucity of studies regarding the topic in Jimma Zone health facilities both in public and private. Therefore, this study aimed to determine prevalence of burnout and conducting a comparison among public and private hospitals to give an overall picture of the public, and the private hospitals respective to that.

1.3. Significance of the study

Occupational stress and burnout are a global epidemic that can cause severe negative effects on workers' physical and emotional health. This problem represents a public health crisis with negative impacts on individual physicians, patients, and healthcare organizations and systems. Burnout impairs both personal and social functioning. The decline in the quality of work and in both physical and psychological health can lead to various negative consequences to the individual, and everyone connected to the individual.

This study compared health professionals' burnout working in private and public health institutions in Jimma zone. And it determined the associated factors determining burnout among these subjects. The results of this study;

1. Show the state of the problem in study area generally. This in turn may insinuate the gravity of the problem, and awoke the stakeholders in general and the health care professionals in particular.
2. Compare burnout rates in private and public health institutions. This determines the vulnerability of private versus public health institution workers and indicates the hotspot of this problem.
3. Determine determinants of burnout among health professionals. Responsible bodies will use the finding of the paper in prioritizing interventions in tackling this problem.
4. Provide empirical data for future researchers in exploring this problem.

Chapter Two: Literature Review

Burnout is predominantly defined by its three main components: exhaustion, cynicism, and professional inefficacy. Exhaustion refers to feelings of being overextended and depleted of one's emotional and physical resources. Workers feel drained and used up, without any source of replenishment. They lack enough energy to face another day or another person in need. The exhaustion component represents the basic individual stress dimension of burnout. Cynicism refers to a negative, hostile, or excessively detached response to the job, which often includes a loss of idealism. It usually develops in response to the overload of emotional exhaustion, and is self-protective at first an emotional buffer of “detached concern.” But the risk is that the detachment can turn into dehumanization. The cynicism component represents the interpersonal dimension of burnout. Professional inefficacy refers to a decline in feelings of competence and productivity at work. People experience a growing sense of inadequacy about their ability to do the job well, and this may result in a self-imposed verdict of failure. The inefficacy component represents the self-evaluation dimension of burnout [42,43].

2.1 Prevalence of burnout among health professionals

Burnout is an epidemic of modern society and become a serious health issue worldwide. In a study done in Europe, 43% of doctors scored high for emotional exhaustion 35% for depersonalization and 32% for personal accomplishment, with 12% scoring high burnout in all three dimensions [44]. A study on Neurosurgery Residents in the United States showed that burnout was prevalent in 36.5% of residents with 32.5% having high EE (emotional exhaustion) and 21.6% experiencing high DP (depersonalization) and 87.1% have high PA (personal accomplishment) [45].

A cross-sectional study done on physicians in Saudi Arabia showed that 53.5% of physicians scored high for emotional exhaustion (EE), 38.9% for depersonalization (DP), and 28.5% for personal accomplishment (PA), with 2.78% scoring high burnout in all three dimensions [46].

In a cross-sectional study done in Syria among resident physicians, 646 (19.3%) had a high level of burnout in all three dimensions' and 3140 (93.75%) had a high level of burnout in at least one domain. And the subscale showed 77.9% of physicians had a high level of EE 54.6% had a high level of DP and 13.7% had a low level of PA [47].

In a study conducted by Quattrin, R et al., in northeastern Italia among nurses working in oncology 35% of the nurses had a high level of emotional exhaustion, 17% had a high level of depersonalization, and 11% had a high level of personal achievement [48]. According to Gan, Y et al. study done in China 2.46% of general practitioners had a high level of burnout in all three dimensions' with, 4.83% of

physicians scored high for emotional exhaustion (EE), 6.21% for depersonalization (DP), and 33.99% for personal accomplishment (PA) [49].

In the United Arab Emirates private healthcare providers were at a high level of emotional exhaustion with 34.33 ± 11.87 , reduced personal accomplishment including beliefs of competence and successful achievement at work 32.67 ± 8.01 , and high levels of depersonalization 12.92 ± 7.03 [50].

A cross-sectional study conducted by Odonkor, S.T et al., in Ghana indicated that the prevalence of burnout among health professionals was 9.9% and among the occupations in health institutions nurses had the highest vulnerability in experiencing burnouts followed by Doctors and the least representing radiographers [36]. In a study done in Nigeria 2.9% of nurses had emotional exhaustion (EE), 47.6% had depersonalization (DP) and 53.8% had reduced personal accomplishment (RPA) [37].

In a cross-sectional study conducted in Gondar University Hospital, Ethiopia, the prevalence of burnout among health care professionals was 13.7%. Among the occupations found in these hospital burnout were prevalent in nurses followed by pharmacies [51]

A cross sectional study conducted in eastern Ethiopia in 2020 revealed that the prevalence of burnout among nurses was 44.4%. And 5.3% were high emotional exhaustion, 70.6% were high depersonalization and 74.5% were low personal achievement [52]. Another study done in Amhara regional state, showed that the prevalence of burn out among nurses was 50.4%. Among them 65.3%, scored high level of emotional exhaustion 43.6% scored high level of depersonalization and 44.4% had low personal achievement [53].

The prevalence of burnout among nurse in south west Ethiopia was 34% [54]. A study conducted in Mexico to compare the burnout rates of private and public health institutions determined that the prevalence did not differ between public and private hospitals [55]. Radiologists in public hospital-based practice reported significantly higher levels of work stress, lower levels of job satisfaction and higher rates of burnout. There is a trend towards a higher rate of psychiatric morbidity among radiologists who practice in public hospitals. Radiologists in the public hospital environment experience more work stress, a lower level of job satisfaction and higher rates of burnout compared to private practice [56]. In Mekelle city workers in the private hospitals (65.8%) were more at risk compared to those in the public hospital (44.0%). The lower staff/patient ratio in the private hospitals compared with the public hospital might have contributed to the higher prevalence of burnout syndrome [57].

2.2. Associated factors of burnout among health professionals

2.2.1. Sociodemographic factors

As various reports revealed; sex, marital status, age, educational level, have children were considered as associated factors with the occurrence of burnout in health professionals. female health workers had higher rate of burnout than male. Respondents who were married and have children had higher rates of burnout [36]. Burnout occurred more in the nurses aged less than 35 years, females, those not married and those with nursing certificates as compared to those with nursing degrees [37]. MBI mean scores of nurses when compared to doctors, amongst staff who work 9 hours or more when compared to staff who work 8 hours or less, in health professionals who had training in levels of secondary education and associate degree when compared to staff who had training in master's degree level, on women when compared to men and health professionals who are under 34-group of age when compared to over 45-group of age has been found significantly high in terms of emotional burnout score [58].

2.2.2. Work-related factors

In different studies work- related factors like workload, working experience, long working hours per day, lower level of job satisfaction, workplace violence, using a different medication related to work related health problems, intention to leave a job, working in hospital without enough resources, time spent at home on work-related factors contribute to health professional burnout[44,45,49,52–54]. Nurses working with no work load were 57% less likely for burnout than those who were working in excessive work load. And nurses who had intention to leave their current work were 59% less likely for professional burnout compared to those who had no intention to leave their work [53]. Nurses whose working experience were 11–15 years were almost 15 times more likely to have burnout syndrome than those with experience of 1–3 years[54]. Clerking burdens with (writing of progress notes, ordering labs, prescribing medications), lack of input or control for physicians with respect to issues affecting their work lives decreased control over the work environment, inefficient use of time due to administrative requirements, and loss of support from colleagues are also associated factors with health professional's burnout [59]. Organizational factors like negative leadership behaviors, lack of collaboration ,loss of rewards and opportunities also influence burnout [48,60]. Shift work was associated with burnout and distress in those who were dissatisfied with or who had perceived high impact on the private life of their shift schedule. Compared to non-shift workers, shift workers dissatisfied with their schedule and those experiencing a high impact on private life had significantly higher burnout (range B 1.7–6.3) and distress levels (range B 4.9–6.1). In contrast, satisfied shift workers and those experiencing a low impact of shift schedule had lower burnout (range B –0.2 to –2.2) and no difference in distress levels ($P \geq 0.05$) [61].

Job satisfaction has also association with burnout. In Greece, the best predictors of burnout were found to be satisfaction with workload, satisfaction with training, and satisfaction with pay [62].

2.2.3. Perceived social support

Perceived social support from family friends and significant others play a crucial role in mediation of burnout [63]. Nurses with poor social support were almost 14 times more likely to have burnout syndrome than those with strong social support [54]. Social support (significant other, family, and friends) was negatively correlated to burnout ($P < 0.01$) in nurses [64]. A significant effect for Perceived social support, representing the direct effect of Perceived social support on burnout, suggesting higher scores on Perceived social support results in lower burnout scores [65].

2.2.4. Substance use

To manage their work pressure physicians, use alcohol and drugs and predispose to substance use disorders. Physician burnout is associated with rates of physician substance use disorders [66]. Although, smoking was not significant, but alcohol consumption was positively associated with burnout [67]. And, burnout is associated with elevated risk of alcohol dependence [68]. Drinking to cope was most strongly associated with higher levels of alcohol-related problems and was found to moderate the effect of depersonalization (e.g., cynical and distant attitude toward one's work and the people with whom one works) and gender [69].

2.3. Conceptual framework

The conceptual framework was taken from [70], with modifications.

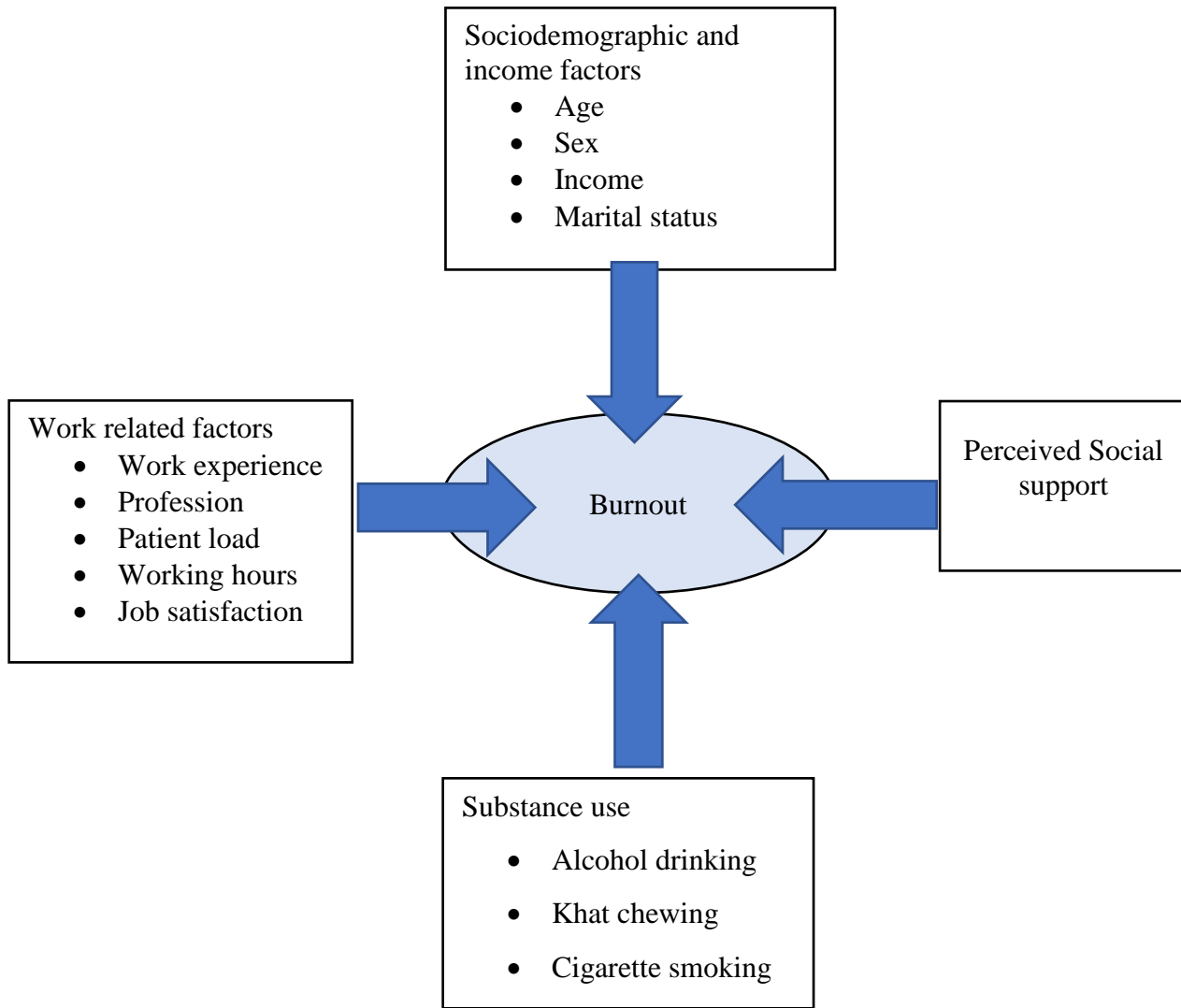


Figure 1: Conceptual framework developed after reviewing different literatures

Research questions

1. What is the magnitude of burnout among health workers in public and private health facilities? Is the magnitude of burnout different among professionals working in private and public health institutions in Jimma zone?
2. What are the associated factors determining burnout in health professionals?

Chapter Three: Objectives

3.1. General objective

To assess burnout and associated factors among health professionals in Jimma zone, southwest Ethiopia, 2022.

3.2 Specific objectives

1. To identify the magnitude of burnout among health professionals working in private and public health institutions in Jimma zone, southwest Ethiopia, 2022.
2. To identify factors associated with burnout among health professionals working in private and public health institutions in Jimma zone, southwest Ethiopia, 2022.

Chapter Four: Methods

4.1. Study Area and Period

Jimma zone is one of the largest zones found in Oromia National Regional State, Southwest Ethiopia. The zone has a total area of 19,293.5 Square kilo meters. It has 17 Districts and 2 town administration. The Zone has a total of 4870 health professional from different disciplines and 526 Health Posts, 122 Health Centers (HCs), and 9 hospitals owned by government and additionally there are 161 private and 12 NGO clinics. The overall potential health service coverage of the Zone by public institutions for year 2008 was 75.5%. Jimma town is the capital and administrative center of the Zone and is located at a distance of 350 km away from the capital of Ethiopia- Addis Ababa

Projected Population for the year 2020/2021 showed that a total of 229,157 inhabitants live in Jimma town. According to Jimma town administration health office there are about 23 governmental health care institutions in Jimma town. Among them one referral hospital, one general hospital, four health centers and 17 health posts, and 3 private hospitals exist. The study was conducted from May 24, 2022 to August 24, 2022.

4.2. Study Design

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

4.3. Population

4.3.1. Source population

All health professionals working in Jimma zone hospitals.

4.3.2. Study population

Selected health professionals working in sampled health institutions of Jimma zone were our study population.

4.4 Eligibility criteria

4.4.1. Inclusion criteria

- All Health professionals (nurses and physicians) available at the time of the study [on duty] were included.

- Health professionals working in public institutions and working part time in private, if the public institution is not selected for this study, they were considered as private worker-were included.

4.4.2. Exclusion criteria

- Government health institution workers, where, there institution is included and work part-time in private health institutions.
- Health professionals with known psychiatric illness.

4.5. Sample Size

4.5.1. Sample size determination

The sample size for this study was calculated using the double population proportion formula, as follows:

$$n = \frac{(p_1(1-p_1) + p_2(1-p_2))}{(p_1 - p_2)^2} * (Z_{\alpha/2} + Z_{\beta})^2$$

Where:

P_1 and P_2 are the sample proportions of the public and private hospitals respectively.

$Z_{\alpha/2}$: is the critical value for normal distribution at 95% confidence interval which is 1.96 at $\alpha = 0.05$.

Z_{β} : is the critical value of the normal distribution at β , the power of 80%, $\beta = 0.2$, and the critical value = 0.84. so based on the above formula we used the prevalence of burnout (from emotional exhaustion) 70% and 60% in public and private health institutions respectively from study of India [71].

$$n_i = \frac{(0.70(1-0.70) + 0.6(1-0.6))}{(0.7-0.6)^2} * (7.84)$$

$$= 184$$

where n_i is an initial sample size.

Since the sample size was manageable, and for the sake of increasing the precision of our data, the investigator decided to take all the samples by including a 10% non-response rate, rather than using the correction formula. So, the final sample size (n_f) was determined as follows.

$$n_f = 184 * 10\% = 18.4 = 184 + 18.4 \text{ and, then}$$

$$n_f = 203 \quad \text{where: } n_f \text{ is was the final sample size}$$

Total sample size was 406 for both public and private health workers.

4.5.2. Sampling Technique

All private hospitals found in Jimma zone were included purposefully. The public hospitals were selected randomly through lottery method, so as to make a one to one with the private institutions in terms of tier

system (hospital – hospital). Then the list of health care professionals was acquired and the samples were allocated based of the number of health professionals working in each institution in both private and public setups.

As indicated, Awetu primary hospital, Fromsis Hospital and Oda hulle Hospital were private health institutions included for this study. Shenen Gibe hospital, Agaro Hospital and Seka hospital are public hospitals to be compared with private institutions. The sampling procedure is summarized in **figure 2**.

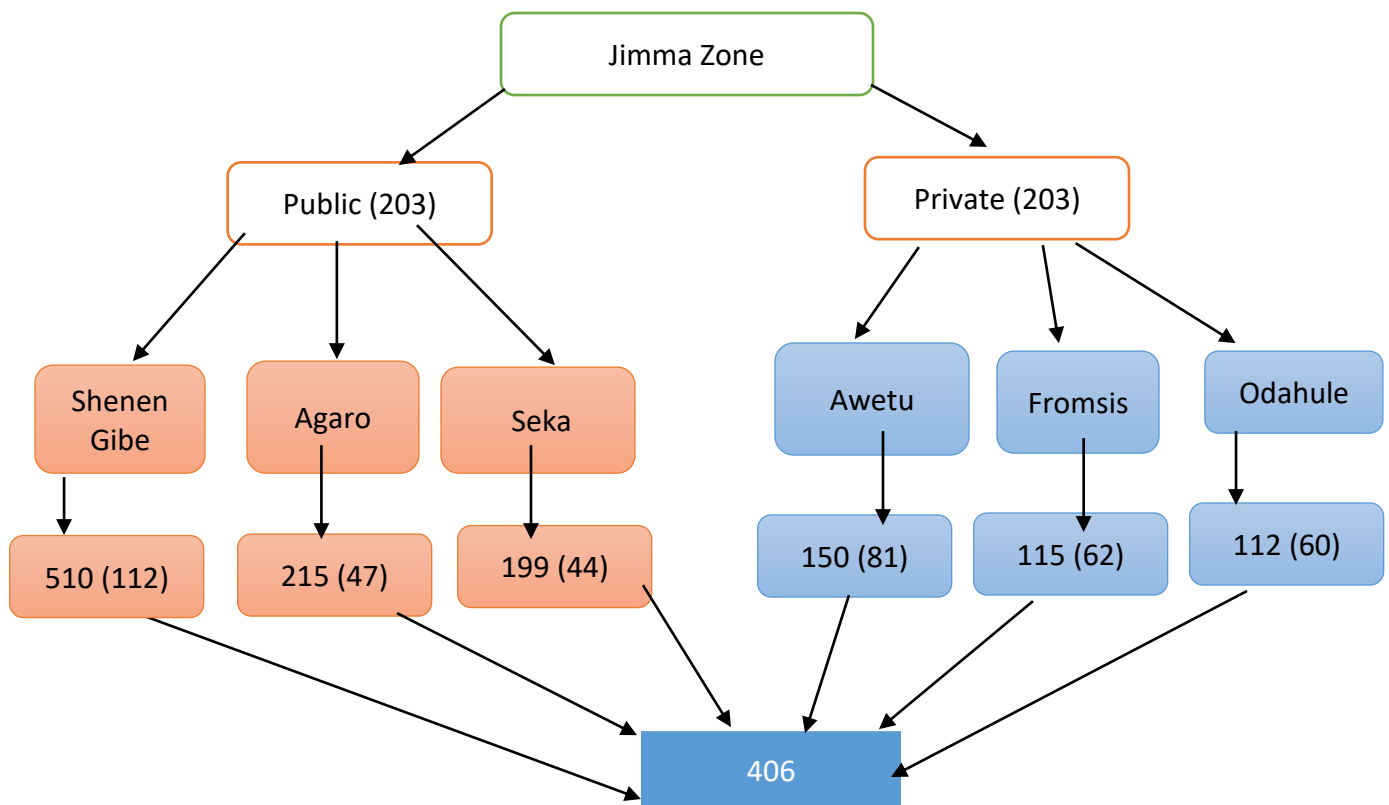


Figure 2: Diagram presentation of sampling procedure used to select study participants from selected public, and private hospitals in Jimma zone Jimma, Ethiopia, 2022.

4.6. Data Collection.

4.6.1. Data collection tools and procedure

Data collection tools included sociodemographic characteristics including workload questions, job satisfaction, and burnout. Job satisfaction was measured by Minnesota job Satisfaction Questionnaire and burnout was assessed by Maslach Burnout Inventory. The Maslach Burnout Inventory is most commonly

used 20-item measuring tool for self-assessment of burnout. Moreover, health professionals habit of substance use was assessed by Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) [72], an 8 item screening tool developed by the WHO. The perceived social support was measured by Multidimensional Scale of Perceived Social Support (MSPSS), a 12-item self-report inventory. It measures perceived social support from family, friends, and significant others [73]. Respondents use a 7-point Likert scale (from very strongly disagree to very strongly agree with each item). The questionnaire was previously tested in Ethiopia for reliability, psychometric, and internal validity. The internal consistency estimate of reliability of test score (Cronbach's alpha) was found to be 0.87 indicating a good construct of questionnaire [74].

The MSQ-short form was composed of twenty questions pertaining to aspects of the work environment. Weighted scores were statistically calculated on the basis of a Likert Scale, 1 being Very Dissatisfied, to 5 being Very Satisfied. Items on the MSQ calculated general satisfaction (questions 1-20), Intrinsic factors (questions 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, & 20), and extrinsic factors (questions 5, 6, 12, 13, 14, & 19). The general job satisfaction less than 60 dissatisfied, greater than or equal to 60 is satisfied

4.6.1. Data collectors.

Six data collectors were selected from health centers in which all were clinical (Diploma level) nurses in the profession to collect data from hospitals and one BSc nurse was selected from Jimma medical center and used as the supervisor in addition to the principal investigator. Data were collected using android based data collection application called ODK V3.1 for data quality.

4.7. Study Variables

4.7.1. Dependent variable

Health professionals Burnout

4.7.2. Independent variables

Socio demographic related (age, sex, marital status, educational status and income, history of chronic illnesses)

Work related variables: profession, work load, shift work, incentives, patient load, and work experience

Perceived social support: low, moderate and high

Substance use (cigarette smoking, alcohol drinking, and Chat chewing)

4.8. Operational and term definitions

Age and monthly income: age and monthly income was dichotomized for statistical feasibility. For both variables mean was calculated and categorized as below and above the mean.

Health professionals; refers to Physicians and Nurses in our study

Educational status: Regrouped as first degree and below (Diploma and first degree) and MD, MSc and above (MD, MSc, Specialty).

Burnout can be defined on the three dimensions, according to the Maslach Burnout Inventory. According to MBI tool if respondents have at least one among the three components they were classified as ‘‘YES’’ and if not as ‘‘NO’’ [75].

Overall score for occupational exhaustion (EE): Occupational exhaustion (burnout) is typically connected to a relationship with work that is perceived as difficult, tiring, and stressful.

Overall score for depersonalization /loss of empathy (DP): Depersonalization or loss of empathy is characterized by a loss of regard for others (clients, colleagues...), and by keeping a greater emotional distance, which is expressed through cynical, derogatory remarks, and even callousness.

Overall score personal accomplishment assessment (PA): The personal accomplishment assessment is a feeling that acts as a ‘‘safety valve’’ and contributes to bringing about a balance if occupational exhaustion and depersonalization occur. It ensures fulfillment in the workplace and a positive view of professional achievements.

Table 1: Burnout dimensions and operationalization

	Dimension	Questions	Low degree	Moderate	High degree
1	Occupational exhaustion (EE)	01, 02, 03, 06, 08, 13, 14, 16, 20	EE<17	EE=18-29	EE>30
2	Depersonalization (DP)	05. 10. 11. 15. 22	DP<5	DP=6-11	DP>12
3	Personal accomplishment assessment (PA)	04. 07. 09. 12. 17. 18. 19. 21.	PA<33	PA=34-39	PA>40

Scores less than mean value were considered low scores for EE and DP subscales, and score greater than mean value were considered high score for PA subscale.

Perceived social support: A total score was calculated by adding all the scores from each item and then divided by 12. The subscale scores were calculated by finding the mean of various items form a subscale. For example, Significant Other (SO) Subscale was generated by addition of score of items 1, 2, 5, & 10, Friends Subscale (FRI) by adding together items 6, 7, 9, & 12 and Family Subscale (FAM) by adding together items 3, 4, 8, & 11, and then the sum of each sub-scale was divided by 4. A mean total scale score ranging from 1 to 2.9 was considered as low support, a score of 3 to 5 was considered as moderate support while a mean score from 5.1 to 7 was considered as high support.

Workload :The workload of health professionals was defined as the ratio of health professionals in the specific department compared with the number of patients getting service in that specific department [75].

The overall score of all subscales was used to calculate overall job satisfaction. Then, to assess each individual's level of job satisfaction, respondents who scored more than 60 on the sum of all satisfaction scale items were considered satisfied with their job. Those who scored 60 or lower were considered dissatisfied. The sum score of each variable under domains value of 60 was used as a cut point value to determine whether a health worker was satisfied with his or her job. As a result, healthcare professionals who scored 60 or less were considered dissatisfied, while those who scored more than 60 were considered satisfied [76].

Substance use

- **Low risk for substance use related problems** - score for smoking and chewing is between 0 and 3 but up to 10 for alcohol [72].
- **Moderate risk for substance use related problems** - score for smoking and chewing is between 4 and 26, but between 11 and 26 for alcohol [72].
- **High risk for substance use related problems** - if the score is above 27 [72].

4.9. Data Processing and Analysis

Data were collected using self-administered questioner and entered into EpiData software version 4.6.1 then exported to SPSS version 26.0 software for statistical analysis. The data was also checked; for its distribution and outliers before analysis. Participant characteristics were summarized using descriptive statistics. It was processed by using descriptive analysis, including frequency distribution and cross tabulation. Student's t-test was used to compare level of burnout in government and private health institutions.

An individual is said to be in burnout if he/she is high in emotional exhaustion or depersonalization and low regarding personal accomplishment [77]. First, the individual status was dichotomized (as yes and no), and logistic regression was performed. The association of independent variable with burnout was investigated by using bivariate logistic regression. All independent variables with p-value ≤ 0.25 in bivariate logistic analysis was fitted in to multivariate logistic regression to identify independently associated factors in the final model. The degree of association was interpreted by using ORs with 95% CI and $P \leq 0.05$ was considered as a statistically significant.

4.10. Data Quality Management

One-day training on the contents of the questionnaire, data collection techniques, and research ethics was given for data collectors. Pretest of the questionnaire was conducted in 5% study subjects at Mizan Tepi General Hospital two weeks prior to actual data collection and adjustment on additional preparations was made. During the actual data collection period, the questionnaire was checked for completeness every night after data collection.

4.11. Ethical Consideration

Ethical clearance was obtained from the Institutional Review Board (IRB) of Jimma University, Faculty of Public health, Department of Health Policy and Management with a reference number of **JHRPGD/797/22**. Each study participant was informed about the research, their right to abandon the involvement at any time and confidentiality of information was maintained during data collection,

analysis, interpretation and publication of results. Findings were communicated in aggregated form and individual information was kept confidentially. The research was undertaken in environmentally friendly and had no effect on the environment. The culture, religion and society values were highly respected in every concern during data collection. During data collection precaution was taken to prevent Covid-19 infection.

4.12. Plan for Dissemination of Results

The finding of the study will be disseminated to relevant stakeholders like Jimma University, Jimma zone health office, selected public hospitals, and private hospitals, Jimma university post graduate study. Furthermore, all attempts will be made to present the findings to a scientific conference, and an attempt will be made to publish the finding.

Chapter Five: Results

5.1. Socio-demographic characteristics of the study participants.

A total of 406 participants were involved in this study, yielding a response rate of 100%. Almost two-third of the respondents were males. The mean age of respondents was 30.16 (± 7.28) years. The educational status varied from Diploma to specialty, and above where, 61% had first degree. About 10% of the respondents had specialty and above trainings. In case of profession, about 78% of the respondents were nurses, and only twenty two percent of them were physicians. The perceived social support of the respondents was moderate for about 50%. Sixty-nine percent of health professional in public hospitals and 53% in private hospitals were married (table 2).

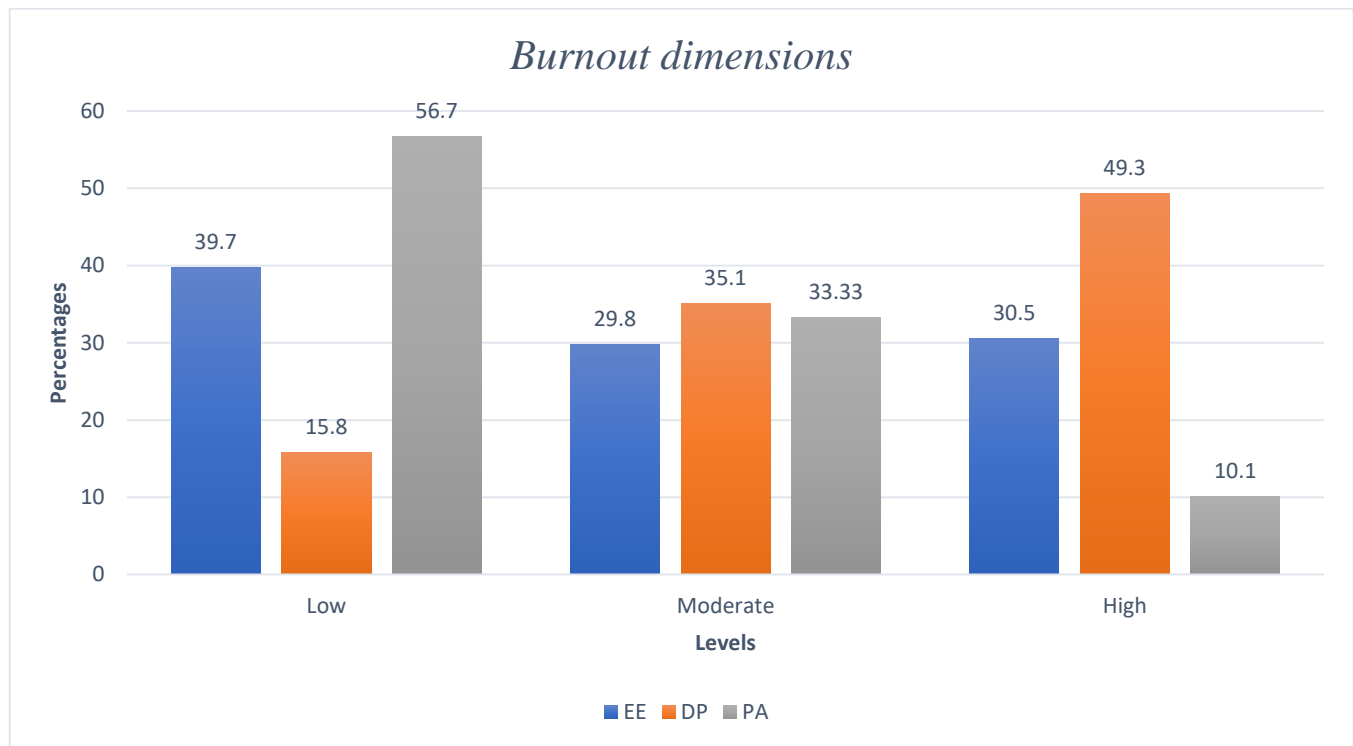
Table 2: Socio-demographic and other characteristics of study participants in public hospitals, and private hospitals of Jimma zone health professionals, 2022

Variable	Category	Public Hospital n (%)	Private Hospital n (%)	Total n (%)
Sex	Male	132 (65.02)	124 (66.01)	266 (65.52)
	Female	71 (34.98)	69 (33.99)	140 (34.48)
Marital status	Single	63 (31.03)	95 (46.80)	158 (38.92)
	Married	140 (68.97)	108 (53.20)	248 (61.08)
Educational status	diploma	18 (8.87)	62 (30.54)	80 (19.70)
	degree	148 (72.91)	100 (49.26)	248 (61.08)
	Masters	8 (3.94)	4 (1.97)	12 (2.96)
	MD	10 (4.93)	18 (8.87)	28 (6.90)
	Specialty & above	19 (9.36)	19 (9.36)	38 (9.36)
Profession	Nurse	159 (78.33)	157 (77.34)	316 (77.83)
	Physician	44 (21.67)	46 (22.66)	90 (22.17)
Perceived social support	Low	29 (14.29)	27 (13.30)	56 (13.79)
	Moderate	97 (47.78)	105 (51.72)	202 (49.75)
	High	77 (37.93)	71 (34.98)	148 (36.45)
Significant others	Low	30 (14.78)	31 (15.27)	61 (15.02)
	Moderate	122 (60.10)	109 (53.69)	231 (56.90)
	High	51 (25.12)	63 (31.03)	114 (28.08)
Friends support	Low	30 (14.78)	27 (13.30)	57 (14.04)
	Moderate	113 (55.67)	104 (51.23)	217 (53.45)
	High	60 (29.56)	72 (35.47)	132 (32.51)
Family support	Low	30 (14.78)	27 (13.30)	57 (14.04)
	Moderate	88 (43.35)	93 (45.81)	181(44.58)
	High	85 (41.87)	83 (40.89)	168 (41.38)
Job satisfaction	Satisfied	31 (15.27)	32 (15.76)	63 (15.52)
	Not satisfied	172 (84.73)	171(84.24)	343 (84.48)
Substance use	Yes	71 (35.0)	75 (37.0)	146 (36.0)
	No	132 (65.0)	128 (63.0)	260 (64.0)

5.2. Burnout among health professionals.

Burnout disaggregated to the three domains shown in figure 3. High level of burnout was observed in 30.5%, 49.3% and 56.7% for occupational exhaustion, Depersonalization, Personal accomplishment assessment subscales respectively. Whereas low level of burnout was seen in 39.7%, 15.8%, and 10.1% for the three dimensions (occupational exhaustion, Depersonalization, Personal accomplishment assessment respectively). The overall level of burnout for professionals those are working in selected public hospitals, and private hospitals found in Jimma zone was 53%.

The prevalence of burnout among nurses was 52.8%, and the prevalence among physicians was 53.3% which is almost similar (**figure 3**).



Key: DP: Depersonalization, EE: occupational exhaustion, PA: Personal accomplishment assessment

Figure 3: Dimensions of burnout and the levels as low, moderate and high (n=406)

5.3. Comparison between public and private

About half (50.2%) of the health professionals working in government (public) hospitals, and more than half (56%) of health workers in private hospital have burnout towards their job (**table 3**).

Table 3: Comparison between private and public hospitals by burnout levels, Jimma Zone hospitals 2022:

Dimension	Category	Public Hospital n (%)	Private Hospital n (%)	Total n (%)
Occupational exhaustion	Low	78 (38.42)	83 (40.89)	161 (39.66)
	Moderate	58 (28.57)	63 (31.03)	121 (29.80)
	High	67 (33.00)	57 (28.08)	124 (30.54)
Depersonalization	Low	30 (14.78)	34 (16.75)	64 (15.76)
	Moderate	69 (33.99)	73 (35.96)	142 (34.98)
	High	104 (51.23)	96 (47.29)	200 (49.26)
Personal accomplishment	Low	144 (70.94)	152 (74.88)	296 (72.91)
	Moderate	38 (18.72)	31 (15.27)	69 (17.00)
	High	21 (10.34)	20 (9.85)	41 (10.10)
Burnout (overall)	No	101 (49.8)	90 (44.3)	191 (47)
	Yes	102 (50.2)	113 (55.7)	215 (53)

Apart from the descriptive statistics, we run independent sample t-test to investigate if there was significant difference between public and private hospital workers in terms of burnout dimensions. The mean of EE, DP and PA was compared to see if there are differences. Generally, there was no significant difference between public and private hospital workers by all three dimensions. Based on our findings the p value is greater than 0.05 in all three cases, which indicates no significant difference (table 4).

Table 4: Independent t-test to detect the difference between public and private hospital workers, Jimma Zone hospitals 2022.

Dimension	Category	Observations	Mean (SE)	P-value
occupational exhaustion	Public	203	23.34(0.87)	0.303
	Private	203	22.09(0.84)	
	Difference		1.25 (1.21)	
Depersonalization	Public	203	12.46(0.49)	0.358
	Private	203	11.82(0.48)	
	Difference		0.64 (0.69)	
Personal accomplishment assessment	Public	203	26.48(0.76)	0.425
	Private	203	27.31(0.69)	
	Difference		-0.82 (1.03)	

SE: Standard error

5.4. Factors Associated with burnout among health professionals

To determine the association of each independent variable with burnout, bivariate logistic regression was performed between burnout (dependent variable) and selected factors (independent variable). To identify the associated factors of burnout, we used a p-value ≤ 0.25 as a criterion to select a variable are said to be a candidate for multivariate logistic regressions. Thus, marital status, monthly income, perceived social support, ever tobacco use, ever alcohol use and job satisfaction were associated variables with burnout and candidate variables for multivariate analysis by having a p-values of less or equal to 0.25.

Further analysis was done in multivariate to determine the significance as well, as to calculate the adjusted odds ratio at a significance level of 0.05. From the multivariate logistic regression analysis, Marital status of respondents, monthly Income, perceived social support, and Job satisfaction were the variables those were significantly associated with dependent variables, or they are considered as a predictor of the health professionals burnout status (**table 5**).

Table 5: Bivariate and Multivariate logistic regression showing associated factors of burnout among health professionals in Jimma zone hospitals, 2022

Variable	Category	COR (95% CI)	AOR (95% CI)	P
Sex	Male			--
	Female	1.25 (0.83,1.886)		--
Marital status of respondents	Single	1		1
	Married	1.42 (0.95, 2.12)	1.47(1.03, 2.28)	0.042
Age	≤ 30 Years			--
	>30 years	1.16 (0.78 ,1.74)		--
Educational status	BSc and below			--
	MD, MSc and above	0.96 (0.58, 1.57)		--
Income	<10,500 Birr	1		1
	>10,500 Birr	1.39 (0.81, 2.41)	2.14 (1.17, 3.89)	0.013*
Profession	Nurse			--
	Physician	0.98 (0.61, 1.57)		--
Perceived social support	Low	1		1
	Moderate	0.33 (0.17, 0.64)	0.33 (0.17, 0.64)	0.001*
	High	0.21 (0.15, 0.41)	0.19 (0.09, 0.41)	<0.0001*
Tobacco use	Yes	1		1
	No	1.53 (0.81, 2.89)	1.17(0.56, 2.43)	0.672
Alcohol use	Yes	1		1
	No	1.86 (1.07, 3.25)*	1.44(0.76, 2.71)	0.258
Job satisfaction	Satisfied	1		1

Not satisfied	3.06 (1.67, 5.61)	2.87(1.51, 5.47)	0.001*
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*candidate for multivariate analysis.

In multiple logistic regression analysis, monthly income >10500 [AOR=2.14, CI (1.17-3.89)], moderate perceived social support [AOR=0.33, CI (0.17-0.64)], high perceived social support [AOR=0.19, CI (0.09-0.41)], and not satisfied with the job [AOR=2.87, CI (1.51-5.47)] were significantly associated variables with the presence of burnout. This means that, the health professionals those have monthly income > 10500 have two times more burnout when compared to their counter parts (P=0.013, AOR=2.14,95%CI:1.17-3.89).

Health care professionals who were married have about two times more burnout as compared health professionals those were single (P=0.042, AOR=1.47,95%CI:1.03-2.28).

Health care professionals who have moderate social support have 67% less burnout as compared to health care professionals who have low perceived social support (P=0.001, AOR=0.33,95%CI: 0.17-0.64).

Health care professionals those have job dissatisfaction have about three times burnout as compared to Health care professionals those have those have job satisfaction (P=0.001, AOR=2.87,95%CI:1.51-5.47).

Chapter Six: Discussion

This institutional based comparative cross-sectional study, sought to assess the magnitude of burnout. It is found that there was no statistically significant difference between public and private hospital workers in terms of burnout. We also investigated associated factors of burnout, it was found that, monthly income >10500 [AOR=2.14, CI (1.17-3.89)], moderate perceived social support [AOR=0.33, CI (0.17-0.64)], high perceived social support [AOR=0.19, CI (0.09-0.41)], and not satisfied with the job [AOR=2.87, CI (1.51-5.47)] were significantly associated with the presence of burnout among health professionals working in Jimma zone hospitals.

Overall the prevalence of burnout was 53%. Dimensions also revealed high burnout was observed in 30.5%, 49.3% and 56.7% for EE, DP, PA subscales respectively. Ample of studies conducted elsewhere previously. In a study done in Europe, 43% of doctors scored high for emotional exhaustion 35% for depersonalization and 32% for personal accomplishment, with 12% scoring high burnout in all three dimensions [44]. In the current study physicians had 27.8%, 40%, 52.2% high score for emotional exhaustion, depersonalization and personal accomplishment. With fluctuations in these three dimensions, the findings are more or less consistent. Moreover, a study on Neurosurgery Residents in the United States showed that burnout was prevalent in 36.5% of residents with 32.5% having high EE (emotional exhaustion) and 21.6% experiencing high DP (depersonalization) and 87.1% have high PA (personal accomplishment) [45]. A cross-sectional study done on physicians in Saudi Arabia showed that 53.5% of physicians scored high for emotional exhaustion (EE), 38.9% for depersonalization (DP), and 28.5% for personal accomplishment (PA), with 2.78% scoring high burnout in all three dimensions [46]. In a cross-sectional study done in Syria among resident physicians, 646 (19.3%) had a high level of burnout in all three dimensions' and 3140 (93.75%) had a high level of burnout in at least one domain. And the subscale showed 77.9% of physicians had a high level of EE 54.6% had a high level of DP and 13.7% had a low level of PA [47].

In a study conducted by Quattrin, R et al., in northeastern Italia among nurses working in oncology 35% of the nurses had a high level of emotional exhaustion, 17% had a high level of depersonalization, and 11% had a high level of personal achievement [48]. According to Gan, Y et al. study done in China 2.46% of general practitioners had a high level of burnout in all three dimensions' with, 4.83% of physicians scored high for emotional exhaustion (EE), 6.21% for depersonalization (DP), and 33.99% for

personal accomplishment (PA) [49]. The variations could be due to population sample size and study design differences.

In Ethiopia, the prevalence of burnout for different health professionals and at different areas was studied. In a cross-sectional study conducted in Gondar University Hospital, Ethiopia, the prevalence of burnout among health care professionals was 13.7% [51]. A cross-sectional study conducted in eastern Ethiopia in 2020 revealed that the prevalence of burnout among nurses was 44.4%. And 5.3% were high emotional exhaustion, 70.6% were high depersonalization and 74.5% were low personal achievement [52]. Another study done in Amhara regional state, showed that the prevalence of burnout among nurses was 50.4% which is comparable with our study. Among them 65.3% scored high level of emotional exhaustion 43.6% scored high level of depersonalization and 44.4% had low personal achievement [53]. In the current study 31.3%, 51.9%, and 57.9% of nurses had high score for emotional exhaustion, depersonalization and personal accomplishment.

In the current study, there was no significant difference between public and private hospital workers by all three dimensions. A study conducted in Mexico to compare the burnout rates of private and public health institutions determined that the prevalence did not differ between public and private hospitals [55]. Radiologists in public hospital-based practice reported significantly higher levels of work stress, lower levels of job satisfaction and higher rates of burnout. There is a trend towards a higher rate of psychiatric morbidity among radiologists who practice in public hospitals. Radiologists in the public hospital environment experience more work stress, a lower level of job satisfaction and higher rates of burnout compared to private practice [56]. In Mekelle city workers in the private hospitals (65.8%) were more at risk compared to those in the public hospital (44.0%). The lower staff/patient ratio in the private hospitals compared with the public hospital might have contributed to the higher prevalence of burnout syndrome [57].

In the current study higher monthly income was associated with higher score for burnout. Contrary to this finding, a study in Chinese nurses reported lower monthly income predisposes to burnout [78]. It added the lower monthly income the nursing staff gets, the higher the degree of depersonalization. This relationship as stated the Chinese study, may be because nurses who stay at a lower level of income do not have high living expenses and standards of consumption; therefore, the pressure from the economic aspect of life influences their level of personalization. On the other hand, higher monthly income means there will be associated higher burden, committing more time at work which may increase the likelihood of burnout. Studies also reported lower income professional had better social support, which in turn decreased the risk of burnout [79].

Perceived social support appeared to a predictor of burnout in the current study. Perceived social support from family friends and significant others play a crucial role in mediation of burnout [63]. Nurses with poor social support were almost 14 times more likely to have burnout syndrome than those with strong social support [54]. Social support (significant other, family, and friends) was negatively correlated to burnout ($P < 0.01$) in nurses [64]. It was found that, the significant effect for Perceived social support, representing the direct effect of Perceived social support on burnout, suggesting higher scores on Perceived social support results in lower burnout scores [65].

In this study job satisfaction is associated with burnout. Health professionals who were not satisfied with his/her job were predisposed to burnout. Several previous studies investigated the relationship between burnout and job satisfaction, implicating that there is bidirectional relationship [80]. Higher level of burnout will predispose to decreased job satisfaction. And lower job satisfaction predisposes to burnout. Job satisfaction appeared important predictor of emotional exhaustion, when satisfaction is low (OR 3.02, 95% confidence interval 2.39–3.81), emotional exhaustion is most likely. Although significant, job satisfaction was less important in predicting depersonalization and personal accomplishment [81]. Job satisfaction is a concept that includes wage, working time, work environment, peer relationship, employment stability, benefits, education/training, and client relationship. In general, the interaction of such factors may lead to a demoralizing self-perception among health professionals. This negative self-perception can lead to poor quality of service as health professionals experience high workloads with little reward and social engagement, which in turn, leads to high levels of stress and ultimately burnout [82].

6.1. Strength and limitations

Though the present study has excellent response rate and conducted using standardized tool as strength it has some limitations like it included only nurses and physicians.

Chapter Seven: Conclusions and Recommendations

7.1. Conclusion

Overall the magnitude of burnout among health professionals of Jimma Zone was high (53%). The prevalence of burnout among nurses was 52.8%, and among physicians was 53.3%. There was no statistically significant difference in the rates of burnout among health professionals working in private and public health institutions in Jimma zone, southwest Ethiopia, 2022. Higher monthly income which have been linked with more job-related activities and related stress increased the likelihood of burnout. The level of perceived social support is an important factor associated with burnout. Moderate and high level of perceived social support negatively associated with burnout. Health care professionals satisfied with their job have less risk of burnout.

The Ethiopian government and civic societies working for betterment of civil servants should give due emphasis to burnout of health problems. Both private and public hospital workers, as well as nurses and physicians are affected; future interventions should focus on such groups. Perceived social support and job satisfaction are important areas to intervene. Both institutional and community-based plans to promote social support of health professionals should be one of the priorities of interventions. Increasing job satisfaction of health professionals should be another priority as well. A finding of this study like the role of monthly income needs further evaluation. Future studies should evaluate the role of monthly income on burnout with better design and causality.

7.2. Recommendations

Based on the finding of the study the following important recommendation is forward respective body

For private hospitals

- Private hospital owners and administrators should give due emphasis to their workers to increase job satisfaction

For jimma zone health office

- Jimma zone health office should give emphasis to increase number of health care professionals to reduce workload and
- Jimma zone hospitals administrators should give due emphasis to their workers to increase job satisfaction

For Oromia health bureau and ministry of health

- The ministry and bureau should focus to increase human resource at hospital level and asses the needs of healthcare providers to increase job satisfaction in order to increase the quality of health care delivery.

For researchers

- Further studies, should be considered to explore the needs of health professionals and to identify types of interventions that will have a positive impact on the need of healthcare professionals.
- And also researches should consider burnout in the area among other health professionals other than physician and nurses.

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Annexes

I. Consent Form

Code of study subject _____

I have been informed about a study plan that is entitled with “*Burnout and associated factors among health professionals in Jimma town health institutions, southwest Ethiopia*” and for this purpose some information will be taken from me. The aims of this study were explained to me.

I am also informed that all the information contained within the questionnaire is to be kept confidential. Moreover, I have also been well informed of my right to keep hold of information, decline to cooperate and make myself withdraw from the study.

It is therefore with full understanding of the situation that I gave the informed consent voluntarily to the researcher to use the information taken from me for the investigation. Moreover, I have had the opportunity to ask questions about it and received clarification to my satisfaction.

Signature (participant) _____ Signature (investigator) _____

Witness name _____ Signature _____

II. Data collection tools

Part I Socio Demographic characteristics

Variables	Response category
Sex	1, Male 2. Female
Age	_____
Marital status	1. Single 2. Married 3. Divorced 4. Widowed
Educational status	1. Diploma 2. Bsc Degree 3. MD 4. above
Profession	_____
Monthly Income	_____ birr

Minnesota Satisfaction Questionnaire (MSQ)

Ask yourself: How satisfied am I with this aspect of my job?

5 = Extremely Satisfied 4 = Very Satisfied

3 = Satisfied

2 = Somewhat Satisfied 1 = Not Satisfied

		1	2	3	4	5
1	Being able to keep busy all the time					
2	The chance to work alone on the job					
3	The chance to do different things from time to time					
4	The chance to be “somebody” in the community					
5	The way my boss handles his/her workers.					
6	The competence of my supervisor in making decisions.					
7	Being able to do things that don’t go against my conscience					
8	The way my job provides for steady employment					
9	The chance to do things for other people					
10	The chance to tell people what to do					
11	The chance to do something that makes use of my abilities.					
12	The way company policies are put into practice .					
13	My pay and the amount of work I do.					
14	The chances for advancement on this job.					
15	The freedom to use my own judgment .					
16	The chance to try my own methods of doing the job					
17	The working conditions .					
18	The way my co-workers get along with each other.					
19	The praise I get for doing a good job					
20	The feeling of accomplishment I get from the job.					

Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the “1” if you **Very Strongly Disagree**

Circle the “2” if you **Strongly Disagree**
 Circle the “3” if you **Mildly Disagree**
 Circle the “4” if you are **Neutral**
 Circle the “5” if you **Mildly Agree**
 Circle the “6” if you **Strongly Agree**
 Circle the “7” if you **Very Strongly Agree**

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

SCALES

Family: 3, 4, 8, 11

Friends: 6, 7, 9, 12

Significant Other: 1, 2, 5, 10

The Maslach Burnout Inventory

How do you perceive your work? Are you exhausted? How capable are you of shaping your relationship to others? To what degree are you personally fulfilled?

Indicate how frequently the following statements apply to you and add the points indicated on top of the respective box:

- 0 = Never
- 1 = At least a few times a year
- 2 = At least once a month
- 3 = Several times a month
- 4 = Once a week
- 5 = Several times a week
- 6 = Every day

	Never Every day						
	↓	0	1	2	3	4	5
01 – I feel emotionally exhausted because of my work							
6							
02 – I feel worn out at the end of a working day							
03 – I feel tired as soon as I get up in the morning and see a new working day stretched out in front of me							
04 – I can easily understand the actions of my colleagues/supervisors							
05 – I get the feeling that I treat some clients/colleagues impersonally, as if they were objects							
06 – Working with people the whole day is stressful for me							
07 – I deal with other people’s problems successfully							
08 – I feel burned out because of my work							
09 – I feel that I influence other people positively through my work							
10 – I have become more callous to people since I have started doing this job							
11 – I’m afraid that my work makes me emotionally harder							
12 – I feel full of energy							
13 – I feel frustrated by my work							
14 – I get the feeling that I work too hard							
15 – I’m not really interested in what is going on with many of my colleagues							
16 – Being in direct contact with people at work is too stressful							
17 – I find it easy to build a relaxed atmosphere in my working environment							
18 – I feel stimulated when I been working closely with my colleagues							
19 – I have achieved many rewarding objectives in my work							
20 – I feel as if I’m at my wits’ end							
21 – In my work I am very relaxed when dealing with emotional problems							

22 – I have the feeling that my colleagues blame me for some of their problem

ASSIST

Question 1

In your life, which of the following substances have you ever used (non-medical only)	Yes	No
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)		
Alcoholic beverages (beer, wine, spirits, etc.)		
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)		
Other (specify)		

If "No" to all items, stop interview or if "Yes" to any of these items, ask Question 2

Question 2

In the past three months how often do you use the substances you mentioned?	0 Never	2 Daily or twice	3 Monthly	4 Weekly	5 Daily/ almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)					
Other (specify)					

If "Never" to all items in Question 2, skip to Question 6. If any substances in Question 2 were used in the previous three months, continue Questions 3, 4 & 5 each substance each substance used.

Questions 3

During the past three months past how often have you had a strong desire or urge to	0 Never	3 Daily/ twice	4 Monthly	5 Weekly	6 Daily/ almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)					
Other (specify)					

Question 4

During the past three months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial problems?	0 Never	4 Once or Twice	5 Monthly	6 Weekly	7 Daily or Almost Daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)					
Other – specify:					

Question 5

During the past three months how often have you failed to do what was normally expected to do because of your use of (FIRST DRUG, SECOND DRUG, etc.?)	0 never	5 Ones/ twice	6 mo nthl y	7 we ekl y	8 Daily/ almos t daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)					
Alcoholic beverages (beer, wine, spirits, etc.)					
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)					
Other (specify)					

Questions 6

Has a friend or relative or anyone else ever expressed concern about your use of (FIRST DRUG, SECOND DRUG, etc.?)	0 neve r	6 Yes, in the past 3months	3 Yes, but not in the past 3months
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)			
Alcoholic beverages (beer, wine, spirits, etc.)			
Amphetamine type stimulants (speed, diet pills, ecstasy, etc.)			
Other (specify)			

Questions 7

Have you ever tried and failed to control, cut down or stop using (FIRST DRUG, SECOND DRUG, etc.)	0 No never	6 Yes, in the past 3 months	3 Yes but not in the past three months
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)			
Alcoholic beverages (beer, wine, spirits, etc.)			
Amphetamine type stimulants (speed, diet pills, ecstasy...)			
Other (specify)			

Question 8

Have you ever used drug by injection in the past three months?	0 never	2Yes, in the past three months	1 Yes but not in the past three months
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