

**Burnout level and its Associated Factors among Physicians Working  
in Public Hospitals of Southern Nations, Nationalities and Peoples'  
Regional State, Ethiopia**

**By: Taju Lerago**

**A research thesis submitted to Jimma University Institute of Health, Faculty of  
Public Health, Department of Health Economics, Management and Policy for  
the Partial Fulfillment of the Requirement for Master of Public Health in  
Health Services Management (MPH-HSM)**

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## Abstract

**Background:** Burnout is a common syndrome seen in healthcare workers, particularly physicians who are exposed to a high level of stress at work; it includes emotional exhaustion, depersonalization, and low personal accomplishment. Burnout among physicians has garnered significant attention because of the negative impact it renders on patient care and medical personnel. Physicians who had high burnout levels reportedly committed more medical errors.

**Objectives:** To assess level of burnout and its associated factors among physicians working in public hospitals of Southern Nations, Nationalities and Peoples' Regional State, 2017.

**Methods:** Institution based cross-sectional study was conducted using structured self-administered questionnaires from March 13 to April 11, 2017. Maslach's Burnout Inventory Human Services Survey was used to measure burnout among physicians in all public hospitals of Southern Nations, Nationalities and Peoples' Regional State. Collected data were entered in to Epi Data version 3.1, and transferred to SPSS version 21 software. Descriptive statistics, bi-variate and multivariable linear regression analysis were performed. P-value less than 0.05 was used to determine an association between independent and dependent variables.

**Result:** Four hundred ninety one respondents were participated with a response rate of 91%. Burnout level was measured in three dimensions including emotional exhaustion, depersonalization and personal accomplishment with 65.2% (95% CI: 61.1, 69.7) high, 85.1% (95% CI: 81.7, 87.9) high and 91% (95% CI: 88.6, 93.3) low respectively. The burnout level is high in all the three dimensions. Age ( $\beta$ : -0.007, 95% CI: -0.011, -0.003), receiving recognition from hospital managers ( $\beta$ : -0.047, 95% CI: -0.091, -0.004) and monthly salary ( $\beta$ : -0.012, 95% CI: -0.016, -0.007) were negatively associated with emotional exhaustion score. On the other hand, number of patients observed per week ( $\beta$ : 0.001, 95% CI: 0.001, 0.003) was positively associated with emotional exhaustion score. Age ( $\beta$ : -0.011, 95% CI: -0.015, -0.006), working in primary hospital ( $\beta$ : -0.068, 95% CI: -0.102, -0.033), having any support from family and organization ( $\beta$ : -0.074, 95% CI: -0.104, -0.044), monthly salary ( $\beta$ : -0.014, 95% CI: -0.019, -0.008) and getting professional training ( $\beta$ : -0.032, 95% CI: -0.062, -0.003) were negatively associated with depersonalization score. Monthly salary ( $\beta$ : 0.004, 95% CI: 0.001, 0.007) was positively associated with personal accomplishment score. Whereas working in primary hospital ( $\beta$ : -0.077, 95% CI: -0.106, -0.049) was negatively associated with personal accomplishment score.

**Conclusion:** Burnout was measured in three dimensions and it was found in a high level among physicians currently working in public hospitals of Southern Nations, Nationalities and Peoples region. Receiving recognition from hospital managers, age, working in primary hospital, monthly salary, having any support from family and organization, and getting professional training can possibly minimize the level of burnout among physicians in the region. On the contrary, increase in the number of patients observed per week increases burnout. All the concerned bodies like southern nations, nationalities and peoples' regional state health bureau, federal ministry of health and hospital managers should work collaboratively to decrease the risk of burnout by addressing the contributing factors identified by this study.

**Key words:** Burnout, Physicians, Public Hospitals

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## **Acronyms**

CSA- Central Statistical Agency

DP- Depersonalization

EE- Emotional Exhaustion

EGPRN- European General Practice Research Network

GP- General Practitioner

ICU- Intensive Care Unit

IRB- Institutional Review Board

MBI- HSS- Maslach's Burnout Inventory-Human Services Survey

MCH- Maternal and Child Health

MD- Medical Doctor

OPD- Out Patient Department

PA- Personal Accomplishment

RHB- Regional Health Bureau

SNNPRS- Southern Nations Nationalities and Peoples' Region State

UAE- United Arab Emirates

UK- United Kingdom

US- United States

## **Chapter One: Introduction**

### **1.1. Background**

Burnout is a psychological term for the experience of long-term exhaustion and diminished interest. Despite this, burnout is not a recognized disorder in the Diagnostic and Statistical Manual of Mental Disorders [1]. It was first described in the mid-1970s by Freudenberg and ever since it has been the subject of many studies [2]. Burnout is considered as an epidemic of modern society and the issue of occupational stress. The emphasis of burnout is now increasing world widely. Burnout focuses on specific stressors in the workplace and the environmental pressures affecting the health of employed people [3]. Healthcare workers, particularly physicians, are exposed to high levels of distress at work. Persistent tension can lead to exhaustion, psychological, and/or physical distress. Moreover, burnout syndrome may increase the risk of medical errors and decrease job satisfaction, which incites early retirement [4].

Burnout has three interrelated dimensions: emotional exhaustion (EE), depersonalization (DP), and low personal accomplishment (PA). Prolonged exposure to stress is usually the main cause of emotional exhaustion and it manifests through the loss of enthusiasm for work, feeling helpless, trapped, and defeated. Depersonalization occurs when physicians treat patients indifferently, objectify them, and develop a negative attitude toward their colleagues and profession. Inefficiency, or the lack of a sense of personal achievement, is characterized by the individual's withdrawal from responsibilities and detachment from the job [5].

The level of burnout among physicians varies in different studies conducted in different regions of the world. Study conducted by Chopra *et al.*, described high level of burnout among physicians by reporting 46% to 80% of physicians with moderate to high levels of emotional exhaustion, 22% to 93% of them with moderate to high levels of depersonalization and 16% to 79% of them with moderate to low level of personal achievement [6].

From developed countries context, severe burnout syndrome was presented in 25% - 70% of physicians [7]. In relation to developing countries context, there was also reported high levels of burnout syndrome in healthcare professionals. For example, from Africa, up to two thirds of healthcare workers suffer from burnout, mostly due to emotional exhaustion [8].

Burnout syndrome can have a detrimental effect on employee satisfaction, work productivity, mental and physical health, rates of absenteeism and staff turnover and can affect family roles and functions [9].

Work place behaviors such as burnout and stress at work are well researched in developed countries but they are not clearly researched in developing countries particularly in Africa due to different constraints. It is also true that employees that are happy with their work are highly motivated and more productive than other employees that are over exhausted and experiencing high level of burnout which in turn results in reduction of services to customers [10-12].

Employees who are burned-out lack the energy to work adequately and poorly succeed on their work. Usually, they are over-exposed to work-related stressors, and experience feelings of exhaustion. In order to cope with these stresses, they develop a distant, negative attitude towards work (cynicism) and/or towards the people with whom they work [2].

## **1.2. Statement of the Problem**

Burnout is an increasing problem among medical staff and is highly prevalent in health-care settings. It is associated with difficult working conditions and feelings of dissatisfaction with work [13]. A study among German physicians found that more than one-third of the health-care professionals examined were experiencing professional burnout [14].

The modern medical workplace is a complex environment, and physicians' responses to it vary greatly. Some find it stimulating and exciting, whereas others become stressed and burned out from their heavy workload. Several personal, interpersonal and organizational factors have been reported to be related to job satisfaction, stress and burnout in the medical environment [15-19].

Estimate of burnout in physicians often yields high figures and varies between countries, across time or specialties. This variation is understandable and expected because burnout is related to stressors arising from work environment and work environment is influenced by these variables. A study from rural British Columbia reported that 80% of physicians suffered from moderate to severe Emotional Exhaustion, 61% suffered from moderate to severe Depersonalization, and 44% had moderate to low feelings of Personal Accomplishment [20].

Most of the countries in the world are already facing physicians' deficit and if the physician burnout continues, risk for quitting job will rise. Study from United States (US) reported that 6 out of 10 physicians quit their job [21].

In African countries, burnout studies are scarce and most have only been developed in the last decade. The debilitation of health systems due to the human resources crisis has provoked a heavy and complex workload in health cares and substantial workforce burnout. Study conducted in Malawi reported that burnout level among maternal health staff at a referral hospital; 72% emotional exhaustion, 43% depersonalization and 74% low level of personal accomplishment [8].

The state of physician well-being is important for healthcare organizations whose focus has been productivity. However, physicians' stressors had been increased such as time-constrained patient care, lack of resources, decline in compensation and erosion of professional autonomy [22]. They contribute to decreased physician satisfaction and experience problems such as depression, broken relationships, exhaustion, inability to concentrate, insomnia, irritability, and the possibility of an increase in the use of alcohol [22, 23].

Most physicians tend to live their lives out of balance [24]. With the decline in physician satisfaction, there was also comes a decrease in quality of the patient care provided. Decreases in patient care leads to an increase in medical errors and negative effects in physician–patient relationships [22].

The number of studies that studied by Cooper *et al.*, Chopra *et al.*, Toyry S., Embriaco *et al.* and Lee *et al* have been conducted on the topic of physicians' burnout at job in which researchers proved several causal factors for job burnout like age, experience, gender, working conditions, relationship with colleagues, specialty they are working in and so on [6, 25-28].

As far as the researcher investigated, there is no similar study conducted in Ethiopia on burnout level and its associated factors among physicians. In addition, Ethiopian physician number is not comparable with patient volume so that the physicians in the work become over stressed. This was evidenced that the number of physicians in Ethiopia was estimated to be 1 544. This implies a physician to population ratio of 1:42 706 in Ethiopia and 1: 74 161 in SNNPRS but the World Health Organization (WHO) minimum standard was 1:10 000 [29] . Therefore this study designed

to address the problems by assessing the burnout level and its associated factors among physicians in public hospitals of Southern Nations, Nationalities and Peoples' Regional State (SNNPRS).

### **1.3. Significance of the study**

The findings of this study will help health care institutions; particularly hospitals to recognize factors related to burnout in medical staff and help them to take corrective measures in attempt to improve the health status of their employees. Further, it will have significances for health policy makers, health organization managers and individuals to design workplace stress and burnout management mechanism for physicians. The study will also provide baseline information about levels of burnout and related factors among physicians for future researchers.

## **Chapter Two: Literature Review**

### **2.1. Human resources for health challenges**

From global point of view the World Health Organization (WHO) defines health workers to be all people engaged in actions whose primary intent is to enhance health. This meaning extends from WHO's definition of the health system as comprising activities whose primary goal is to improve health [30]. The developing countries had a higher burden of disease and fewer health professionals than the developed countries. For example, the ratio of nurses: doctors ranges from nearly 8:1 in the African Region to 1.5:1 in the West. There is a dramatic skills shortage of physicians in Africa. The proportion of healthcare workers to the population in Africa also makes for a vast contrast. There are 2.3 healthcare workers in Africa compare to a global average of 9.3 healthcare workers per 1000 population [30].

The total health workforce currently in service in Ethiopia was 66 314 persons (including HEWs). This means there were health workforce densities particularly physicians that reflected 0.027 per 1000 population [31].

Health workers in health systems around the world are experiencing increasing stress as they react to a complex array of forces. The final outcome has been high levels of burnout amongst healthcare workers particularly physicians next to nurses [30, 32].

### **2.2. Concepts of Burnout**

The concept of burnout was started as a "grassroots" description of prolonged occupational stress among human service workers, where former engaged employees gradually get overwhelmed of emotional exhaustion, loss of energy, and withdrawal from work. This description was introduced in the mid 1970's by two American researchers, Herbert Freudenberg and Christina Maslach, who independently of each other described the phenomenon [33, 34]

The concept of burnout was described by three dimensions which are emotional exhaustion (depletion of emotional resources), depersonalization (negative outlook and feelings of the recipients) and reduced personal accomplishment (negative attitude of the work related effectiveness and competence)[35].

It is possible to measure burnout and work engagement by using different scales which are important to have information about burnout experience. Among the scales, the Maslach Burnout Inventory-Human Service Survey (MBI-HSS) is widely used in different studies to investigate the main causes and effects of burnout. The Maslach Burnout Inventory-Human Service Survey (MBI-HSS) involves three independent aspects of burnout: emotional exhaustion (EE), depersonalization (DP) and reduced personal accomplishment (PA) to indicate the level of burnout experienced by helping profession [36].

## **2.3. Dimensions of Burnout**

### **2.3.1. Emotional Exhaustion**

It is possible to explain that emotional exhaustion is the first component of burnout which is considered to be the most significant of the three components of burnout. EE could be characterized by a lack of energy and a feeling that one's emotional resources are going to be used up due to different factors. EE also coexists with different feelings like frustration and tension which have an impact on the well-being of the workers in the work settings. Based on a study by Maslach and Leiter, emotional exhaustion refers to the feeling of being emotionally overextended and drained by one's contact with other people. This emotional exhaustion can be noted in physical characteristics such as waking up just as tired as when going to bed, or lacking the required energy to take on another task [37].

As it is noted by different researchers, there are many causes for emotional exhaustion such as (work overload, role conflict and interpersonal relationships). The first, work overload refers to an attitude of too much work to complete in the time given which indicates the existence of a mismatch between the person in the work environment and the job. There is just too much to do in an inadequate time with insufficient resources. The second source of EE is role conflicts which deal with the over-enthusiastic new employee at the new job who may expect his/her job to be full of challenging expectations and he/she may anticipate many promising experiences. This reflects the conflict between the individuals from the organization. Integration of these differences can lead to frustration and emotional exhaustion [38]. The third source of emotional exhaustion is interpersonal relationships which are the root of the helping professions. Occurrence of EE is inevitable when the interpersonal relationship becomes very intense and emotional [37].



### **2.3.2. Depersonalization**

Depersonalization is considered as the second main dimension of burnout next to EE which occurs as a direct response to the stressors of the work environment. Depersonalization is also characterized by impassiveness from the work situation. For those who work closely with people on a daily basis, this is demonstrated by treating people as impersonal objects. It refers to a negative detached response to other people that might include too much or unrealistic idealism about the activities at hand. Because DP could experience in response to an individual's malfunction to deal with and process excessive cumulative emotions which leads to depersonalization which is one dimension of burnout. Depersonalization can, however, considered as an act of dehumanization, and dehumanization has the potential to harm individuals [37].

### **2.3.3. Personal Accomplishment**

The third and final component of burnout which is described as a feeling of reduced personal accomplishment. It is highly characterized by people experience a negative view about their ability to work their activity effectively. He/she feels inadequate and unproductive, which has a direct effect on the quality of the work produced in the work environment [39].

## **2.4. Burnout level among Physicians**

Physicians are privileged in caring for the sick, promoting public health, advancing the science of medicine and passing the torch of knowledge to the next generation of physicians [40]. Unfortunately, there is an increasing body of literature showing alarming rates of physician burnout and low job satisfaction [41-43].

Study from developed countries showed that severe burnout syndrome was presented in 25% - 70% of physicians [7]. For instance, burnout within a Canadian-based intensive care unit was ranged from 36% - 65%, with the highest level of burnout among intensive care physicians [44]. Another study reported that close to half of the intensive care physicians wished to quit their jobs [27].

Studies showed that physicians have significantly higher levels of burnout as compared to other workers and general population. In United States a large scale study revealed that physicians suffer from job burnout significantly high as compared to general population (37.9% vs 27.8%) and they

are more dissatisfied by work-life balance (40.2% vs 23.2%) [45]. It is observed that due to population aging, more physicians are required to meet the needs of the population in form of health services. Most of the countries in the world are already facing physicians' deficit and if the physician burnout continues, risk for quitting job will rise. According to a survey presented among 13,000 physicians from US, 6 out of 10 physicians quit their job [20].

Estimate of burnout in physicians often yields high figures and varies between countries, across time or specialties. This variation is understandable and expected because burnout is related to stressors arising from work environment and work environment is influenced by these variables. A study from rural British Columbia reported that 80% of physicians suffered from moderate to severe Emotional Exhaustion, 61% suffered from moderate to severe Depersonalization, and 44% had low to moderate feelings of Personal Accomplishment [17].

An American study observed "Burnout and satisfaction with work-life balance in US physicians. More than half of US physicians are now experiencing professional burnout" [21]. This study identified the following specialties with the highest level of burnout: urology (63.6%); physical medicine and rehabilitation (63.3%); family medicine (63.0%); radiology (61.4%); orthopedic surgery (59.6%); dermatology (56.5%); general surgery subspecialties (52.7%); pathology (52.5%); and general pediatrics (46.3%).

Another study stated that nearly half of the American physicians (45.8%) feel at least one of the subscales of burnout at their job which is far more than expected and specialties like emergency medicine, internal medicine, neurology and family medicine scored highest rates [46].

Study conducted by Chopra *et al.*, described high level of burnout among physicians by reporting 46% to 80% of physicians with moderate to high levels of emotional exhaustion, 22% to 93% of them with moderate to high levels of depersonalization and 16% to 79% of them with moderate to low level of personal achievement [6].

Study conducted by Brusaferrero *et al* in Italy established that only 10.1% health care workers were burned out at job in 304 bed university hospital in Italy [47]. Chambers *et al* reported exhaustion or stress in 60.4% general practitioners [48].

European General Practice Research Network (EGPRN) study done on burnout among European physicians showed that high levels of burnout; apparently affecting two-thirds of respondents and

about 43% of respondents reported high levels of emotional exhaustion, 35% depersonalization and 32% low feelings of Personal accomplishment [49].

From one of the developing country of Bosnia and Herzegovina, level of burnout was studied in a university hospital. The level of burnout among physicians was 37.4% highly emotionally exhausted, 45.6% highly depersonalized and 50.3% was suffering from lack of personal accomplishment [50].

A Hungarian cross sectional study reported that the level of burnout is high among physicians, almost all of whom reported experiencing a low degree of personal accomplishment. Emotional exhaustion, depersonalization and low personal accomplishment were cited by approximately 30, 60 and 100% of the physicians, respectively [51]. Another the same study design carried in Egypt showed that 39.7% high, 37.7% average and 22.6% low emotional exhaustion; 22.6% high, 45.6% average and 31.8% low depersonalization; 0.8 % average and 99.2% low level of personal accomplishment [52].

In Bahrain, a cross sectional questionnaire survey was administered and the level of burnout was evaluated using the Maslach Burnout Inventory. From this finding the level of the three dimensions of burn out were: 43.1% with high emotional exhaustion, 26.7% with high depersonalization and 51.5% reported low personal accomplishment which indicated that high level of burnout [53].

Another cross sectional study done in Brazil showed that 25% high emotional exhaustion, 25% high depersonalization and 19.4% low personal accomplishment among physicians [54]. The similar study design conducted in Malaysia showed that 25.4% showed high, 24.4% showed moderate and 50.2% showed low emotional exhaustion among physicians [55].

Cross sectional study on working physicians conducted by Sami Al-Dubai in Yemen showed that high burnout levels of emotional exhaustion 63.2%, low emotional exhaustion 19.6%, high depersonalization 19.4%, low depersonalization 56.0% and high personal accomplishment 41.6%, low personal accomplishment 33.0% among physicians [56].

A questionnaire-based cross sectional study of all Iranian emergency medicine residents and practitioners was performed. This study showed that 56% high emotional exhaustion, 66% high depersonalization and 78% low level of personal accomplishment which indicated high burnout level [57].

In Riyadh, a cross-sectional study was conducted using a custom-designed and validated questionnaire which incorporated the Maslach Burnout Inventory Human Services Survey (MBI-HSS). From this study 53.5% of respondents scored high for EE burnout, 38.9% for DP and 28.5% for PA [58].

The study conducted in Pakistan was performed a cross-sectional study design. This study noted that 60% high emotional exhaustion, 31% high depersonalization and 32% reported lack of personal accomplishment [59].

In African countries, burnout studies are scarce and most have only been developed in the last decade. The debilitation of health systems due to the human resources crisis has provoked a heavy and complex workload in health cares and substantial workforce burnout. Study conducted in Malawi reported that burnout level among maternal health staff at a referral hospital; 72% emotional exhaustion, 43% depersonalization and 74% low level of personal accomplishment [8].

## **2.5. Factors related to Physicians Burnout**

There may be multiple factors which can lead to or can be indirectly responsible for the physicians to become burnout at job. These factors may be social and demographic like age, gender and marital status. Other more important factors which might direct to job burnout can be career related factors which include nature of job, weekly working hours and monthly salary.

### **2.5.1. Socio-demographic factors**

The study conducted by Garrosa and Nassar showed socio-demographic variables like age, marital status and educational level had been associated with burnout [44].

Age is one of the demographic variable discussed mostly by the researchers as a risk factor for physicians' burnout as in the early stages it is always difficult to find the correct career path. Young age has been proved to be significant factor leading towards job burnout [60]. Study conducted by Ramirez *et al* described risk factors for burnout were being age 55 or less [61], while in another study age groups less than 29 years and above 40 years showed significantly high levels of burnout [56]. Age group 40-49 years old physicians was most likely to report exhaustion and stress problems [48].

One of the reasons why older physicians score more on personal accomplishment and they are less emotionally exhausted can be development of protective defenses in their relationship with patients as stated by Peisah *et al* [62]. It was found that more years of experience significantly reduces burnout but at the same time it may be confounded by working conditions as mostly older physicians were also involved in private practice as well as they earn more money.

The study conducted by Cooke *et al* found that age was not a significant predictor of physician's burnout [63].

The study carried out in Bahrain noted that age was associated with emotional exhaustion and depersonalization dimension of burnout level [53].

The cross sectional study carried out in Turkey showed that age was not significant predictor for emotional exhaustion and depersonalization dimensions of burnout and positively associated for only personal accomplishment dimension of burnout [64].

Gender difference may play important role in the presence of job burnout as both males and females have factors which can affect their work environment. A study results showed that male physicians had higher anxiety scores, less job satisfaction and drank more alcohol than women counterparts [49], whereas females showed low levels of personal achievement [47]. Embriaco *et al* [27] and Doppia *et al* [60] also revealed that females were directly related to high MBI score and risk factors for intensive care workers' burnout. Few studies like Chambers *et al* [48], Selmanovic *et al* [65] and Clarke and Singh [66] showed no significant difference of the levels of burnout among both genders. Some studies demonstrate that being married and having children is associated with burnout [67], while Ramirez *et al* [61] proves it other way around that being single is a predictive factor.

The study conducted in African countries showed that the number of children had been associated with burnout syndrome [8, 68].

Study conducted in Sweden showed that poor socioeconomic position of women was associated with burnout. This was reported by conducting a cross-sectional study from the Monitoring of Trends and Determinants in Cardiovascular Disease (MONICA) [69].

### **2.5.2. Work Related Factors**

A study from Yemen showed that significant high burnout levels were found among those who had working duration of  $\leq 10$  years and working more than 40 hours/week in government setup, having income  $\leq 40$  thousand Rials/month from government and those physicians who were working only in the government hospitals [56].

The cross sectional study conducted in a Province in Eastern Anatolia identified average number of patients examined was significant predictor of emotional exhaustion dimension of burnout level [70]. Another study carried out in Turkey showed that number of patients examined was significant predictors of emotional exhaustion dimension of burnout level [71].

Study carried out in Mongolia showed that excessive workload has degraded physicians' attitudes toward work and it was a significant source of developing burnout [72].

The cross sectional study done in New Zealand noted that longer time working increased the risk of a sense of low personal accomplishment [73]. The cross sectional study performed in shanghai showed that hospital type was significant predictors of depersonalization dimensions of burnout and working hours per week was significant predictors of emotional exhaustion dimension of burnout among physicians [74].

### **2.5.3. Personal risk related factors**

The cross sectional study from Shanghai noted that smoking was not significant predictor for all three dimensions of burnout among physicians [74].

Despite all the negative aspects of chewing khat, unexpectedly the study done in Yemen showed that not chewing chat was the significant predictors of burnout [56]

## Conceptual Frame Work of the Study

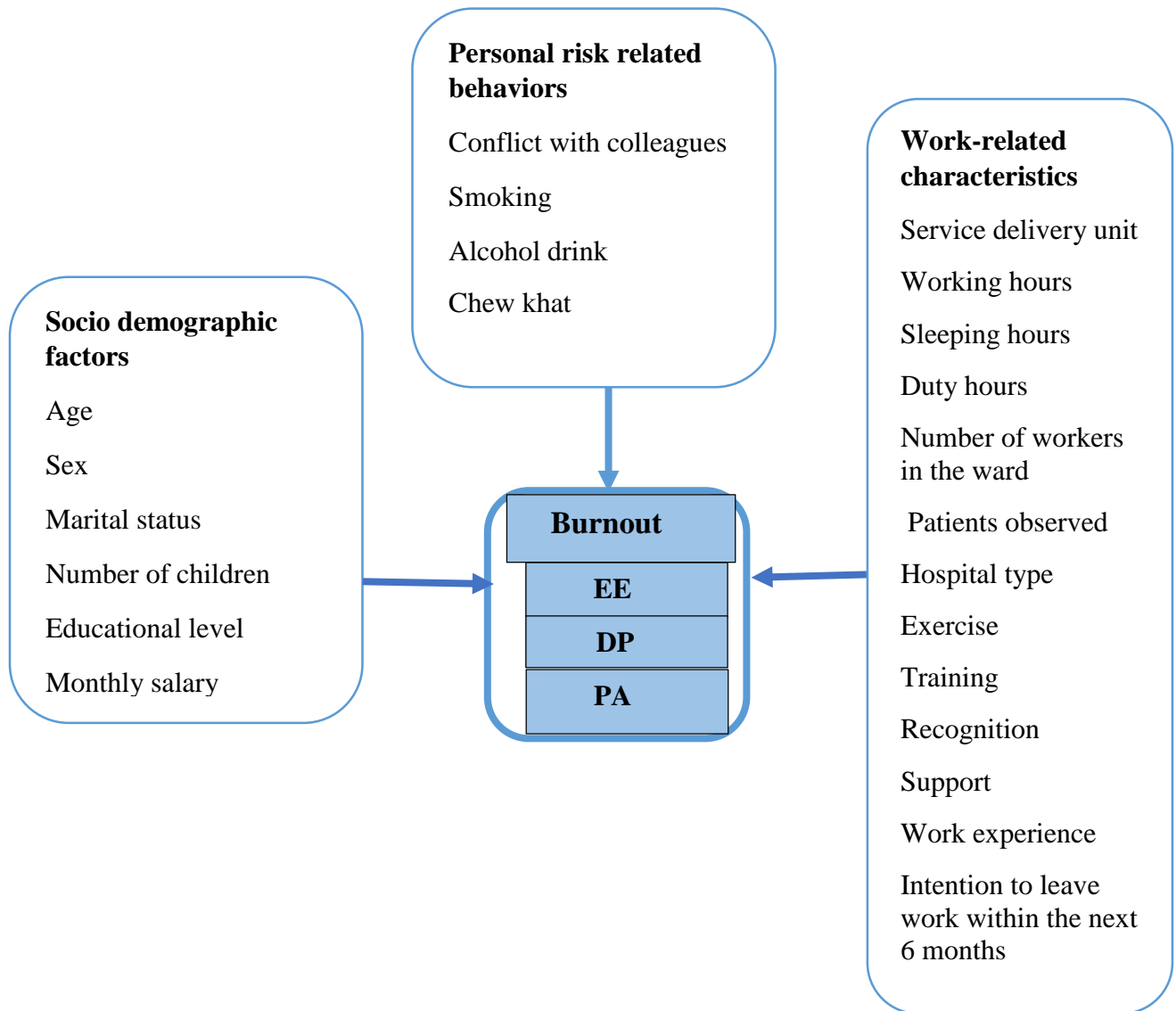


Figure 1. Conceptual framework adapted after reviewing literature in public hospitals of SNNPRS, Ethiopia, 2017

## **Chapter Three: Objectives**

### **3.1. General objective**

To assess burnout level and its associated factors among physicians currently working in public hospitals of Southern Nations, Nationalities and Peoples' Regional State, 2017.

### **3.2. Specific objectives**

- To assess level of burnout among physicians working in public hospitals
- To identify associated factors of burnout among physicians



## **Chapter Four: Methods and Participants**

### **4.1. Study Area and Period**

This study was carried out from March 13 to April 11, 2017 in all primary, general and specialized public hospitals of SNNPRS. Administratively the Region is divided into 14 zones, 1 City Administration zone and 4 special woredas. According to Central Statistical Agency (CSA) 2007 census, the regional total population was 14929548 ( male 49.7% and female 50.3%) [75]. Currently there are 40 (8 general and 32 primary) hospitals reporting to health bureau of the region and 6 specialized/teaching hospitals in the region [76].

### **4.2. Study design**

Institution based cross-sectional study design was conducted to investigate burnout among physicians in public hospitals of SNNPRS.

### **4.3. Population**

#### **4.3.1. Source population and Study Population**

The source population and study population of this study was all physicians who were currently working in public hospitals of Southern Nations, Nationalities and Peoples' Regional State.

### **4.4. Inclusion criteria**

Physicians who are currently working in different health service delivery units with professional work experience of at least 6 months and above and available during data collection period were included in this study.

#### 4.5. Sample size

All physicians working in public hospitals of SNNPRS during the data collection period.

Table 1: All public hospitals with their respective physician numbers in SNNPRS, Ethiopia, 2017

s/n	Hospital types	Name of hospitals	Total number of physicians in each hospitals	Responded number of physicians in each hospitals
1	General	Adare general hospital	29	28
		Arbaminch general hospital	16	13
		Butajira general hospital	17	16
		Bonga general hospital	6	6
		Jinka general hospital	14	13
		Tercha general hospital	12	9
		Durame general hospital	11	11
		Yirgalem general hospital	30	30
	<b>Total</b>	<b>8</b>	<b>135</b>	<b>126</b>
2	Specialized /Teaching	Dilla University teaching hospital	46	44
		Hawassa University teaching hospital	80	67
		Mizan Aman University teaching hospital	20	14
		Welayita University teaching hospital	38	34
		Wachamo University teaching hospital	31	30
		Worabe comprehensive specialized hospital	26	26
			<b>Total</b>	<b>6</b>
3	Primary	Alemgebaya primary hospital	5	5
		Besheno primary hospital	5	5
		Belle primary hospital	5	5
		Bitana primary hospital	4	4
		Bombe primary hospital	3	3
		Bona primary hospital	5	4
		Bue primary hospital	4	4
		Chencha primary hospital	7	6
		Doyogena primary hospital	4	4
		Gunchure primary hospital	4	4
		Halale primary hospital	5	5
		Hula primary hospital	3	3
		Kebado primary hospital	6	5
		Kibet primary hospital	6	5
		Kulito primary hospital	8	8
		Leku primary hospital	8	5
		Mudula primary hospital	4	4
Sawula primary hospital	7	6		

	Shone primary hospital	6	6
	Tepi primary hospital	14	13
	Tora primary hospital	5	5
	Wacha primary hospital	5	5
	Woteraresa primary hospital	5	4
	Homecho primary hospital	3	3
	Yaye primary hospital	3	3
	Chire primary hospital	3	3
	Gidole primary hospital	4	4
	Kele primary hospital	4	4
	Karat primary hospital	6	5
	Quante primary hospital	2	2
	Gessa primary hospital	4	4
	Shinshicho primary hospital	4	4
	<b>Total</b>	<b>32</b>	<b>161</b>
	<b>Grand total</b>	<b>46</b>	<b>537</b>
			<b>150</b>

#### 4.6. Study variables

##### 4.6.1. Dependent variable

Burnout level depending on three sub-dimensions:

- Emotional exhaustions
- Depersonalization and
- Personal accomplishment

##### 4.6.2. Independent variable

**Socio-demographic characteristics:** Age, Sex, Marital status, Educational level, Number of children, Monthly salary

**Work-related characteristics:** Area of service delivery unit, hospital type, duty hours, years of work experience, Training, Recognition, support from family and organization, Intention to leave work within the next 6 months, sleeping hours and working hours.

**Personal risk behaviors:** Conflict with colleagues, Smoking, Alcohol drink, chew khat

## **4.7. Data collection procedures**

### **4.7.1. Data collection tool**

Structured questionnaires were adopted from English version of Maslach's Burnout Inventory-Human Services Survey (MBI-HSS) to collect data on levels of burnout among physicians. It comprised of 22 items regrouped into 3 subscales: emotional exhaustion (EE; nine items), depersonalization (DP; five items), and personal accomplishment (PA; eight items). Each item was answered on a 7-point Likert scale ranging from "never" (=0) to "daily" (=6). Each aspect of the burnout syndrome was measured and scored separately. Thus a high score on emotional exhaustion and depersonalization, and a low score on personal accomplishment was reflected as a high level of burnout. A low level of burnout was considered as equivalent to a low score on emotional exhaustion and depersonalization, and a high score on personal accomplishment [5]. Instruments were prepared in English language as all physicians can understand the language. Participants were asked to provide information with regard to their age, sex, marital status, educational level, number of children, area of work and years of experience, duty hours, recognition from hospital manager, professional training, smoking, chew khat, sleeping hours, satisfaction with monthly salary, physical exercise, working hours, monthly salary, conflict with colleagues, and intention to leave work within next six months.

In this study, emotional exhaustion dimension was measured with nine items and Cronbach's alpha of 0.726 (I feel emotionally drained/tired from my work, I feel used up at the end of the workday, I feel fatigued/exhausted when I get up in the morning and have to face another day on the job, I can easily understand how my recipients feel about things, I feel I treat some recipients as if they were impersonal objects, Working with people all day is really a strain for me (nervous tension), I deal very effectively with the problems of my recipients, I feel burned out from my work and I feel I'm positively influencing other people's lives through my work).

From this study, depersonalization dimension was measured with five items and Cronbach's alpha of 0.719 (I've become more callous (insensitive) toward people since I took this job, I worry that this job is hardening me emotionally, I feel very energetic, I feel frustrated by my job, and I feel I'm working too hard on my job).

In this study, personal accomplishment dimension was measured with eight items and Cronbach's alpha of 0.702 (I don't really care what happens to some recipients, Working with people directly puts too much stress on me, I can easily create a relaxed atmosphere with my recipients, I feel exhilarated (joyful) after working closely with my recipients, I have accomplished many worthwhile things in this job, I feel like I'm at the end of my rope, In my work, I deal with emotional problems very calmly and I feel recipients blame me for some of their problems).

#### **4.7.2. Data collection (sources and personnel)**

Data was collected from study participants through self-administrated standardized MBI questionnaires. Fifteen trained diploma nurses who are neutral from study hospital were recruited from Worabe and Kulito town to facilitate data collection. Facilitators were responsible for the distribution of the self-administered questionnaire to all physicians who met eligibility criteria to participate in the study.

#### **4.8. Operational definition**

**High level of emotional exhaustion-** refers physicians scored  $\geq 24$  from nine items

**Average level of emotional exhaustion-** refers physicians scored 14-23 from nine items

**Low level of emotional exhaustion-** refers physicians scored  $\leq 13$  from nine items

**High level of depersonalization-** refers physicians scored  $\geq 9$  from five items in depersonalization

**Average level of depersonalization-** refers physicians scored 3-8 from five items in depersonalization

**Low level of depersonalization-** refers physicians scored  $\leq 2$  from five items in depersonalization

**High level of personal accomplishment-** refers physicians scored  $\geq 43$  from eight items in personal accomplishment

**Average level of personal accomplishment-** refers physicians scored 36-42 from eight items in personal accomplishment

**Low level of personal accomplishment-** refers physicians scored  $\leq 35$  from eight items in personal accomplishment

**High degree of burnout-** physician's scored emotional exhaustion dimension  $\geq 24$  from nine items, depersonalization dimension  $\geq 9$  from five items, and  $\leq 35$  from eight items in personal accomplishment dimension.

**Average degree of burnout-** refers for emotional exhaustion, scores 14-23 from nine items, in depersonalization 3-8 from five items, in personal accomplishment 36-42 from eight items.

**Low degree of burnout-** refers for emotional exhaustion, scores  $\leq 13$  from nine items, in depersonalization  $\leq 2$  from five items, in personal accomplishment  $\geq 43$  from eight items.

The above categorization of burnout was based on Maslach *et al* criteria [5].

**Physicians-** refers to include all general practitioner and above (medical specialist)

#### **4.9. Data processing and analysis procedures**

First, data was checked manually for completeness and consistency. Collected data were compiled, cleaned, coded and entered into Epi Data-3.1 software. SPSS-21 was used for statistical data analysis. Errors, missing values and outliers were checked and treated accordingly.

Presence of statistical association between independent and dependent variables was observed by bivariate analysis. During bivariate analysis, candidate variables with  $P < 0.25$  was included into multiple linear regression analysis. Multivariate linear regression analysis was done through enter method to identify the most significant predictors. The assumptions in multiple linear regressions (linearity, normality, and constant variance) was checked. Significant independent predictors were declared at 95% confidence interval and P-value of less than 0.05 and unstandardized  $\beta$  was used for interpretation.

#### **4.10. Data quality control**

Standard and validated tools/instruments were adopted from Maslach's Burnout Inventory-Human Services Survey (MBI-HSS) questionnaires. Pre-test was performed on 27(5%) physicians in Jimma university specialized hospital and Shenen Gibe primary hospital in Oromia region and its findings was used to modify tools accordingly. Pre-test showed that the reliability coefficients for the subscales using Cronbach's alpha were (EE= 0.831, DP= 0.886 and PA= 0.765). Training was given to facilitators on how to use tools and consent forms. During data collection to ensure data quality, collected data were checked for completeness, accuracy, and consistency by principal investigator. After data collection, Epi Data-3.1 software was used for data entry.

#### **4.11. Ethical consideration**

Ethical clearance was obtained from Institutional Review Board (IRB) of Jimma University, Institute of Health. For all types (primary, general and specialized) of hospital a formal letter of support from regional health bureau was sent to the respective hospitals in Southern region to inform them about the aim, design and importance of the study. Permission to carry out this study was obtained from the administrative offices of the hospitals. Each participant was informed about the aim and potential benefit of the study and their consent and confidentiality was assured. The data was collected and analyzed anonymously. The collected data was kept confidentially.

#### **4.12. Dissemination plan**

The findings will be presented to Jimma university department of Health Economics, Management and Policy and also will be shared with Southern Nations, Nationalities and peoples' health bureau, the hospital administrative offices and it will be submitted for publication on a peer reviewed journal.

## Chapter Five: Results

### 5.1. Socio-demographic characteristics

Out of 537 questionnaires 491 were returned with complete response for analysis giving a response rate of 91.4%.

Among the study participants the majority (70.9%) of physicians were males. In relation to educational status, the majority of the respondents 425 (86.6%) were general practitioners. Whereas, 52 (10.6%) were specialists and 14 (2.9%) of the respondents were residents.

In relation to marital status, most respondents 332 (67.6%) were single. Additionally respondents were asked about their age and monthly salary: - the mean age was 29.22 years and the mean monthly salary was 9,514.35 ETB (Table 2).

Table 2: Socio-demographic characteristics of physicians in public hospitals of SNNPRS, Ethiopia, 2017 (N=491)

Variables	Category	Frequency	Percent (%)	
Sex	Male	348	70.9	
	Female	143	29.1	
Marital status	Single	332	67.6	
	Married	151	30.8	
	Divorced	6	1.2	
	Widowed	2	0.4	
Number of children	None	380	77.4	
	One	62	12.6	
	Two	30	6.1	
	Three	17	3.5	
	Four	2	0.4	
Educational level	General practitioner	425	86.6	
	Specialist	52	10.6	
	Resident	14	2.9	
Continuous variables				
Variables	Minimum	Maximum	Mean	Standard deviation



Age in years	24	50	29.22	4.13
Monthly salary	5583	30000	9514.35	3558.34

## 5.2. Work related characteristics

In the context of the respondents working in the type of hospitals, 150 (30.5%) were from primary hospital; 126 (25.7%) were from general hospital and 215 (43.8%) were from specialized/teaching hospital.

With regard to their service delivery unit, the majority of respondents 142 (28.9%) were from the medical ward and pediatrics 108 (22%), whereas the rest respondents were from emergency care unit, surgical ward, intensive care unit, gynecological ward, ophthalmology and other unit. The majority of the respondents noticed that about 136 (27.7%) of them did not have the habit of doing physical exercise because of lack of time and 131 (26.7%) of them were exercise once a week to keep body healthy. With respect to satisfaction with monthly salary, about 55.8% of the respondents were partially satisfied, 27.9% of them were absolutely not satisfied and 16.3% of them were satisfied. With respect to their intention to leave the work in the future, about 34.2% have plan to leave, 28.9% do not have plan to leave and the rest were not sure whether they will leave or not. In the context of professional training and recognition, 55% of the respondents did not get professional training and 90.2% of them did not receive recognition from hospital managers. Respondents also informed that about 58.7% of them do not have any support from their family and organization.

It was observed that the mean for: professional work experience in the hospital was 1.92 years, the duty hours per month was 120.65 hours, sleeping hours in normal working day was 6.22 hours, patients observed per week was 1001 patients, professional worker in the ward was 5.45 and average working hours per week was 53.5 hours (Table 3).

Table 3: Work related characteristics of physicians in public hospitals of SNNPRS, Ethiopia, 2017 (N=491)

Variables	Category	Frequency	Percent (%)
	Specialized/Teaching	215	43.8

Type of hospitals	Primary	150	30.5
	General	126	25.7
Service area (unit)	Medical ward	142	28.9
	Pediatrics	108	22
	Emergency	92	18.7
	Surgical ward	73	14.9
	Intensive care unit	33	6.7
	Gynecology and obstetrics	29	5.9
	Ophthalmology	9	1.8
	Dermatology	5	1
Time of physical body exercise to keep body health	I do not exercise because of lack of time	136	27.7
	Once a week	131	26.7
	Few times a week	99	20.2
	Few times a month	54	11
	Few times a year	38	7.7
	At least half an hour daily	19	3.9
	I can't do exercise because of injury/illness	14	2.9
Satisfaction with monthly salary	Absolutely not satisfied	137	27.9
	Partially satisfied	274	55.8
	Satisfied	80	16.3
Intention to leave work within the next 6 months	Yes	168	34.2
	No	142	28.9
	I don't know	181	36.9
Professional training	Yes	221	45
	No	270	55
Receiving recognition from hospital managers	Yes	48	9.8
	No	443	90.2

Support from family and organization	Yes	203	41.3	
	No	288	58.7	
Continuous variables				
Variables	Minimum	Maximum	Mean	SD
Work experience	1	7	1.92	1.36
Duty hours per month	0	542	120.65	78.24
Sleeping hours	2	10	6.22	1.23
Number of patients see per week	10	400	100.81	67.25
Average working hours per week	14	120	53.5	13.10
Number of professional worker in the ward	0	24	5.45	3.75

### 5.3. Personal risk related behaviors

Regarding to conflict that physicians experienced in their work stay in the hospital, about 48.7% of them experienced conflict with their colleagues.

With regard to smoking cigarette, chewing khat and drinking any kind of alcohol, about 6.3% of the respondents smoke cigarette, about 19.1% of them chew khat and 52.5% of them drink any kind of alcohols (Table 4).

Table 4: Personal risk- related behaviors of physicians in public hospitals of SNNPRS, Ethiopia, 2017 (N=491)

Variables	Category	Frequency	Percent (%)
Conflict with colleagues	Yes	239	48.7
	No	252	51.3
Smoke cigarette	Yes	31	6.3

	No	460	93.7
Chew khat	Yes	94	19.1
	No	397	80.9
Drink any kind of alcohol	Yes	258	52.5
	No	233	47.5

#### 5.4. Participants' response on the three burnout level dimensions in public hospitals of SNNPRS

##### Emotional exhaustion dimension

The following table showed that the percentage of participants' response on each eight item scores.

Table 5: Participants' response on burnout level of emotional exhaustion dimension in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Emotional exhaustion dimension items	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
	0	1	2	3	4	5	6
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
I feel emotionally drained/tired from my work.	41(8.4)	33(6.7)	61(12.4)	93(18.9)	83(16.9)	121(24.6)	59(12)
I feel used up at the end of the workday	46(9.4)	41(8.4)	70(14.3)	103(21)	93(18.9)	95(19.3)	43(8.8)
I feel fatigued/exhausted when I get up in the morning and have to face another day on the job.	41(8.4)	51(10.4)	110(22.4)	111(22.6)	84(17.1)	67(13.6)	27(5.5)

I can easily understand how my recipients feel about things.	7(1.4)	12(2.4)	20(4.1)	48(9.8)	193(39.3)	117(23.8)	94(19.1)
Working with people all day is really a strain for me (nervous tension).	252(51.3)	94(19.1)	73(14.9)	23(4.7)	17(3.5)	24(4.9)	8(1.6)
I feel burned out from my work.	158(32.2)	69(14.1)	47(9.6)	53(10.8)	49(10)	65(13.2)	50(10.2)
I feel like I'm at the end of my rope.	328(66.8)	46(9.4)	42(8.6)	16(3.3)	19(3.9)	15(3.1)	25(5.1)
I feel I'm positively influencing other people's lives through my work.	5(1)	13(2.6)	21(4.3)	41(8.4)	144(29.3)	149(30.3)	118(24)

### Depersonalization dimension

The following table showed that the percentage of participants' response on each six item scores.

Table 6: Participants' response on burnout level of depersonalization dimension in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Depersonalization dimension items	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
	0	1	2	3	4	5	6
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
I've become more callous (insensitive) toward people since I took this job.	312(63.)	54(11)	48(9.8)	21(4.3)	24(4.9)	15(3.1)	17(3.5)

I worry that this job is hardening me emotionally.	163(33.2)	104(21.2)	89(18.1)	40(8.1)	34(6.9)	42(8.6)	19(3.9)
I feel I treat some recipients as if they were impersonal objects.	365(74.3)	44(9)	21(4.3)	19(3.9)	12(2.4)	20(4.1)	10(2)
I don't really care what happens to some recipients.	355(72.3)	54(11)	25(5.1)	17(3.5)	14(2.9)	13(2.6)	13(2.6)
Working with people directly puts too much stress on me.	143(29.1)	85(17.3)	132(26.9)	55(11.2)	22(4.5)	32(6.5)	22(4.5)
I feel frustrated by my job.	284(57.8)	69(14.1)	31(6.3)	32(6.5)	28(5.7)	33(6.7)	14(2.9)

**Personal accomplishment dimension**

The following table showed that the percentage of participants' response on each seven item scores.

Table 7: Participants' response on burnout level of personal accomplishment dimension in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Personal accomplishment dimension items	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
	0	1	2	3	4	5	6
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)

I can easily create a relaxed atmosphere with my recipients.	2(0.4)	6(1.2)	30(6.1)	39(7.9)	116(23.6)	169(34.4)	129(26.3)
I feel exhilarated (joyful) after working closely with my recipients.	4(0.8)	8(1.6)	23(4.7)	24(4.9)	96(19.6)	172(35)	164(33.4)
I have accomplished many worthwhile things in this job.	4(0.8)	6(1.2)	20(4.1)	34(6.9)	140(28.5)	164(33.4)	123(25.1)
In my work, I deal with emotional problems very calmly.	5(1)	14(2.9)	21(4.3)	54(11)	117(23.8)	158(32.2)	122(24.8)
I feel I'm working too hard on my job.	5(1)	7(1.4)	13(2.6)	65(13.2)	165(33.6)	126(25.7)	110(22.4)
I deal very effectively with the problems of my recipients.	2(0.4)	16(3.3)	11(2.2)	53(10.8)	125(25.5)	168(34.2)	116(23.6)
I feel very energetic.	3(0.6)	1(0.2)	13(2.6)	57(11.6)	164(33.4)	135(27.5)	118(24)

### 5.5. Burnout Level of Physicians Working in Public Hospitals of SNNPRS

Among the respondents about 320(65.2%) of them scored high degree of Emotional Exhaustion. Regarding depersonalization, 418 (85.1%) of them showed high degree of depersonalization. In relation to personal accomplishment, 447 (91%) of the respondents experienced low level of personal accomplishment burnout dimension. According to Maslach et al, high level of emotional exhaustion ( $\geq 24$  scores), depersonalization ( $\geq 9$  scores) and low level of personal accomplishment ( $\leq 35$  scores) is considered as experiencing high level of burnout on physicians [5]. Therefore, high level of EE and DP as well as low level of PA on physicians in public hospitals of SNNPRS showed high level of burnout (Table 10).

Table 8: Frequency and percentage of the three dimensions of burnout among physicians currently working in public hospitals of SNNPRS, Ethiopia, 2017

Burnout domains	Score	N	(%)
EE	High ( $\geq 24$ )	320	65.2
	Moderate (14-23)	158	32.2
	Low ( $\leq 13$ )	13	2.6
DP	High ( $\geq 9$ )	418	85.1
	Moderate (3-8)	71	14.5
	Low ( $\leq 2$ )	2	0.4
PA	High ( $\geq 43$ )	9	1.8
	Moderate (36-42)	35	7.1
	Low ( $\leq 35$ )	447	91

## 5.6. Factors Associated with Burnout

### 5.6.1. Factors associated with emotional exhaustion dimension

Bi-variate analysis was conducted to identify candidate variables for multiple linear regression analysis at  $p < 0.25$ . From the socio demographic variables, age ( $p=0.00$ ) and monthly salary ( $p=0.229$ ) were selected. From work-related factors, number of patients observed per week ( $p=0.00$ ), sleeping hours in working day ( $p=0.108$ ), having any support from family and organization ( $p=0.002$ ), professional training ( $p=0.011$ ), receiving recognition from hospital managers ( $p=0.009$ ) and average working hours per week ( $p=0.003$ ) were found to be candidates. For personal risk-related factors none of the variables selected.

Table 9 : Bivariate analysis of emotional exhaustion dimension

Variables	P-value
Sex	0.852
Marital status	0.992



Educational level	0.303
Number of children	0.772
working hours per week	0.003
Duty hours	0.654
Number of worker in the ward	0.356
Service delivery unit	0.539
Smoking cigarette	0.601
Conflict with colleagues	0.309
Intension to leave	0.454
Work experience	0.517
Sleeping hours in working day	0.108
Physical exercise	0.543
chewing khat	0.687
Alcohol drink	0.431
satisfaction with the monthly salary	0.646
Recognition from hospital managers	0.009
Age	0.00
Monthly salary	0.229
Number of patients observed per week	0.00
Any support from family and organization	0.002
Professional training	0.011
Type of hospital	0.417

In the multivariate model; receiving recognition from hospital managers ( $\beta$ : -0.047, 95% CI: -0.091, -0.004), monthly salary ( $\beta$ : -0.012, 95% CI: -0.016, -0.007) and age ( $\beta$ : -0.007, 95% CI: -0.011, -0.003) were negatively associated with emotional exhaustion score. Whereas number of patients observed per week ( $\beta$ : 0.001, 95% CI: 0.001, 0.003) was positively associated with emotional exhaustion score. 19.1% of variation in emotional exhaustion is explained by predictor variables (Table 10 &11).

A year increase in age results in 0.007 unit decrease in EE score. Increase in monthly salary results in 0.012 unit decrease in EE score. Number of patients examined per week increase results in 0.001 unit increase in EE score. Receiving recognition from hospital manager increase at the time of working results in 0.047 unit decrease in EE score.

Multicollinearity occurs when independent variable is very highly correlated with another independent variable. However, the variance inflation factor (VIF) for all variables did not exceed ten and the tolerance was not less than 0.2 showed that there was no multicollinearity [77]. In this study there was no evidence of multicollinearity in all dimensions of burnout (Table 11, 14, 17).

Table 10: Emotional exhaustion variation explained by predictor variables

R Square	Adjusted R Square	Std. Error of the Estimate
.206	.191	.13331

Table 11: Emotional exhaustion dimension of burnout level by respondents characteristics in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Variables	Unstandardized $\beta$ Coefficients	Sig.	95.0% Confidence Interval for $\beta$		Collinearity Statistics	
			Lower Bound	Upper Bound	Tolerance	VIF
Age in years	-0.007	0.001*	-0.011	-0.003	0.53	1.89
Monthly salary	-0.012	0.000*	-0.016	-0.007	0.56	1.79
Number of patients observed per week	0.001	0.000*	0.001	0.003	0.82	1.22
Having any support from family and organization						
Yes	0.015	0.259	-0.011	0.040	0.89	1.11
No (reference)						

Average working hours per week	0.001	0.152	0.000	0.002	0.79	1.26
Sleeping hours in working day	0.001	0.886	-0.010	0.011	0.86	1.16
Getting professional training						
Yes	-0.021	0.107	-0.046	0.005	0.87	1.14
No (reference)						
Receive recognition from hospital managers						
Yes	-0.047	0.034*	-0.091	-0.004	0.83	1.20
No (reference)						

\* Statistically significant at p-value < 0.05

### 5.6.2. Factors associated with depersonalization dimension

Bi-variate analysis was conducted to identify candidate variables for multiple linear regression analysis at  $p < 0.25$ . From the socio demographic variables, age ( $p=0.015$ ) and monthly salary ( $p=0.001$ ) were selected. From work-related factors, number of patients observed per week ( $p=0.022$ ), any support from family and organization ( $p=0.00$ ), professional training ( $p=0.029$ ) and type of hospital ( $p=0.00$ ) were found to be candidates. For personal risk-related factors none of the variables selected.

Table 12: Bivariate analysis of depersonalization dimension

Variables	P-value
Sex	0.788
Educational level	0.552
Marital status	0.59
Number of children	0.63
working hours per week	0.685
Duty hours	0.423
Number of worker in the ward	0.724
Service delivery unit	0.621
Smoking cigarette	0.528
Conflict with colleagues	0.329

Intension to leave	0.45
Work experience	0.517
Sleeping hours in working day	0.749
Physical exercise	0.331
chewing khat	0.632
Alcohol drink	0.29
satisfaction with the monthly salary	0.846
Recognition from hospital managers	0.391
Age	0.015
Monthly salary	0.001
Number of patients observed per week	0.022
Any support from family and organization	0.00
Professional training	0.029
Type of hospital	0.00

In the multivariate model; Age ( $\beta$ : -0.011, 95% CI: -0.015, -0.006), working in primary hospital ( $\beta$ : -0.068, 95% CI: -0.102, -0.033), having any support from family and organization ( $\beta$ : -0.074, 95% CI: -0.104, -0.044), monthly salary ( $\beta$ : -0.014, 95% CI: -0.019, -0.008) and getting professional training ( $\beta$ : -0.032, 95% CI: -0.062, -0.003) were negatively associated with depersonalization score. 21.8% of variation in depersonalization is explained by predictor variables (Table 13&14)

A year increase in age results in 0.011 unit decrease in DP score. Increase in monthly salary results in 0.014 unit decrease in DP score. Having any support from family and organization increase results in 0.074 unit decrease in DP score. Working in primary hospital increase results in 0.068 unit decrease in DP score as compared to working in specialized/teaching hospital. Getting professional training increase at the time of working results in 0.050 unit decrease in DP score.

Table 13: Depersonalization variation explained by predictor variables

R Square	Adjusted R Square	Std. Error of the Estimate
.230	.218	.15581

Table 14: Depersonalization dimension of burnout level by respondents' characteristics in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Variables	Unstandardized $\beta$ Coefficients	Sig.	95.0% Confidence Interval for $\beta$		Collinearity Statistics	
			Lower Bound	Upper Bound	Tolerance	VIF
Age in years	-0.011	0.000*	-0.015	-0.006	0.54	1.85
Monthly salary	-0.014	0.000*	-0.019	-0.008	0.56	1.78
Number of patients observed per week	0.000	0.171	0.000	0.000	0.87	1.15
having support from family and organization						
Yes	-0.074	0.000*	-0.104	-0.044	0.87	1.14
No (reference)						
Working in primary hospital	-0.068	0.000*	-0.102	-0.033	0.76	1.32
Working in general hospital	-0.020	0.265	-0.056	0.015	0.79	1.27
Working in tertiary (reference)						
getting professional training						
Yes	-0.032	0.032*	-0.062	-0.003	0.88	1.13
No (reference)						

\* Statistically significant at p-value < 0.05.

### 5.6.3. Factors associated with personal accomplishment dimension

Bi-variate analysis was conducted to identify candidate variables for multiple linear regression analysis at  $p < 0.25$ . From the socio demographic variables, monthly salary ( $p= 0.001$ ) was selected. From work-related factors, type of hospital ( $p=0.00$ ) and having any support from family and organization ( $p=0.002$ ) were candidates. For personal risk-related factors, none of the variables selected.

Table 15: Bivariate analysis of personal accomplishment dimension

Variables	P-value
Sex	0.988
Marital status	0.497
Educational level	0.723
Number of children	0.63
working hours per week	0.685
Duty hours	0.673
Number of worker in the ward	0.428
Service delivery unit	0.665
Smoking cigarette	0.528
Conflict with colleagues	0.344
Intension to leave	0.451
Work experience	0.328
Sleeping hours in working day	0.887
Physical exercise	0.545
chewing khat	0.564
Alcohol drink	0.872
satisfaction with the monthly salary	0.453
Recognition from hospital managers	0.266
Age	0.794
Monthly salary	0.001
Number of patients observed per week	0.512
Any support from family and organization	0.002
Professional training	0.924
Type of hospital	0.00

In the multivariate model; Working in primary hospital ( $\beta$ : -0.077, 95% CI: -0.106, -0.049) was negatively associated with personal accomplishment score. Whereas monthly salary ( $\beta$ : 0.004,

95% CI: 0.001, 0.007) was positively associated with personal accomplishment score. 9.9 % of variation in personal accomplishment is explained by predictor variables (Table 16&17)

Increase in monthly salary results in 0.004 unit increase in PA score. Working in primary hospital increase results in 0.077 unit decrease in PA score as compared to working in specialized/teaching hospital.

Table 16: Personal accomplishment variation explained by predictor variables

R Square	Adjusted R Square	Std. Error of the Estimate
.108	.099	.12977

Table 17: Personal accomplishment dimension of burnout level by respondents' characteristics in public hospitals of southern nations, nationalities and peoples' regional state, Ethiopia, 2017

Variables	Unstandardize d $\beta$ Coefficients	Sig.	95.0% Confidence Interval for $\beta$		Collinearity Statistics	
			Lower Bound	Upper Bound	Tolerance	VIF
Monthly salary	0.004	0.030*	0.001	0.007	0.94	1.06
Working in primary hospital	-0.077	0.000*	-0.106	-0.049	0.77	1.30
Working in general hospital	-0.069	0.155	-0.098	0.039	0.82	1.22
Working in tertiary (reference)						
having support from family and organization						
Yes	0.015	0.214	-0.009	0.040	0.91	1.09
No (reference)						

\* Statistically significant at p-value < 0.05.

## **Chapter Six: Discussion**

Burnout is determined by emotional exhaustion, depersonalization and personal accomplishment subscale values. The present study aimed to assess burnout level and to identify some associated factors that trigger burnout among physicians.

In this study the respondents were experienced high burnout by reflecting 65.2% (95% CI: 61.1, 69.7) high emotional exhaustion, 85.1% (95% CI: 81.7, 87.9) high depersonalization and 91% (95% CI: 88.6, 93.3) low personal accomplishment. Similar study carried out in Riyadh reported high burnout with 53.5% of respondents scored high for emotional exhaustion, 38.9% for depersonalization and 28.5% low for personal accomplishment [58]. Another similar study conducted by Sami Al-Dubai in Yemen showed that high burnout levels by reflecting 63.2% emotional exhaustion, 19.4% high depersonalization and 33.0% low personal accomplishment among physicians [56]. The study conducted in Malaysia showed that 25.4% showed high emotional exhaustion [55]. Our finding was higher. Possible explanation for this difference might be variation in workplace culture and poor employment condition.

Another study carried out in Egypt showed that 39.7% high emotional exhaustion; 22.6% high depersonalization and 99.2% low level of personal accomplishment [52]. Our results for both emotional exhaustion and depersonalization are higher but lower for low level of personal accomplishment. Probable reason for higher finding was over stressed at work and due to shortage of human resources but for lower case competition among the professionals might be higher to achieve the work compared to Egypt.

Another similar study done in Brazil showed that 25% high emotional exhaustion, 25% high depersonalization and 19.4% low personal accomplishment [54]. Our finding was higher for possible reasons of overloaded at work, service delivery problems and the role of physicians as healthcare provider might be treated inappropriate way.

The current finding was higher than study carried out in Bosnia and Herzegovina noted that the level of burnout among physicians was 37.4% highly emotionally exhausted, 45.6% highly depersonalized and 50.3% was suffering from lack of personal accomplishment [50]. This variation was may be due to poor management health systems.



A Hungarian study reported that the level of burnout is high among physicians, almost all of whom reported experiencing a low degree of personal accomplishment. Emotional exhaustion, depersonalization and low personal accomplishment were cited by approximately 30, 60 and 100% of the physicians, respectively [51]. Our results was higher for both emotional exhaustion and depersonalization for possible reasons of poor infrastructure and managing problems. Another similar study conducted in Bahrain noticed that 43.1% with high emotional exhaustion, 26.7% with high depersonalization and 51.5% reported low personal accomplishment which indicated that high level of burnout among physicians and lower than our finding [53]. Study done in Iran showed that 56% high emotional exhaustion, 66% high depersonalization and 78% low level of personal accomplishment which was lower than our results [57]. The study carried out in Pakistan noted that 60% high emotional exhaustion, 31% high depersonalization and 32% reported lack of personal accomplishment and this fining [59].

In general probable reason for the difference in the prevalence of burnout syndrome across different countries can possibly be explained by variations in culture, the nature of the health system (including structural and service delivery problems in different countries) and the role of physicians as health-care providers.

In this study burnout level as measured by the three dimensions were predicted by age, monthly salary, hospital type, receiving recognition from hospital managers, professional training and having support from family and organization both positively and negatively.

This findings noted that being hospitals type of primary ( $\beta = -0.077$ ;  $p < 0.001$ ) was negatively associated with depersonalization dimension of burnout level. On the other hand study done in shanghai showed that hospital type of primary ( $\beta = 0.17$ ;  $p < 0.05$ ) was positively associated with depersonalization dimension of burnout [74]. The possible differences for this finding was the level of primary care services might be better in our country as compared to shanghai.

In this study average numbers of patients examined per week ( $\beta = 0.001$ ;  $p < 0.001$ ) was positively associated with emotional exhaustion dimension of burnout level. Similar study done in a Province in Eastern Anatolia also identified average number of patients examined per week ( $\beta = 2.64$ ;  $p < 0.05$ ) was positively associated with emotional exhaustion dimension of burnout level [70]. Another study carried out in Turkey showed that number of patients examined per week was positively associated with emotional exhaustion dimension of burnout level [71].

In our finding age was negatively associated with emotional exhaustion ( $\beta = -0.007$ ;  $p < 0.001$ ) and depersonalization ( $\beta = -0.011$ ;  $p < 0.001$ ) dimensions of burnout. In another context as age increase, emotional exhaustion and depersonalization decreases by controlling other variables. A possible reason is that younger physicians are less experienced and they may become more cognitively overwhelmed with the workload of a routine work day. But the study conducted in Turkey showed that age was not significant predictor for emotional exhaustion ( $\beta = 0.0318$ ;  $p = 0.361$ ) and depersonalization ( $\beta = -0.0144$ ;  $p = 0.467$ ) dimensions of burnout and positively associated for only personal accomplishment ( $\beta = 0.0599$ ;  $p = 0.016$ ) dimension of burnout [64].

The study conducted in Shanghai showed that average working hours per week ( $\beta = 0.1$ ;  $p < 0.5$ ) was positively associated with emotional exhaustion dimension of burnout [74]. But in our finding working hours per week was not significant predictors of emotional exhaustion dimensions of burnout. The probable reason for this might be high work overload in Shanghai compared to our country. This investigation identified seven variables that significantly affect burnout level dimensions both positively and negatively. Three of them were also common in the above discussed studies. But monthly salary, recognition from hospital managers, professional training and having any support from family and organization were found different for this study.

## **Chapter Seven: Conclusion and Recommendation**

### **7.1. Conclusion**

Burnout was measured in three dimensions and it was found in a high level among physicians currently working in public hospitals of Southern Nations, Nationalities and Peoples region. Receiving recognition from hospital managers, age, working in primary hospital, monthly salary having any support from family and organization, and getting professional training can possibly minimize the level of burnout among physicians in the region. On the contrary, increase in the number of patients observed per week increases burnout.

### **7.2. Recommendation**

Based on the findings of the study and conclusion drawn, the following recommendations are put forward:

#### **For Ethiopian Federal Ministry of Health, and Southern Nations, Nationalities and Peoples' Regional State Health Bureau**

- Efforts will be expected from Ethiopian federal ministry of health by developing programs like revising the current monthly salary and increasing physician-patient ratio to minimize feeling of burnout.
- Both of them should set different strategies to provide professional trainings for physicians in order to reduce burnout.

#### **For Hospital Manager**

- Should provide recognition for physicians regarding their work
- Should provide current job related trainings for physicians in order to prevent job related burnout.
- Should encourage physicians to perform their work genuinely by providing any additional supports which helps to reduce the feeling of burnout, and enhances competition among them.

## Reference

1. Kraft U., burned out. *Sci Am Mind*, 2006: p. 28–33.
2. Maslach C, Schaufeli WB, and Leiter MP., Job burnout. *Annu Rev Psychol*, 2001. **52**: p. 397–422.
3. Schaufeli WB., Introduction to special issue on burnout and health. *Psychol Health*, 2001. **16**(5): p. 501–10.
4. Shanafelt TD, Bechamps G, Russel T, Dyrbye L, Satele D, et al., Burnout and medical errors among American surgeons. *Ann Surg.* , 2010. **251**: p. 995-1000.
5. Maslach C, Jackson SE, and Leiter MP., *Maslach Burnout Inventory*, 1996: Palo Alto, CA.
6. Chopra S S, Sotile M W, and S.M. O., Physician burnout. . *JAMA*, 2004. **91**(5): p. 633.
7. Roth M., et al., Career burnout among pediatric oncologists. *Pediatric Blood and Cancer*. 2011. **57**: p. 1168–1173.
8. Thorsen, V.C., A.L. Teten Tharp, and T. Meguid., High rates of burnout among maternal health staff at a referral hospital in Malawi: A cross-sectional study. . *BioMed Central Nursing*, 2011. **23**: p. 9.
9. Tennant C., Work-related stress and depressive disorders. *J Psychosom Res*, 2001. **51**(5): p. 697–704.
10. Carr C. and Pudelko M., Convergence of Management Practices in Strategy, Finance and HRM between the USA, Japan and Germany. *International Journal of Cross Cultural Management*, 2006. **6**(1): p. 75.
11. Haque A. and Aslam M. S., The Influence of Demographics on Job Burnout. *Journal of Psychology and Business*, 2011. **4**(2).
12. Bakker A.B., Demerouti E., and Schaufeli W. B., Validation of the Maslach Burnout Inventory–General Survey: An Internet study. *Anxiety, Stress, and Coping*. 2002. **15**: p. 245-260.
13. De Oliveira GS Jr, et al., High incidence of burnout in academic chairpersons of anesthesiology: should we be taking better care of our leaders? *Anesthesiology*, 2011. **114**(1): p. 181-93.
14. Janus K, et al., German physicians “on strike”—shedding light on the roots of physician dissatisfaction. *Health Policy*, 2007. **82**(3): p. 357–65.

15. Schaufeli WB and Enzmann D., The burnout companion to study and practice: a critical analysis. London, Taylor and Francis. 1998: p. 77-8.
16. Okerlund VW, Jacson PB, and Parsons RJ., Factors Affecting Recruitment of Physical Therapy Personnel in Utah. *Phys Ther.* 1994. **74**: p. 177-84.
17. Nirel N, Shirom A, and Ismail S., The relationship between job overload, burnout and job satisfaction, and the number of jobs of Israeli consultants. *Harefuahs*, 2004. **143**: p. 779–84.
18. Freeborn DK., Satisfaction, commitment, and psychological well-being among HMO physicians. *West J Med*, 2001. **174**: p. 13-19.
19. Visser MRM, et al., Stress, satisfaction and burnout among Dutch medical specialists. *CMAJ*, 2003. **168**: p. 271-5.
20. Thommasen H., et al., Mental health, job satisfaction, and intention to relocate. Opinions of physicians in rural British Columbia. *Can. Fam. Physician*, 2001. **47**: p. 737–744.
21. The Physicians Foundation. A survey of America's physicians: practice patterns and perspectives 2012 (Accessed 12/02/ 2013).URL: [http://www.physiciansfoundation.org/uploads/default/Physicians\\_Foundation\\_2012\\_Biennial\\_Survey.pdf](http://www.physiciansfoundation.org/uploads/default/Physicians_Foundation_2012_Biennial_Survey.pdf). . 2012.
22. Dunn, P.M., et al., Meeting the imperative to improve physician well-being: Assessment of an innovative program. . *Journal of General Internal Medicine*, 2007. **22**(11): p. 1544–1552.
23. Gundersen, L., Physician burnout. *Annals of Internal Medicine*, 2001. **135**(2): p. 145–148.
24. Myers, M.F., The well-being of physician relationships *Western Journal of Medicine*, 2001. **174**: p. 30–33.
25. Cooper C L, Rout U, and Faragher B., Mental health, job satisfaction and job stress among general practitioners. *BMJ* 1989. **298**(6670): p. 366-370.
26. Toyry S., Burnout and self-reported health among Finnish physicians. *Kuopio University Publication on D. Medical Sciences*, 2005. **365**: p. 102.
27. Embriaco N, et al., High level of burnout in Intensivists. Prevalence and associated factors. *Am. J. Crit. Care Med.*, 2007. **175**(7): p. 686-692.
28. Lee FJ, St ewart M, and Brown JB., Stress, Burnout and strategies for reducing them. What’s the situation among Canadian family physi cians? *Can Fam Physician*, 2008. **52**(2): p. 234-235.

29. Health Systems 20/20 Project: Health system assessment Ethiopia. Bethesda MD: Abt Associates Inc. IMF (International Monetary Fund) (2013) IMF Country Report No. 13/308. The Federal Democratic Republic of Ethiopia: Article IV consultation. Washington DC: IMF., 2012.
30. World Health Organization. The World Health Report 2006: Working together for health. World Health Organization, editor. 2006. Geneva. Ref Type: Report.
31. Federal Ministry of Health of Ethiopia in collaboration with AHWO. Human resources for health in Ethiopia, 2010. .
32. Ilhan MN, Durukan E, Taner E, Maral I, Bumin MA. Burnout and its correlates among nursing staff: questionnaire survey. *J Adv Nurs* 2008;(1):100-106.
33. Freudenberger, H., Staff burn-out. *J Soc Issues*, 1974. **30**: p. 159-207.
34. Maslach, C., Burned-out. *Hum Behav*, 1976. **5**: p. 16-22.
35. Maslach C., *Burnout: The Cost of Caring in Malor Books*2003: Cambridge, USA. p. 25-121.
36. Maslach C., *MBI Manual: The Original Measure that Was Designed for Professionals in the Human Service*. 1996.
37. Maslach C. and Leiter M.P., *The Truth about Burnout: How Organizations Cause Personal Stress and What to Do about it*. San Francisco, CA. Jossey. Bass, 1997.
38. Posing M. and Kickul J., Extending Our Understanding of Burnout: Test of an integrated model in Non Service Occupations. *Journal of Occupational health psychology*, 2003. **8**(1): p. 3-19.
39. Wright T.A. and Bonet D.G., The Contribution of Burnout to Work Performance. *Journal of Organizational behavior*, 1997. **8**: p. 491-499.
40. Shanafelt, T.D., et al., Career fit and burnout among academic faculty. *Archives of Internal Medicine*, 2009. **169**(10): p. 990-5.
41. Campbell Jr, et al., Burnout among American surgeons. *Surgery*. 2001. 130(4): p. 696-705.
42. Konrad, T.R., et al., Measuring physician job satisfaction in a changing workplace and a challenging environment. *Medical care*. 1999: p. 1174-1182.
43. Spickard Jr A., Gabbe S. G., and Christensen J. F., Mid-career burnout in generalist and specialist physicians. *Jama*, 2002. **288**(12): p. 1447-1450.
44. Nassar A., et al., *Burnout in Critical Care Workers*. 2014.

45. Shanafelt T.D., et al., Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin. Proc*, 2015. **90**: p. 1600-13.
46. Lloyd J. Nearly half of doctors report symptoms of burnout (Accessed 21/08/2012) URL: <http://usatoday30.usatoday.com/money/industries/health/story/2012-08-20/physicianburnout>
47. Brusaferro S, et al., Use of MBI to support health care workers management in hospitals. *Journal of preventive medicine and hygiene*, 2000. **42**: p. 18-23.
48. Chambers R and Belcher J., Predicting mental health problems in general practitioners. *Occup Med*, 1994. **44**(4): p. 212-216.
49. Soler JK, et al., Burnout in European physicians: the EGPRN study. *Fam Pract*, 2008. **25**: p. 245-65.
50. Pranjic, N., Burnout and Predictors for Burnout among physicians in Bosnia and Herzegovina- survey and study. *Acta Medica Academica*, 2006. **35**: p. 66-76.
51. Adám S, Torzsa P, Gyorffy Z, et al. Frequent high-level burnout among general practitioners and residents. *Orv Hetil*. 2009;150(7):317-323.
52. Abdo, et al., Burnout among physicians and nursing staff working in the emergency hospital of Tanta University, Egypt. *EasternMediterraneanHealth Journal*, 2015. **21**(12): p. 906-915.
53. Hasan, H.I., Y. Nooh, and A.S. Alsayyad, prevalence and factors affecting burnout among secondary care doctors in bahrain- a cross sectional study. *International Journal of Medical Research &Health Sciences*, 2015. **4**(2): p. 401-406.
54. Aline Bedin Zanatta and S.R.d. Lucca, Prevalence of Burnoutsyndrome in health professionals of an onco-hematological pediatric hospital. *Rev Esc Enferm USP* 2015. **49**(2): p. 251-258.
55. Khoo EJ, Aldubai S, Ganasegeran K, et al. Emotional exhaustion is associated with work related stressors: a cross-sectional multicenter study in Malaysian public hospitals. *Arch Argent Pediatr* 2017; 115(3):212-219
56. Al-Dubai S and Rampal K., Prevalence and Associated Factors of Burnout among Doctors in Yemen. *JOccup Health* 2010. **52**: p. 58–65.

57. Mohammad JALILI, Gholamreza SADEGHIPOUR ROODSARI, and Anahita BASSIR NIA, Burnout and Associated Factors among Iranian Emergency Medicine Practitioners. *Iranian J Publ Health*, 2013. **42**(9): p. 1034-1042.
58. Selaihem, A.A., prevalence of burnout amongst physicians working in primary care in riyadh military hospital, saudi arabia. *International Journal of Medical Science and Public Health*, 2013. **2**(2): p. 410-419.
59. Akbar Jaleel Zubairi and Shahryar Noordin, Factors associated with burnout among residents in a developing country. *Annals of Medicine and Surgery* 2016. **6**: p. 60-63.
60. Doppia MA, et al., Burnout in French doctors: a comparative study among anesthesiologists and other specialists in French hospitals. *Ann Fr Anesth Reanim*, 2011. **30**(11): p. 782-794.
61. Ramirez AJ, et al., Mental health of hospital consultants: The effects of stress and satisfaction at work. *The Lancet* 1996. **374**(9003): p. 724-728.
62. Peisah C, et al., Secrets to psychological success: Why older doctors might have lower psychological distress and burnout than younger doctors. *Aging Ment Health*, 2009. **13**(2): p. 300-307.
63. Cooke GP, Doust JA, and Steele MC, A survey of resilience, burnout, and tolerance of uncertainty in Australian general practice registrars. *BMC Med Educ*, 2013(13): p. 2.
64. OZYURT, et al, Predictors of burnout and job satisfaction among Turkish physicians. *Q J Med*, 2006. **99**: p. 161–169.
65. Selmanovic S, et al., Stress at work and burnout syndrome in hospital doctors. *Med Arh*, 2011. **65**(4): p. 221-4.
66. Clarke D and Singh R., Life event, stress appraisal and hospital doctors' mental health. *Journal of the New Zealand medical association*, 2004. **177**(1204).
67. Shanafelt TD, et al., Burnout and career satisfaction among American surgeons. *Ann Surg*, 2009. **250**(3): p. 463-71.
68. Ndeti, D.M., et al., Burnout in staff working at the Mathari psychiatric hospital. *African Journal of Psychiatry*, 2008. **11**: p. 199–203.
69. Norlund, S., et al., Burnout, working conditions and gender—results from the northern Sweden MONICA Study. . *BioMed Central Public Health*, 2010. **10**: p. 326.



70. Okan TAYCAN, S.E. TAYCAN, and C. ÇELİK, The Impact of Compulsory Health Service on Physicians and Burnout in a Province in Eastern Anatolia. *Turkish Journal of Psychiatry*, 2012: p. 1-8.
71. Toker I, Ayrik C, Bozkurt S, et al. Factors affecting burnout and job satisfaction in Turkish emergency medicine residents. *Emerg Med Open J*. 2015; 1(3): 64-71.
72. Bagaajav, A., et al., Burnout and job stress among Mongolian doctors and nurses. *Industrial Health*, 2011. **49**: p. 582–588.
73. Surgenor, L.J., et al., Burnout in hospital-based medical consultants in the New Zealand public health system. . *The New Zealand Medical Journal*. **122**: p. 11–18.
74. Zhihui Wang, et al., Physician Burnout and Its Associated Factors: A Cross-sectional Study in Shanghai. *J Occup Health*, 2014. **56** p. 73–83.
75. FDRE Population Census Commision. Summary and Statistical Report of the 2007 Population and Housing Census. Addis Ababa, Ethiopia; 2008.
76. SNNP Regional Health Bureau. Hospital Service Directory. Hawassa, Ethiopia; 2015.
77. Ajai S. Gaur and Sanjaya S. Gaur, *Statistical Methods for Practice and Research: A guide to data analysis using SPSS*, second edition, 2009.

## **Annexes**

### **Approval sheet**

Participant Information sheet and informed consent form for physicians working in public hospitals.

Hello!

My name is \_\_\_\_\_ I am working as data collector for the study being conducted in this health facilities to collect data on levels of burnout and associated factors among physicians working in your hospital. The study is being conducted by Taju Lerago who is studying for his Master's degree at Jimma University, Institute of Health, Faculty of Public Health and Department of health economics, management and policy. I kindly request you to lend me your attention to explain you about the study and being selected as the study participant.

The study title: "Burnout level and its associated factors among physicians in public hospitals of Southern Nations Nationalities and Peoples' Regional State, Ethiopia.

Purpose of the study:

The findings of this study can be used to provide baseline information about levels of burnout and factors related to burnout among physicians in public hospitals. Thereby, the results of this study will also be helpful for hospital administrators to recognize factors related to burnout in medical staff and help them to take corrective measures. These will ultimately improve the health status of their employees, including physicians as well as to improve the efficiency and quality of care rendered to patients.

### **Procedure and duration:**

I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study .There are -----questions to answer .You are being asked to take part in this study and to respond genuinely. This questionnaire focuses on assessing your feelings related to your work and your interaction with your client's at your work place. Your cooperation and willingness is greatly helpful in identifying problems related to burnout in your work area and proposing

solutions. Your name will not be written in this form and will never be used in connection with any information you provide.

### **Risk and benefits**

There is minimal possible risk associated with participating in this study but only taking few minutes from your time. There will not be any direct payment for participating in this study, but the findings from this research may reveal important information for the local health planners.

### **Confidentiality**

All information given by you will be kept strictly confidential. There will be no information that will identify you in particular. The findings of the study will be general for the study community and will not reflect any thing particular of individual persons .The questionnaire will be coded to exclude showing names .No reference will be made in oral or written reports that could link participants to the research.

### **Rights**

Participation for this study is fully voluntary. You have the right declare to participate or not in this study .If you decide to participate, you have the right to withdraw from the study at any time and this will not label you for any loss of benefits which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

### **Contact address**

If there are any questions or enquires any time about the study or the procedures, contact numbers of the principal investigator: mobile phone (0922306009/0917550576/0913208902)

Declaration of informed voluntary consent:

I have read the participant information sheet. I have clearly understood the purpose of the research, the procedure/s ,the risks and benefits, issues of confidentiality ,the rights of participating and the contact address for any queries. I have been given the opportunity to ask

questions for things that may have been unclear. I will be informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my initials (signature) as indicated below.

Signature of participant: \_\_\_\_\_ Signature of data collector: \_\_\_\_\_

### **Questionnaire- English version**

Questionnaire on “Burnout level and its associated factors among physicians in public hospitals of Southern Nation Nationalities and Peoples’ Regional State”:

#### **Part I: physicians’ characteristics (personal information)**

Instruction: Please circle the number in front of the option you choose and write in the blank space.

1. Age in years: \_\_\_\_\_

2. Sex: 1. Male 2. Female

3. Marital status: 1. Single 2. Married 3. Divorced 4. Widowed

4. If you are married then how many Children do you have? (If you are not married then check N/A)

1. Zero 2. One 3. Two 4. Three 5. Four 6. Greater than four 7. Not applicable (N/A)

5. Educational level/status: 1. GP (first degree) 2. 2<sup>nd</sup> degree and above 3. Others specify  
\_\_\_\_\_

6. What is the type of hospital you’re currently working for? 1. Primary 2. General 3. Tertiary

7. Mainly, in which ward did you work now in your hospital? 1. Emergency 2. Intensive care unit 3. Medical 4. Surgical 5. Pediatric 6. Others specify\_\_\_\_\_

8. Number of professional worker in your ward? \_\_\_\_\_

9. Service year (work experience) in this hospital: \_\_\_\_\_years

10. Monthly salary \_\_\_\_\_ in ETB

11. Are you satisfied with the monthly salary you are getting from your job as a medical doctor?  
1. Absolutely not satisfied    2. Partially satisfied    3. Satisfied    4. Completely satisfied

12. What is/are your average working hours per week in your routine/government works?  
\_\_\_\_\_hours

13. How many hours of sleep you have during your normal working day? \_\_\_\_\_hours

14. How much time do you give to physical body exercise to keep your body healthy?

1. I can't do exercise because of injury/illness    2. I do not exercise because of lack of time  
3. Few times a year    4. Few times a month    5. Once a week    6. Few times a week  
7. At least half an hour daily

15. How many patients do you see per week? \_\_\_\_\_

16. Your duty hours in month \_\_\_\_\_

17. Do you ever faced/encountered conflict(s) with your work colleagues?    1. Yes    2. No

18. Do you have any support from your family and organization?    1. Yes    2. No

19. Did you get professional training since you start work in this hospital?    1. Yes    2. No

20. Did you receive recognition from hospital managers in your work since you start work in this hospital?    1. Yes    2. No

21. Do you have a plan to leave in your current working unit of this hospital within the next six months?    1. Yes    2. No    3. I don't know

22. Do you smoke cigarettes?    1. Yes    2. No

23. Do you chew chat?    1. Yes    2. No

24. Do you drink any kind of alcohols?    1. Yes    2. No

## **Part 2: MBI- Human Services Survey**

Instructions: On the following page there are 22 statements of job-related burnout feelings. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, circle the number "0" (zero). If you have had this feeling, indicate how often you feel it by ticking the number (from 1 to 6) that best describes how frequently you feel that way.

S/ N	Option statements	Never	A few times a year or less	Once a month or less	A few times mont hs	Once a Week	A few times week	Ever y day
		0	1	2	3	4	5	6
1	I feel emotionally drained/tired from my work.							
2	I feel used up at the end of the workday							
3	I feel fatigued/exhausted when I get up in the morning and have to face another day on the job.							
4	I can easily understand how my recipients feel about things.							
5	I feel I treat some recipients as if they were impersonal objects.							
6	Working with people all day is really a strain for me (nervous tension).							
7	I deal very effectively with the problems of my recipients.							
8	I feel burned out from my work.							
9	I feel I'm positively influencing other people's lives through my work.							
10	I've become more callous (insensitive) toward people since I took this job.							
11	I worry that this job is hardening me emotionally.							
12	I feel very energetic.							
13	I feel frustrated by my job.							
14	I feel I'm working too hard on my job.							
15	I don't really care what happens to some recipients.							
16	Working with people directly puts too much stress on me.							
17	I can easily create a relaxed atmosphere with my recipients.							
18	I feel exhilarated (joyful) after working closely with my recipients.							
19	I have accomplished many worthwhile things in this job.							
20	I feel like I'm at the end of my rope.							
21	In my work, I deal with emotional problems very calmly.							
22	I feel recipients blame me for some of their problems.							

## DECLARATION

I, the undersigned, declare that this research thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the research have been fully acknowledged.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Name of the institution: \_\_\_\_\_

Date of submission: \_\_\_\_\_

### **Approval of internal examiner**

Name and Signature of internal examiner

\_\_\_\_\_  
\_\_\_\_\_

### **Approval of the advisors**

Name and Signature of the first advisor

\_\_\_\_\_  
\_\_\_\_\_

Name and Signature of the second advisor

\_\_\_\_\_  
\_\_\_\_\_