ASSESMENT OF MAGNITUDE OF BURNOUT AMONG EMERGENCY PHYSICIANS AND EMERGENCY RESIDENTS WORKING IN HOSPITALS FOUND IN ADDIS ABABA FROM JUNE 1 TO JULY 30 2021

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LIST OF ABBREVATIONS

BLH- black lion hospital

CDC- Center for Disease Control

CNS- Central Nervous System

DP- depersonalization

ED- Emergency Department

EE- emotional exhaustions

EMCC – emergency and critical care medicine

ETB- Ethiopian birr

MDD- Major Depressive disorder

OPD- Out patient department

OR- odds ratio

PI- Principal Investigator

RR- relative risk

SD- standard deviation

SPSS-Statistical Package for the Social Sciences

TASTH-TikurAnbesa Specialized Teaching Hospital

UK- United Kingdom

USA-United State of America

WCSC- Washington medical center

WHO- World Health Organization

Abstract

Background: Burnout is very common in the contemporary work place. It is common among health care workers who work in emergency department. It is defined as syndrome of a reduced sense of personal accomplishment, emotional exhaustion and depersonalization, amongst individuals who work with other people High intensity of workload, working alone, lack of social support, lack of free time, unsociable Rota, violent, abusive or demanding patients, seriously ill patients are common predisposing factors

Objective: The objective of this study was to determine the magnitude of burnout among emergency physicians and emergency residents who are working in different hospitals in Addis Ababa and specifically the levels of subscales of burnout.

Method: The study areas were Tikur Anbessa Specialized Hospital (TASH) and st.paul specialized hospital and other hospitals which are located in Addis Ababa, the capital city of Ethiopia. Cross sectional study was conducted from June 1 to July 30 2021, data was collected online from emergency and critical care physicians and residents. The data was entered into spss 26 after checking for completeness.

Results: Sixty eight participants completed the questionnaire out of 114 emergency and critical care residents and consultants working at different hospitals in Addis Ababa. Among the 68 eligible respondents 50% of them are between the age of 30 and 40 years and the rest of 50% are less than 30 years. 70.6% respondents were male and 38(52.9%) were single. Twenty four of the respondents were first year EMCCM residents, fifteen respondents were consultants and two of the respondents were subspecialists. Forty nine (72.1%) of the respondents had less than 5 years of duration of medical practice and 92.6% of the respondents had not planned to leave the specialty in the next 12 months. For the subscales of burnout, emotional exhaustion the mean score was 18.22 with standard deviation of 11.685, for personal accomplishment mean score was 25 with standard deviation of 12.519 and for depersonalization mean score was 7.21 with standard deviation of 6.149. the magnitude of burnout as defined by high emotional exhaustion and high depersonalization and low personal accomplishment was 8.8%%, plan to leave the specialty in 12months was significantly associated with burnout with p value of 0.04.

Conclusion and recommendation: As indicated in this study the magnitude and the level of burnout among emergency and critical care residents and consultants who were working in different hospitals in Addis Ababa was low. Further larger scale study recommended to be done on this important work place phenomenon.

Chapter one: Introduction

1.1 Background

Ones relationship with its job is a major part of life. Indeed we may spend more time with it than we do with friends or family. It demands a lot from you, but it gives you things in return(1)

Stress and burnout are considered the epidemics of modern society, and their importance to physical health and work disability has been acknowledged worldwide. Burnout is defined by Maslach et al. as a "syndrome of a reduced sense of personal accomplishment, emotional exhaustion and depersonalization, amongst individuals who work with other people"(1)

Burnout is lost energy, you are constantly overwhelmed, stressed, and exhausted a good night's sleep is hard to come by and even then you are soon worn out again Burnout is lost enthusiasm, your original passion has faded and been replaced by a negative cynicism. Burnout is lost confidence, without energy and active involvement in your work it's hard to find a reason to keep going.(2)

A study by the Harvard School of Public Health concluded that stressful jobs were as bad for women's health as were smoking and obesity(1)

Physicians seem to be more prone to burnout than the general population. They work substantially more hours than the general population and they often have difficulties to integrate their personal and professional lives

The medical staff, and particularly staff working in the emergency department (doctors and nurses) is exposed o an important number of psychosocial risk factors as a consequence of the type of work (high intensity of workload, working alone, lack of social support, lack of free time, unsociable Rota, violent, abusive or demanding patients, seriously ill patients, etc. Burnout among healthcare providers has profound personal and professional consequences impacting the quality of patient care and functionality of health care systems. Physician's burnout has severe consequences on the outcomes of patients, the performance of health institutions as well as physician's sense of wellness. (3)

1.2 Statement of the problem

Doctors experiencing burnout are more likely to make poor decisions and more medical errors; display hostile attitude towards patients; and have difficult working relation-ships. Also, burnout increases risk of depression; anxiety sleep disturbances; fatigue; alcohol and drug misuse; marital dysfunction; premature retirement and even suicide.(4)

Burnout among healthcare providers has been associated with increased self-reported errors, reduction in time devoted to providing clinical care, and higher mortality rates. Emergency physicians were found to have the highest rate of burnout compared to physicians in general and the general population of working adults (5)

There are emergency physicians and advanced trainees of emergency medicine working in emergency departments suffering from considerable burnout with a risk of psychiatric disorder. Those with full blown burnout are likely to consider stopping work in the emergency department within 10 years. The continuing importance of burnout phenomenon and studying burnout is based on at least three issues: 1) Burnout is quite prevalent and has been shown to be an economic, human and social burden to societies and individuals, 2) burnout is very stable, which makes preventing it before it occurs even more important, and 3) it is possible to prevent burnout through workplace development and health promotion (6)

Ethiopia is found in eastern part of Africa with one of the largest population country in Africa

Emergency medicine training programs in Ethiopia is introduced in 2009(7) Despite the progress made in emergency care since the introduction of the specialty the status and major challenges to the nascent field of emergency medicine like burnout among emergency physicians has not been adequately studied.

This study is the first of its kind in Ethiopian and in east Africa and the study was designed to assess the magnitude of burnout among emergency and critical care physicians and residents.

1.3 Significance of the Study

The epidemiological spectrum of burnout in terms of magnitude, etiology, gender distribution and severity may vary in different age distributions and geographical regions. There is very limited study done on burnout among health professionals and specifically burnout among emergency physicians in our country despite high work load and multiple work place stressors which predisposes for burnout. Since most emergency physicians and residents are found in hospitals found in Addis Ababa, the findings of this study gives insight on the magnitude and causes of burnout. This study tried to identify the magnitude, level and possible causes of burnout among emergency physicians and residents.

Chapter Two: Literature review

Burnout among emergency physicians continues to be an important health problem. Various studies were done on burnout among emergency physicians, though epidemiological data on this important health issue are scarce in Ethiopia

One study done in china by Benjamin Schooley et al from a total of 16 666 physicians (1584 emergency medicine physicians, 12103 surgeons and 2979 radiologists/pathologists) were included from 1997 to 2010 to assess the hypothesis that emergency physicians leave their specialty more often than other hospital-based specialists. They were followed for an average of 9.5 years. The mean age (SD) at the time when the specialty was certified as emergency physician was 36.7 (8.3) years. The study showed that during the 14 years' observation period 1395 (8.4%) emergency physicians left the clinical practice of their specialties in comparison with radiologists/pathologists, the adjusted HR of emergency physicians was 21.34 (95% CI 8.00 to 56.89) Emergency physicians have a higher chance of leaving their specialties than surgeons and radiologists/pathologists, possibly due to the high stress of emergency medicine(8)

Another meta-analysis done in Greece to assess burnout syndrome among emergency medicine physicians an update on its prevalence and risk factors by Boutou et al. All studies which determined burnout prevalence (as primary or secondary outcome) among emergency medicine physicians and were published are review**.** The conclusion from twenty-seven studies revised showed prevalence of burnout among emergency medicine physicians is high but the exact incidence greatly varies ranging from 25% to 77.8.(9)

Another Study done in America a Study of Occupational Stress among Emergency Physicians and Depression by Michael E Gallery et al the study involved a random sample of 1,350 emergency physicians who received a questionnaire consisting of scales on dépression and occupationnel stress as well as questions about their future plans for remaining in the specialty.

Seven hundred sixty-three usable surveys (56.5%) were completed. Of the study participants, 12.4% responded that they were somewhat likely to very likely to leave the clinical practice of emergency medicine within the next year the other 26.7% emergency physicians planned on leaving in five years' time, and less than half (42.9%) planned on seeing patients ten years from now. Older men, women, and those with high levels of stress and low job satisfaction were more likely to leave the specialty over the next ten years. The number of emergency physicians planning to leave were greater than the number that will be replaced through new emergency medicine residency graduates(10)

Another study done in the Department of Emergency Medicine in Australia by Leong Goh et al they used postal survey of all Fellows and advanced trainees of the Australasian College of Emergency Medicine and the Maslach Burnout Inventory and General Health Questionnaire-28 was used to assess level of the burnout. The study showed that 71.8% of physicians had moderate to high levels of emotional exhaustion, whereas 69.9% experienced moderate to high

levels of depersonalization and 48.7% developed moderate to low perception of personal accomplishment. Potential cases of psychiatric illness were diagnosed in 26.8% of emergency physicians. In this research Burnout was associated with male gender, trainee status, longer working hours, weekend shifts, work dissatisfaction, self-report of feeling stressed and a desire to stop working in the emergency department within 10 years.(11)

Another cross sectional study done with the self-administrated questionnaire in 50 physicians who provide emergency care service for 24 hours a day in emergency trauma aid department in one of the central public clinics in Moscow, Russia by Anna V. et alto determine prevalence of burnout among emergency physicians indicated that vast majority of emergency Physicians (78%) suffered from clear signs of emotional exhaustion with an average result of (29.132). In this study the respondents aged 40 to 60 (70%) who had already worked at least 5 years in the profession were most vulnerable to these symptoms and at least 10% of the emergency physicians demonstrated an alarming level of the syndrome.(12)

Another study done to assess risk of burnout among emergency physicians at a tertiary care center in Saudi Arabia by Abdulmohsen Alsaawi et al. This is an observational, cross-sectional study based on a structured questionnaire Maslach Burnout Inventory-Human Services Survey (MBI-HSS), the study targeted all physicians in the Emergency department (ED) at a tertiary medical center in Riyadh. A total of 72 emergency physicians were included in the study. Overall 53 (74%) out of 72 subjects filled the questionnaire. The mean EE score was 2.72 (*SD* 1.28), with 21 participants (40%) in the high-risk zone. Depersonalization (DP): The mean DP score was 1.86 (*SD* 1.31), with 21 participants (40%) in the high-risk zone. Personal Accomplishment (PA): the mean PA score was 4.5 (*SD* 0.9), with 17 participants (32%) in the high-risk zone. The conclusion is results are consistent with previous literature in showing that emergency physicians are at a moderate to high risk of burnout. Recommended to decision makers to take serious steps to address the threat, in order to minimize the risk of burnout and its impact on physicians as well as the patient they care for(13)

Another cross-sectional study of burnout among doctors in a cohort of public emergency centers, in Gauteng, South Africa done by Suma Rajan et al an observational, cross-sectional study using the Maslach Burnout Inventory-Human Services Survey. The study included a cohort of doctors working in the emergency centers of public sector hospitals in Gauteng, South Africa. One hundred participants completed the questionnaire out of a possible 124 doctors working at the five centers. Ninety-three met the inclusion criteria and was further analyzed. Seven respondents were specialist emergency physicians (7.5%), 36 were emergency medicine residents (38.7%)

and 50 were medical officers (53.8%). Analysis of burnout component scores showed a mean emotional exhaustion score of 31.69 (standard deviation SD 10.32), with 62 respondents (66.7%) in the high risk group from 86 (92.5%) at moderate to high risk. The mean depersonalization score was 13.39 (SD 6.21), with 50 respondents (53.8%) in the high-risk group from 75 (80.7%) at moderate to high risk of burnout. The mean personal accomplishment score was 34.87 (SD 6.54), with 21 respondents (22.6%) in the high-risk group from 65 (69.9%) at moderate to high risk of burnout. The results indicated that a large proportion of the doctors who work in emergency centers are at moderate to high risk of burnout. It was recommended that interventions be introduced at the work place to reduce burnout in doctors and improve their mental well-being. This will ensure better service delivery to patients with emergencies. Further research into the causes of occupational burnout should be explored.(14)

Chapter three: Objective

3.1 General Objective

Determined the magnitude of burnout among emergency physicians and emergency medicine residents working in different hospitals in Addis Ababa from June 1 to July 30 2021

3.2 Specific Objectives

Described the level of subscales of burnout among emergency physicians and residents working in different hospitals found in Addis Ababa from June 1 to July 30 2021

Identified associated factors of burnout among emergency physicians and residents in different hospitals in Addis Ababa from June 1 to July 30 2021.

Chapter Four: Methods and Materials

4.1 Study area and period

The study area is Addis Ababa (also known as "finnfinne"), the capital and largest city of Ethiopia. It is located on a well-watered plateau surrounded by hills and mountains in the geographic center of the country. The city is the educational and administrative center of Ethiopia. It is the site of a number of universities/colleges [including Addis Ababa University (AAU) and St.Paul's Hospital Millennium Medical College (SPHMMC)], a number of International Organizations (the most important are African Union and the United Nations Economic commission for Africa. Tikur Anbessa Specialized Hospital (TASH), which is one of the long serving hospitals for the nations, and located in Addis Ababa. It was opened in 1972 and

then became the only site for training medical doctors. In 1998 TASH, the largest referral hospital in the country, with 700 beds was transferred to the Federal Ministry of Health, and it has since become a University teaching Hospital for both clinical and preclinical training of most disciplines. It is also an institution where specialized clinical services that are not available in other public or private institutions are rendered to the whole nation. The TASH has 200 doctors, 379 nurses and 115 other health professionals dedicated to providing health care services and it is the institution where emergency and critical care medicine specialty was started for the very first time in Ethiopia. The various departments, faculties and residents under specialty training in the School of Medicine provide patient care in the hospital. (Addis Ababa university website)

4.2 Study Design –a prospective cross sectional study design was used and data was collected using structured online questionnaire which was sent to participants through telegram and was distributed in hard copy for those who were not found through telegram.

4.3 Population

Source population– all emergency physicians and emergency medicine residents'

Study population – all emergency physicians and emergency medicine residents who are working in hospitals in Addis Ababa.

4.4 Sample size and sampling technique

This was not employed, all of the study population willing to participate was involved.

4.5 Inclusion criteria

All questionnaires filled by emergency physicians who work in hospitals in Addis Ababa, from June 1 to July 30 2021.

Questionnaires filled by emergency medicine residents in hospitals found in Addis Ababa from June 1 to July 30 2021 was included.

4.6 Exclusion criteria

Those emergency physicians and residents who are working in hospitals found outside Addis Ababa

Those emergency physicians and residents who were not available during data collection period

4.7 Variables

Independent variables: age; sex; marital status; presence of dependents; duration of medical practice; number of patients seen; number of hours of work; number of night calls; working

relationship with colleagues; annual occupational leaves; plan to leave; level of medical practice; alcohol use; smoking; and history of any chronic disease, the institution the physician working…

Dependent variables

-emotional exhaustion

-depersonalization

-personal accomplishment

-magnitude of burnout

4.8 Data collection procedure

Maslach D, Jackson S, Leiter M, Schaufeli W, Schwab R, Maslach Burnout Inventory Manual, general survey, human services survey, educator's survey and scoring guides and questionnaire from previous research was used to assess the presence and level of burnout.

The inventory consists of 22 questions which has six graded likert-type answers to determine the risk of burnout. The MBI-HSS explored three subscales: emotional exhaustion, depersonalization and personal accomplishment and accordingly burnout is diagnosed as high level of emotional exhaustion and high level of depersonalization and low level of personal accomplishment. The structured questionnaire was distributed to all emergency physicians and emergency medicine residents who work in different hospitals in Addis Ababa through electronic method (telegram and e-mail) and in person to be filled.

4.9 Data quality control

Data was collected through online questionnaire The record online questioner was checked for completeness by data collector, supervisor. Data was exported directly from online questionnaire to the latest version of spss 26 using excel spreadsheet after checking for errors and completeness before analysis.

4.10 Data analysis

After data collection using online questionnaire the collected data was checked for completeness and inconsistency then the data was exported to excel spread sheet and cleaned, coded, and analyzed using SPSS version 26.0.and to explain the study population in relation to relevant variables descriptive statistics such as frequencies and percentages was calculated. the independent variables was dichotomized into with burnout and without burnout so association was tested using bivariate logistic regression after chi sq. test was done and for those independent variables with p value of < 0.25 again multivariate logistic regression analysis was

done to check for confounders and was presented on table, pie charts and text form. For both p value of < 0.05 was taken statistically significant.

4.11 Ethical consideration

After permission was granted from emergency and critical care medicine department, data collection process was begun. Confidentiality was maintained by excluding any identification. Privacy was also maintained by not exposing for and talking about it to others and data was collected through online questionnaire, the collected data was used only for this study.

Table 1: Cutoff values of subscales of burnout

Sub-scales of burnout	High	Moderate	Low
Emotional exhaustion	≥27	17–26	≤16
De-personalization	≥13	7–12	≤6
Personal accomplishment	≤31	32–38	≥39

CHAPTER FIVE: RESULT

5.1. Socio demographic characteristics

Of the 114 emergency and critical care residents and consultants working in the different hospitals in Addis Ababa, seventy eight volunteered to complete the questionnaires. Out of these, 68 emergency and critical care residents and consultants were eligible for inclusion in the study. The ten emergency doctors that were excluded they work in hospitals out of Addis Ababa.

Among the 68 eligible respondents fifty percent of them are between the age of 30 and 40 years and the rest of them are less than 30 years. Most of the respondents are male (70.6%), and majority are single 38(52.9%). Twenty four of the respondents are first year emergency and critical care residents, fifteen respondents are emergency and critical care consultants and two of the respondents are subspecialists. Forty nine (72.1%) of the respondents have less than 5 years of duration of medical practice while only two (2.9%) of the respondents have more than 10 years of experience. Most 38(55.9%) of the respondents are working in Tikur ambessa specialized hospital, twenty six (38.2%) are from st. Paul millennium medical college and one (1.5%) of respondents is from WCSH, one (1.5%) respondent was from MCM Korean hospital.

Weekly workload response showed that thirty two (47.1%) of the respondents had more than 96hrs weekly workload, only one respondent smokes cigarette and fifty one (75%) of the respondents did not drink alcohol. While most 64(94.1%) respondents did not have chronic illness, two respondent hae hypertension and one respondent has vasculitis. In this study respondents were asked if they have a plan to leave the specialty in the next twelve months and sixty three (92.6%) respondents have no plan of leaving the specialty in the next 12 months. Five (7.4%) of the respondents have planned to leave the specialty in the next 12 months. The details of demographic characteristics of participants of the study can be referred from table 2.

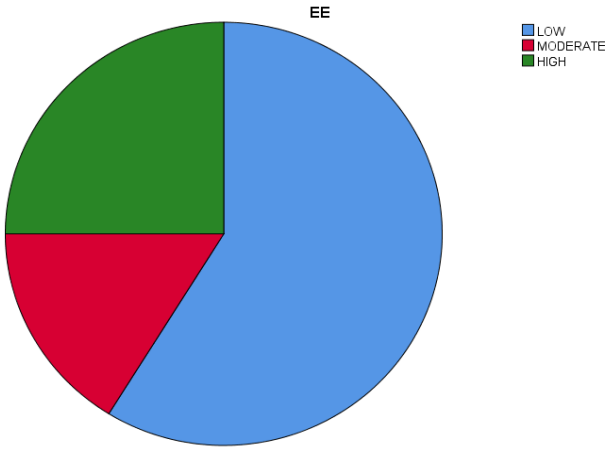

Fig. 1: levels of emotional exhaustion of EMCC residents and consultants

Table 2: Description of demographic characteristics of EMCC consultants and residents working in hospitals found in Addis Ababa

Variables	N = 68	%	p values
Gender			**0.9**
Male	48	70.6	
Female	20	29.4	
Age			**0.92**
<= 29	34	50	
30 - 40	34	50	
Marital status			**1.02**
Married	32	47.1	
Single	36	52.9	
Level of practice			**0.17**
Subspecialist	2	2.9	
EMCC consultant	15	22.1	
EMCC 1st year resident	24	35.3	
EMCC 2nd year resident	16	23.5	
EMCC 3rd year resident	11	16.2	
Duration of medical practice			**0.45**
Less than 5 years	49	72.1	
5 to 10 years	17	25	
Weekly workload			**0.24**
>96hrs	32	47.1	
48 to 96hrs	27	39.7	
Less than 48hrs	9	13.2	
The institution you are serving			**0.79**
TASH	38	55.9	
St. Paul	21	30.9	
Others	9	13.2	
Do you smock cigarette			**0.72**
No	67	98.5	
Yes	1	1.5	
Known chronic illness			**0.93**
None	64	94.1	
Hypertension	1	1.5	
Others	3	4.4	
Planned to leave the specialty in the next 12months			**0.02**
No	63	92.6	
Yes	5	7.4	

Table 3: Description of subscales of burnout with the level of practice of EMCC consultants and residents working in hospitals found in Addis Ababa

Burnout subscales		1st year residents	2nd year residents	3rd year residents	Consultants	Subspecialist
EE n(%)	Low	16(66.7)	9(56.2)	5(45.4)	10(66.6)	0
	Moderate	1(4.1)	4(25)	2(18.2)	3(20)	1(50)
	High	7(29.2)	3(18.8)	4(36.3)	2(13.3)	1(50)
DP n(%)	Low	10(41.8)	5(31.2)	5(45.5)	12(80)	0
	Moderate	7(29.2)	5(31.2)	4(36.3)	1(6.7)	1(50)
	High	7(29.2)	6(37.6)	2(18.2)	2(13.3)	1(50)
PA n(%)	Low	1(4.2)	3(18.7)	1(9.1)	1(6.7)	0
	Moderate	8(33.3)	3(18.7)	3(27.3)	3(20)	0
	High	15(62.5	10(62.6)	7(63.6)	11(73.3)	2(100)
	Total	24	16	11	15	2

5.2. Description of subscales of burnout of study participants

For each components of burnout the mean score and standard deviation was calculated accordingly for emotional exhaustion the mean score was 18.22 with standard deviation of 11.685, for personal accomplishment mean score was 25 with standard deviation of 12.519 and for depersonalization mean score was 7.21 with standard deviation of 6.149 respectively.

Table 4: Description of subscales of burnout with the weekly workload of EMCC consultants and residents working in hospitals found in Addis Ababa

	EE			
Weekly Workload	LOW n(%)	MODERATE n(%)	HIGH n(%)	Total
<24hrs	1(100)	0	0	1
24 - 48 hrs	6(50)	1(25)	1(25)	8
48 - 96 hrs	15(55.6)	6(22.2)	6(22.2)	27
>96 hrs	18(56.3)	4(12.5)	10(31.2)	32
Total	40	11	17	68

As depicted on figures 1, 2, and 3 level of burnout was assessed for each components of burnout. As indicated in this study seventeen (25%), eleven (16.2%) and forty (58%) of respondents have high, moderate and low level of emotional exhaustion respectively. Whereas 43(63.2%),

18(25.5) and 7(10.3%) of respondents had high, moderate and low personal accomplishment respectively. For the third component of burnout 18(26.5%), 18(26.5%) and 32(47.1%) of respondents had high, moderate and low depersonalization respectively. As indicated in this study being male or female physician had no effect on the level of subscales of burnout Respondents younger than 29years of age have higher emotional exhaustion (35%) and depersonalization (29%) as compared to those older than 30years. Those physicians who drink alcohol had higher emotional exhaustion (29%) and depersonalization (12%) and those physicians who planned to leave the specialty had higher emotional exhaustion (60%) and depersonalization (40%).

5.3. Bivariate and multivariate analysis of covariates Associated with burnout

Since the outcome variable, burnout, is a dichotomous variable binary logistic regression was done with the independent variable, the demographic data, to check for association and for those variable with p value of < 0.25 multivariate logistic regression was done to check for confounders. Plan to leave the specialty in the next 12 months, level of practice and weekly work load are enter to multivariate analysis and described in table and text.

According to the finding from binary logistic regression plan to leave the specialty in the next 12 months was significantly associated with the outcome variable burnout with crude odds ratio of 30.00; 95% CI: 3.58-62.45 a p value of 0.02. As shown in table 6 those participants who planned to leave the specialty in the next 12 months had 20 times more likely to have burnout than those who have no plan of leaving the specialty in the next 12 months with AOR of 20, 95% CI: 75-78.09 with a p value of 0.04.

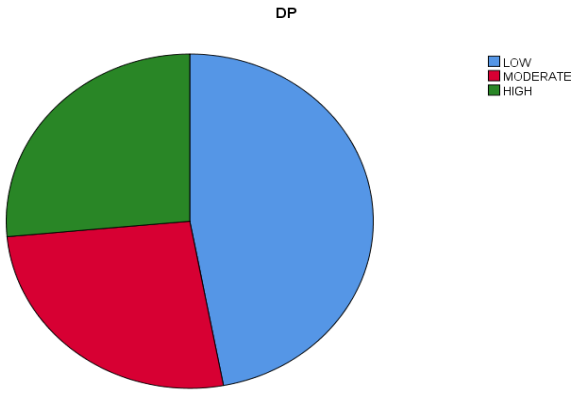

Fig. 2: levels of depersonalization of EMCC residents and consultants

Table 6: Bivariate and multivariate analysis of demographic characteristics and burnout of EMCC consultants and residents working in hospitals found in Addis Ababa

Variables	*Frequency (n 68)*	*Percentage*	*COR, 95%CI*	*AOR,95%CI*	*P value*
Gender					
Male	48	70.6	0.48(0.04-4.14)		
Female	20	29.4	1		
Age					
<= 29	34	50	0.40(0.08-2.74)		
30 - 40	34	50	1		
Marital status					
Married	32	47.1	1.13(0.21-6.08)		
Single	36	52.9	1		
Level of practice					0.62
Subspecialist	2	2.9	1	1	
EMCC consultant	15	22.1	0.49(0.27-0.99)	0.35(0.17-0.53)	
EMCC 1st year resident	24	35.3	1.52(0.03-3.01)	2.19(0.47-3.92)	
EMCC 2nd year resident	16	23.5	0.91(0.40-1.42)	0.61(0.22-1.01)	
EMCC 3rd year resident	11	16.2	0.88(0.09-1.68)	0.79(0.07-1.51)	
Duration of medical practice					
Less than 5 years	49	72.1	1		
5 to 10 years	17	25	0.93(0.27-1.59)		
Weekly workload					0.77
>96hrs	32	47.1	3.10(0.79-5.41)	1.47(0.50-2.45)	
48 to 96hrs	27	39.7	1.57(0.25-2.89)	0.83 (0.17-1.49)	
Less than 48hrs	9	13.2	1	1	
The institution you are serving					
TASH	38	55.9	0.51(0.27-0.99)		
St. paul	21	30.9	0.59(0.69-1.01)		
Others**	9	13.2	1		
Do you drink alcohol					
No	67	98.5	1		
Yes	1	1.5	0.29(0.053-1.60)		
Known chronic illness					
None	64	94.1	1		
Hypertension	1	1.5	0.186(0.082-0.29)		
Others	3	4.4	0.539(0.069-1.01)		
Planned to leave the specialty in the next 12months					**0.04**
No	63	92.6	1	1	
Yes	5	7.4	30.0(3.58-62.45)*	20(1.75-78.09)	

*P <0.05

**others are st. peter hospital, WCSC, EKA kotebe hospital,, ALERT hospital, MSM Korean hospital

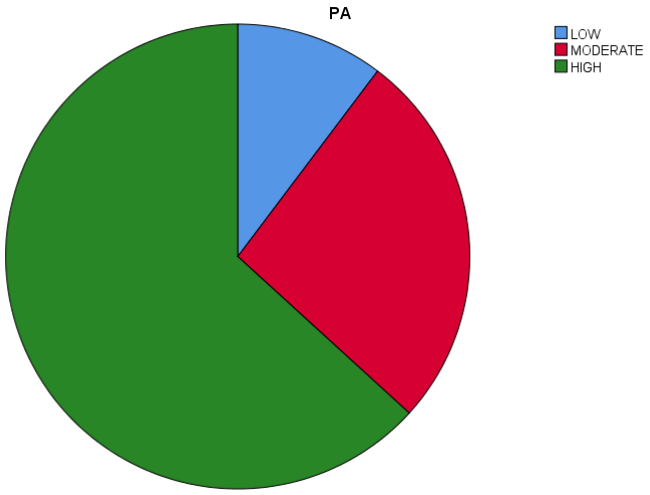

Fig 3: levels of personal accomplishment of EMCC residents and consultants

CHAPTER SIX: DISCUSSION

In this multicenter cross-sectional study the aim of the study was to assess the magnitude of burnout among emergency and critical care physicians and specifically this study tried to assess the level of risk of burnout in the study population. According to the finding from this study the magnitude of burnout (8.8%) was far lower than expected based on previous studies. This finding was in contradiction to most previous studies on level of burnout among emergency physicians and residents with the finding of high level of burnout the reason for this contradiction can be the mean age of the participants of those studies was older (36 years and older) than the participants of this study, older physicians have longer years of exposure to the stressful, demanding nature of emergency with daily facing deaths and crowded environment of working in emergency which predisposes to burnout as it is a chronic work place phenomenon that evolves over years and also most participants of those studies were with comorbidities which was strongly associated with the risk of burnout.(9, 10, 11, 12, 13). Most of the participants of this study were less than 30years of age and all of the participants were less than 40 years of age, most of them had less than five years of experience of working in emergency. Most of the participants were without known comorbidity and the study was conducted in hospitals found in the capital city of the country, Addis Ababa, which gives relatively a suitable working environment, availability of facilities and better educational and training opportunities. The other possible reason for low burnout can be those physicians who join the EMCCM specialty were based on interest and or they have a better stress coping ability.

The level of risk of burnout in the first and second year emergency and critical care medicine residents is higher and as the level of practice increases from first year residents to consultant and subspecialists the risk of burnout decreases. This was surprising it was expected that the longer respondents spent in a stressful environment, the higher the risk of burnout would be. This was shown by most studies on burnout among emergency physicians(9,12,16) One explanation may be that doctors learn to manage stress better as a result of training. Alternatively, those doctors with burnout may have ceased working in the ED. It may also be that more senior doctors have better working conditions with more satisfying responsibilities at work and it can also be the small number of subspecialists. This increased risk of burnout among first and second year residents can also be due to the increase in the burden of clinical activity and academic activity on the first and second year residents due to final year medical students, interns, who shares most responsibilities with residents were not available in the clinical activity due to covid-19 pandemic and also residents have less clinical and administrative autonomy, they have role ambiguity and lack of support from staff.

The study indicated that low level of emotional exhaustion (58%) and low levels of depersonalization (47%) risk of burnout and high levels of personal accomplishment (63%) among emergency physicians and residents working in different hospitals found in Addis Ababa. This finding is different from a study done by Christine R. stehmanet al which showed higher level of burnout risk among emergency physicians due to multiple reasons like higher rates of malpractice claims with litigation process that lasts years for each claim, high cost of medical education and high debt, electronic health care prevented one-on-one contact with patients which decrease in humanism and conflicts with physicians' inherent altruism(16), which were not usually encountered challenge in our manual health system and where most of the education fee is covered by the government.

Plan to leave the specialty in the next 12 months is significantly associated with the outcome variable, burnout. Most of the participants in this study have no plan to leave the specialty in the next 12months and only 7.4% of them have planned to leave the specialty which contradicts with the finding by Michael E Gallery et al where 26.2% of participants planned to leave the specialty.(15). Among those who have planned to leave the specialty in the next 12 months most of them are first year emergency and critical care residents.

As clearly indicated in many studies plan to leave the EMCC specialty was independent predictor of risk of burnout among other reason emergency physicians who intended to leave the specialty were usually absent from work place because working with too many people puts them in immense strain, they feel fatigued and frustrated every morning thinking about facing the same crowded environment, They have the difficulty in balancing professional and private life, due to the high job demands, they are not satisfied by the emergency service delivered.

Most of the participants have no comorbid illness (94.5%), they have no bad habits of drinking alcohol (90%) and smocking cigarette (98.5%). which is in contradiction to the study done by Leong Goh et al which showed high level of burnout among the participants 10% of the participants had hypertension and 8% of them had diabetes, 56% of the participants drink alcohol and 31.7% of them smoke cigarette and concluded that substance abuse and comorbid illnesses significantly associated with burnout. The reason for this was among other reasons the extended responsibility of caring for the self and During episodes of relapse often perceive that the illness limits their everyday life, sometimes leading to isolation and long absence from work which predisposes for fatigue and exhaustion(15). This study was limited by the nature of the study design a cross sectional study with a convenient sampling method which tried to assess the magnitude of burnout as a snapshot and the study was also limited by low sample size of participants.

CHAPTER SEVEN: CONCLUSION

The magnitude of burnout among emergency and critical care residents and consultants working in different hospitals in Addis Ababa was low and among those participants who have planned to leave the specialty in the next 12months were 20 times likely to have burnout.

Recommendations

Larger scale and longer term study on this important work related issue and Assessing potential factors of intention to leave the specialty should be done.

Ensuring availability of necessary inputs and conducive environment for the delivery of safe health care services which is one of the ways to prevent physician burnout from happening

Similar study can be replicated in other staffs like nurses, lab technicians etc. and also comparative study with other department than emergency medicine can be done.

Annex –I

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Data collection Questionnaire

Part I Socio demographic characteristics

1. Age _____ yrs
   - A. <=29 ☐
   - B. 30-39 ☐
   - C. 40 - 49 ☐
   - D. >=50 ☐
2. sex
   - A. Male ☐ B. Female ☐
3. Marital status
   - A. Married ☐ B. single ☐
   - C. Divorced ☐ D. widowed ☐
4. Level of practice
   - A. Subspecialist ☐
   - B. Emergency medicine consultant ☐
   - C. Emergency medicine 1st year resident ☐
   - D. Emergency medicine 2nd year resident ☐
   - E. Emergency medicine 3rd year resident ☐
5. Duration of medical practice
   - A. Less than 5 years ☐
   - B. 5 -10 years ☐
   - C. 10 -15 years ☐
   - D. more than 15 years ☐
6. Personal monthly income
   - A. 5000-10000 ☐
   - B. 10000-20000 ☐
   - C. >20000 ☐
7. The institution you are serving
   - A. TASH ☐
   - B. St. paul ☐
   - C. Other hospital specify_____
8. Weekly workload
   - A. <24hrs ☐
   - B. 24-48 hrs ☐
   - C. 48-96 hrs ☐
   - D. >96 hrs ☐

9. Do you smock cigarette

A. Yes ☐ B. No ☐

10. Do you drink alcohol

A. Yes ☐ B. No ☐

11. Any known chronic illness

A. Asthma ☐

B. Hypertension ☐

C. Diabetes mellitus ☐

D. Cardiac illness ☐

E. None ☐

F. Other specify_____

12. Number of night shift in a month_____

A. >15 night duties ☐
B. 10-15 night duties ☐
C. 5-10 night duties ☐
D. <5 night duties ☐
E. None_____

13. Number of annual leave _____

A. >4 weeks ☐
B. 2-3 weeks ☐
C. 1-2 weeks ☐
D. <1 weeks ☐
E. Other specify_____

14. Do you have planned to leave the speciality in the next 12 months?

A. Yes ☐ B. No ☐

Part II the MBI-HSS burnout assessment questionnaire

Please read each statement carefully and decide if you ever feel this way about your job and mark on the number of your choice.

0	1	2	3	4	5	6
never felt this way	Means I feel this way a few times a year or less	Means I feel this way once a month or less	Means I feel this way a few times a month	Means I feel this way once a week	Means I feel this way a few times a week	Every day

Questions	Rating						
1. Emotional exhaustion							
I feel emotionally drained from my work	0	1	2	3	4	5	6
I feel used up at the end of the workday	0	1	2	3	4	5	6
I feel fatigued when I get up in the morning and have to face another day on the job	0	1	2	3	4	5	6
Working with people all day is really a strain for me	0	1	2	3	4	5	6
I feel burned out from my work	0	1	2	3	4	5	6
I feel frustrated by my job	0	1	2	3	4	5	6
I feel I am working too hard on my job	0	1	2	3	4	5	6
Working with people directly puts too much strain on me	0	1	2	3	4	5	6
I feel like I am at the end of my rope	0	1	2	3	4	5	6
2. Personal accomplishment							
I can easily understand my patients feel about things	0	1	2	3	4	5	6
I deal effectively with the problem of my patients	0	1	2	3	4	5	6
I feel I am influencing other peoples lives through my work	0	1	2	3	4	5	6
I feel energetic	0	1	2	3	4	5	6
I can easily create a related atmosphere with my patients	0	1	2	3	4	5	6
I feel exhilarated after working closely with my patients	0	1	2	3	4	5	6
I have accomplished many worthwhile things in this job	0	1	2	3	4	5	6
In my work, I deal with emotional problems very calmly	0	1	2	3	4	5	6
3. Depersonalization							
I feel I treat some patients as if they were impersonal ‘objects’	0	1	2	3	4	5	6
I have become more callous toward people since I took this job	0	1	2	3	4	5	6
I worry that this job is hardening me emotionally	0	1	2	3	4	5	6
I do not really care what happens to some patients	0	1	2	3	4	5	6
I feel patients blame me for some of their problems	0	1	2	3	4	5	6