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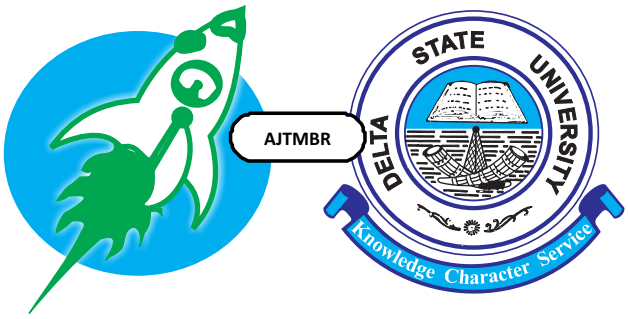

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Focus and Scope

The African Journal of Tropical Medicine and Biomedical Research is a multidisciplinary and international journal published by the College of Health Sciences, Delta State University of Abraka, Nigeria. It provides a forum for Authors working in Africa to share their research findings on all aspects of Tropical Medicine and Biomedical Sciences and to disseminate innovative, relevant and useful information on tropical medicine and biomedical sciences throughout the continent. The journal will publish original research articles, reviews, editorials, commentaries, short reports, case reports and letters to the editor. Articles are welcome in all branches of medicine and dentistry including basic sciences (Anatomy, Biochemistry, Physiology, Pharmacology, Psychology, Nursing etc) and clinical sciences (Internal Medicine, Surgery, Obstetrics and Gynaecology, Dental surgery, Child Health, Laboratory Sciences, Radiology, Community Medicine, etc). Articles are also welcome from social science researchers that document the intermediating and background social factors influencing health in countries of Africa. Priority will be given to publication of articles that describe the application of the principles of primary health care in the prevention and treatment of diseases.

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Table of Contents

Prevalence of Occupational Burnout among Healthcare Workers in Government-owned Health Facilities in Ethiope East Local Government Area of Delta State, Nigeria

Ojeogwu CI[1], Aboloje EA[1], Afamefuna FU[1]; Osuvwe CO[2] and Israel OE[3]

Abstract

Introduction: One of the serious issues facing global health care systems, patient care, and patient safety is burnout among health care workers which is a psychological condition affecting people who work at a job for a prolonged period of time and are exposed to interpersonal and emotional pressures. This study evaluated the prevalence of occupational burnout among health care workers in government-owned health facilities in Delta State, Nigeria.

Materials and Methods: A descriptive cross-sectional survey was conducted for this investigation. Stratified (proportionate) random sampling was adopted and the questionnaire was self-administered to 140 respondents. The Maslach Burnout Inventory-Human Services Survey (MBI-HSS), was used to measure the prevalence of occupational burnout.

Results: Burnout scores were divided into low, average, and high categories. Out of the 140 study subjects, 113 (80.7%) were females and 27 (19.3%) were males giving a male to female ratio of 1:4.0. The workplace morbidity/lifestyle of respondents revealed that 6 (4.3%) were diagnosed with health problems prior to commencement of their current job and 38 (27.1%) were diagnosed with health problems on their current job. The majority of the respondents had musculoskeletal pain while 7.9% of the respondents had diabetes mellitus. As a result of stress in the workplace, 72 (51.4%) were overeating, 40 (28.6%) were inactive, 2 (1.4%) had increased use of alcohol. The findings in this study indicated that workload (30.7%) and shift work (20.0%) were the major sources of occupational burnout experienced by the HCWs with the overall prevalence of occupational burnout at 45.0%.

Conclusion: The study suggests the need for policy intervention from the health authorities of the state hospitals and the PHCs with regards to improving staff welfare, improving work family balance and effective family support from the family to reduce occupational burnout among HCWs.

Keywords: Occupational Burnout; Health Care Professionals; Stress; Family

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INTRODUCTION

One of the serious issues facing global health care systems, patient care, and patient safety is burnout among health care workers (HCWs).[1] Burnout syndrome is a psychological condition that affects people who work at a job for a prolonged period of time and results from exposure to interpersonal and emotional pressures.[1] It consists of the development of a negative self-esteem, negative attitude to work, and of diminished interest in the clients or the patients.[1,3,2,4] An individual who offers systematic preventative, curative, promotional, or rehabilitative health care services to people, families, or communities is referred to as a healthcare worker (HCW) or generally as healthcare professionals (HCP).[5]

Burnout is a global phenomenon that negatively affects workers at all organizational levels and on organizations as a whole, resulting in high human

and financial consequences.[5] Health care workers are the most vulnerable persons in terms of burnout syndrome on the account that they usually deal with other people's problems and expectations.[6] Due to the rigors and stress of providing for patients, the lengthy and isolating shift schedules, and the generally stressful working environment, they are at a significant risk of experiencing burnout.[6] As a result of burnout, medical professionals may experience symptoms like anxiety, irritability, mood fluctuations, insomnia, sadness, and a sense of failure.[6] These symptoms could ultimately result in decreased work output and patient care that is of worse quality.[6]

Since their health systems and financial models are either inadequate, overburdened, or rapidly evolving in response to the changing illness patterns and health status of the population, the rate of burnout is higher among HCP in developing nations.[1,2] Additionally, most of these nations suffer from a severe scarcity of HCP, especially in specific specialties, which could cause them to be overburdened with work obligations and make them more vulnerable to burnout..[1,2] HCPs in developing countries, especially in the rural areas of practice are faced with work overload from inadequate staffing as well as unconducive working conditions and environmental factors such as bad roads, poor lighting, and long working hours.[1,2] These factors alongside non-typical work schedules makes them prone to burnout which adversely affects patient care.[1,2]

Burnout among health professionals has not received much attention in sub-Saharan Africa since occupational health and safety has received more attention due to the variety of hazards associated with work-related activities.[7] However, a burnt worker is far more vulnerable to workplace risks. Burnout studies are rare in African nations and most have only recently been developed.[7] In situations where burnout has been investigated, it has been studied in relation to a small subset of the healthcare workforce, hence it is impossible to identify trends within this broad group of professionals.[7]

Problems with recruitment and retention of healthcare professionals in Nigeria have been exacerbated by a rising awareness of how workplace stress causes unhappiness among healthcare employees in Nigerian hospitals.[8] Nigeria's sparse infrastructure, low physician-to-patient ratio, and recent widespread physician emigration to other countries have all contributed to the development of a healthcare system that may contribute to physician burnout..[37] Therefore, even though there are not enough research on occupational burnout syndrome in Nigeria, it's possible that medical burnout is permeating the practice environment, albeit covertly.[8]

A study conducted at Bingham University Jos Plateau State of Nigeria on the risk factors for burnout among healthcare workers revealed a high prevalence of 87.7%.[9] Any proof of the protective and risk factors for burnout, according to researchers, is very interesting to the scientific community. To prevent burnout syndrome and choose the most suitable clinical interventions when this disease manifests, more knowledge about these aspects is required.[10] In a study on burnout and psychological distress among nurses in a Nigerian tertiary health institution, it was found that 44.1% of the respondents had high scores on the general health questionnaire-12 (GHQ-12), which is a measure of psychological distress. However, 42.9% of the respondents were burned out in the areas of emotional exhaustion, depersonalization, and reduced personal achievement.[11] A study conducted on burnout syndrome and depression among healthcare professionals in tertiary hospitals in Maiduguri, Nigeria revealed a relatively high level of burnout observed among the clinical staffs (doctors, nurses, pharmacists, occupational therapist, physiotherapists and social workers) compared to the non-clinical staffs (central administration staffs, finance/hospital records staffs, engineering/works &maintenance staffs, hospital library & hospital

security staffs.) (21.5% vs.12.5%) while depression was found to be higher among the clinical staffs compared to the non- clinical staffs. (10.7% vs.7.6%).[12]

Previous research in Nigeria have identified a number of characteristics linked to burnout, including age, gender, working hours, job discontent, marital status, and work-home interference. There is however, no population or institutional-based published study on burnout among healthcare workers (HCWs) in Ethiope East Local Government Area of Delta state, Nigeria. Health care workers' roles in government-owned health facilities in Ethiope East local government area (LGA) of Delta state is stress-filled, due to poor staffing, long working hours, shifts, work overload and security issues. This study was therefore designed to evaluate the prevalence of occupational burnout among health care workers in government-owned health facilities in Ethiope East L.G.A., Delta State, Nigeria. The results will help in policy-making with regards to the improvement of welfare of HCWs, employment of HCWs in the LGA as well as give an insight into the level of burnout among HCWs in rural areas.

MATERIALS AND METHOD

Study Area:

The study was conducted in Ethiope East local government area (LGA) of Delta State, South-South region of Nigeria. It is located in Delta central senatorial district bordered on the south by Okpe LGA, on the north by Ukwuani LGA, on the east by Ughelli North LGA and on the west by Ethiope West LGA. Its headquarters is Isiokolo. It has an area of 380 square kilometres and a population of 200,942 at the 2006 census projected to approximately 276,700 as of 2016.[13] The LGA is inhabited by the Urhobos mainly and people from other ethnic groups. Majority of the people dwell in the rural areas and are farmers, fishermen and traders. There are three state government-owned hospitals and 16 local government Primary Health Centers (PHCs) in the LGA. The three state government hospitals are located in Eku, Abraka and Isiokolo town. The 16 PHCs are spread across the 11 wards in the LGA with an average of one per ward. As at January 2020, the population of healthcare workers (HCWs) in the government-owned health facilities within the LGA is 252 with staff to patient ratio of approximately 1:2000. Shift duties are done by nurses and health assistants in the state government-owned hospitals with a total of three shifts in a 24 hour period. Morning shifts are done between 8am-2pm, evening shifts between 2pm-6pm and night shift between 6pm-8am the next morning.

Eku Baptist Hospital, formerly a mission hospital but now a state government-owned hospital serves as a referral centre to the other government hospitals and the PHCs Primary and secondary healthcare services are included in the list of services that are offered. The community healthcare department runs outreach health programs, family planning clinics, immunization clinics, and other primary healthcare operations. Family medicine, internal medicine, dentistry, obstetrics and gynecology, surgery, child health, radiology, and laboratory medicine all provide secondary health care services. There are facilities for training and research at the hospital. It is a facility for family medicine residency training. The state government hospitals are supervised by the State Ministry of Health through the Delta State Hospitals Management Board (HMB). Policies governing the state government hospitals are made by the State Ministry of Health and implemented through the state HMB.

Study Design

This study was a descriptive cross-sectional survey.

Study Population

The study included Doctors, Nurses, Health Assistants and Community Health Extension Workers (CHEWs) in government–owned health facilities in Ethiope East LGA, of Delta state.

According to information obtained from the Hospitals Management Board of the Ministry of Health in Delta State, the population of HCWs in the three-state government-owned hospitals is 191 while the population of HCWs in the 16 local government-owned PHCs was 61 as of January 2020 (Table 1).

TABLE 1: HEALTHCARE WORKERS IN GOVERNMENT-OWNED HEALTH FACILITIES INETHIOPE EAST LGA

PROFESSION	SECONDARY HEALTH FACILITIES	PRIMARY HEALTH FACILITIES	TOTAL
DOCTORS	30	1	31
NURSES	79	9	88
HEALTH ASSISTANTS	82	40	122
CHEWs	-------	11	11
TOTAL	191	61	252

Therefore the target population was 252, as of January 2020.

Inclusion Criteria

1. All HCWs (Doctors, Nurses, Health assistants and Community Health Extension workers) in the government-owned health facilities in Ethiope East LGA.
2. HCWs who have worked for at least two years (probation period in civil service rules)
3. HCWs that consent to partake in the study.

Exclusion Criteria

1. All HCWs in the study population who were obese prior to employment, as well as those with cardiovascular disease, cerebrovascular disease, and other significant chronic diseases.
2. Pregnant women were excluded from the study.
3. HCWs who are not up to the mandatory 2 years of probation.

Duration of Study

The study was conducted for three months and ten days from 2nd November 2020 to 5th of February 2021.

Sample Size Determination

The sample size was calculated using Leslie Kish's formula for descriptive studies (formula for sample size when estimating a single proportion at a certain accuracy).

$n = Z^2pq/d^2$, where

n = minimum sample size

Z = standard normal deviate set at 1.96, corresponding to 95% confidence interval.

p = prevalence of burnout among health workers in South-East Nigeria is 20.6%.[42]

q = 1.0 – p (i.e 1- 0.21)

d = degree of precision desired, usually set at 0.05 (since the degree of accuracy is usually set at 95%).

Therefore,

$n = (1.96^2)\ (0.21 \times 0.79)/\ (0.05)^2$

$= 254.92 \approx 255$

To adjust for a population less than 10,000, the formula, nf =

$$nf = \frac{n}{1+\frac{(n)}{(N)}}$$

nf = The desired sample size when the population is less than 10,000
N= The population size (252)
n = sample size when the study population is > 10,000

≈

$$\text{Therefore nf} = \frac{255}{1+\frac{(255)}{(252)}} = 126.7$$

Calculated sample size = 126.7 : ≈ 127

Calculated sample size = 126.7 : ≈ 127
Provisions was made for non-response or missing data to the tune of 10% to arrive at the minimum sample size. An adjustment factor, y calculated from the formula:
y = 100/(100 – NR), where NR = non-response rate.
y = 100/(100- 10) = 1.1
Therefore, minimum sample size
= 127 × 1.1 = 139.7 ≅ 140

Ethical Consideration

Ethical clearance was obtained from the Research and Ethics Committee of Eku Baptist Hospital, Eku (HMB/EBH/EC/03/2020). Written informed consent of the HCWs was sought and a high level of confidentiality was ensured. Privacy was maintained by omitting the names of the respondents on the questionnaire. The responses volunteered by the respondents were held in strict confidence. The right of the participants as regards research was fully respected. An information sheet describing the study was given to the study participants. All information collected was anonymous and was kept confidential. There was no cost and no known risks to the study participants. Respondent were informed that they had the right to decline participation or to withdraw from the study at any point in time without bias. In addition, approval was obtained from the Faculty of Family Medicine, West African College of Physicians, before the commencement of the study.

Sampling Technique/Procedure

The stratified (proportionate) random sampling technique was employed in this study. Stratification of HCWs was made into two subgroups, the state government hospitals and the local government PHCs. The total population size was 252, out of which 191 are state workers and 61 are PHC workers. A list of HCWs in state government-owned health facilities in Ethiope-east LGA was gotten from the Administrative Department office of the HMB (for the state workers) as well as the Administrative Department of the Ethiope-east LGA Headquarters (for the PHC workers). One hundred and forty (140) HCWs were selected for the study from sample size determination. For an apt representation of this sample in the two groups, a proportional allocation of the sample size was done by calculating the sampling ratio of each subgroup (Table 2 and 3) in the total population which is given as =n/N

Where n = Desired sample size (140)
N= Total population size (252)
Therefore the sampling ratio =140/252
Sample size for state government hospitals = 140/252 × 191 =106
Sample size for local government PHCs = 140/252 × 61 = 34

Table 2: Sample Size Determination for each subgroup of HCWs in State Government owned health facilities

POPULATION(STATE GOVERNMENT WORKERS)	SAMPLING FRACTION	SAMPLE SIZE TO STUDY
DOCTORS (30)	140/252×30	16.6 ≈ 17
NURSES (79)	140/252× 79	43.8 ≈ 44
HEALTH ASSISTANTS (82)	140/252×82	45.1 ≈ 45

Table 3: Sample Size Determination for each subgroup of HCWs in LG-owned health facilities

POPULATION (LOCAL GOVERNMENT PHC WORKERS)	SAMPLING FRACTION	SAMPLE SIZE TO STUDY
NURSES (9)	140/252×9	4.9 ≈ 5
HEALTH ASSISTANTS (40)	140/252×76	22.2 ≈ 22
COMMUNITY HEALTH EXTENSION WORKERS (11)	140/252×11	6.05 ≈ 6

The expected number of HCWs in the state government health facilities gotten from the HMB (191) was used as the sampling frame. The members of the subgroups for each HCF will be selected by simple random selection. This was done by using a table of random numbers until the desired sample size (106) of the study was realized.

The doctor was purposively selected being the only HCW of its kind in the local government PHCs in Ethiope-East LGA. The members of the subgroups (nurses, health assistants and CHEWs) were selected by simple random selection. This was by using table of random numbers until the desired sample size (33) to be studied was realized.

Procedure/Method of Data Collection

The measurement of height, weight, and belly circumference were done using standard procedures. The collection of data was done during working hours of the day. A total of 140 questionnaires were administered, properly filled and analysed. This represents 100% of the total number of questionnaire administered.

Study Instruments:

Questionnaire:

A questionnaire consisted of two sections. Section A consisted of socio-demographic and work-related determinants of burnout such as age, gender, marital status, level of education, number of children, years of service, occupational health category. The questions on work-related determinants of burnout were adopted from a study conducted on the risk factors for burnout among Healthcare Workers (HCWs) in an Urban Hospital in Nigeria.[9]

Section B focused on the level of burnout among HCWs. Maslach burnout inventory-human services

survey (MBI-HSS) is a standardized validated tool for assessing burnout.[42] The tool has been validated in Nigeria.[15-17] The MBI-HSS tool consist of three domains. The first domain deals with emotional exhaustion and contained seven questions. The second domain addresses depersonalization and contained seven questions. The third domain assesses reduction in personal accomplishment and contained eight questions. The total inventory questions were twenty-two. Each question was rated according to the frequency of occurrence on a seven-point scale from zero (never) to six (every day). Answers to the MBI-HSS scale were used to classify the participants as having low, average or high levels of burnout in each dimension.

Emotional Exhaustion: low≤ 13, average 14-26, high ≥ 27.

Depersonalisation:low≤ 5, average 6-9, high ≥ 10

Personal Achievement: high≥ 33, average 34-39, low ≤ 40 (Inverse scale).

The face validity of the work-family balance scale was assessed using expert judgment by five experts in the Community Health Department, at College of Medicine Delta State University Abraka. Through the expert judgment, construct validity was ascertained to establish the extent to which the study instrument measured role related expectations in both work and family domains among the study participants. Data on work-family balance scale was entered into SPSS (version 23) to determine its reliability with the pretested questionnaire. The Cronbach alpha coefficient of the work-family balance scale was 0.76.

Clinical Measurement

Measurement of Abdominal Circumference

The abdominal circumference of the study participants was measured using a flexible tape rule.[18] The measure was taken at the midpoint of the distance between the lower edge of the rib cage and the iliac crest, at horizontal plane.[18] The study participants were measured in standing position, arms at their sides, feet together, weight divided between the legs, and eyes on the horizon.[18] The measurements were taken at the end of a normal expiration.[18] The measure were approximated to the nearest 0.1centimeters.[18] Abdominal circumference was interpreted as > 88cm abnormally high for women and 88cm normal for women while > 102cm was abnormally high for men and 102cm normal for men.[18]

Measurement of Weight and Height

Participants in the study had their height and weight assessed using a stadiometer attached to a regular weighing scale. The gadget was created by Health Medical Equipment, England in 2009, and has the model number RGZ-160. In order to measure the weight, the study participants removed their shoes, heavy clothing, accessories, and everything from the pocket.[19] The study participants stepped on the weighing scale and stood motionless in the middle of the scale platform with the feet slightly apart and the body weight distributed equally on both feet.[144]Participants were measured without shoes and standing upright with their head positioned in the Frankfurt horizontal plane.[19] The weight was read on the scale and recorded to the nearest 0.1 number in kilogram (kg). The study participants stood on the combined weighing scale and stadiometer with their heads facing forward to measure their height, taking off their shoes and any headgear (if any).[19] The shoulder were level, arms by the side, and breathing at a relaxed pace. The eyes of the examiner were level with the horizontal arm of the stadiometer being used to mark the height.[19]The height was recorded as the mark on the junction of the fixed and sliding parts of the stadiometer. The height was read to the nearest 0.1 number in centimetres and recorded in meters to one decimal place.The body mass index was calculated from the weight and height data using the Formula: BMI= weight (kg)/height (m^2).[20] Underweight is defined as having a BMI below 18.5, Normal is defined as having a BMI between 18.5 and 24.9, Overweight is defined as having a BMI between 25.0 and 29.9, and Obese is defined as having a BMI of 30.0 and above.[20]

Data Analysis

The data obtained was sifted, coded serially, and analysed using statistical package for social sciences (SPSS) version 26.0 software. Socio-demographic data, occupational activities and work place morbidity of respondents were presented in frequency tables and

percentages while the sources of occupational burnout were presented in a bar chart. The prevalence of burnout was determined using the three (3) scales of MBI-HSS.

RESULTS

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

The socio-demographic characteristics of the respondents in this study are shown in Table 4. A total of 140 HCWs were enrolled by stratified random sampling. Out of the 140 study subjects, 113 (80.7%) were females and 27 (19.3%) were males giving a male to female ratio of 1:4.0. Study subjects aged 41-50 accounted for 52 (37.1%) of the study population, those aged 31-40 made up 34 (24.3%) of the study population, while those aged 20-30 years and 51-60 years accounted for 31 (22.2%) and 23 (16.4%) respectively. The majority of the study subjects were married (70.7%), had tertiary level of education (79.3%) and had 1-3 children (76.4%). The mean age of the respondents was 40.6 ± 9.7 years, the age range was 20-60 years while the median age was 41 years.

Table 4: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Characteristics	Frequency N = 140	Percentage (%)
Age Group		
20-30	31	22.2
31-40	34	24.3
41-50	52	37.1
51-60	23	16.4
Total	140	100
Gender		
Male	27	19.3
Female	113	80.7
Total	140	100
Marital Status		
Single	30	21.5
Married	99	70.7
Divorced	1	0.7

Separated	3	2.1
Widow	7	5.0
Total	140	100
Number of Children		
None	27	19.3
1-3	106	76.4
4+	6	4.3
Total	140	100.0
Family Size		
<5	88	62.9
5	49	35.0
>5	3	2.1
Total	140	100.0
Religion		
Christianity	137	97.9
Islam	3	2.1
Total	140	100.0
Highest Level of Education		
Primary	1	0.7
Secondary	19	13.6
Tertiary	111	79.3
Skilled	9	6.4
Total	140	100.0

CADRE OF HEALTH CARE WORKERS / OCCUPATIONAL RELATED ACTIVITIES OF THE RESPONDENTS.
Table 5 shows the cadre of health care workers/ occupational related activities of the respondents. Most of the doctors were medical officers; nurses were nursing officers (10.1%), health assistants (20.7%), and senior community health extension workers (2.9%). Most of the respondent have worked for 7-11 years, worked>8 hours per day (37.9%), and >five days in a week (42.1%).

TABLE 5: CADRE OF HEALTH WORKERS/ OCCUPATION ACTIVITIES OF RESPONDENTS

Occupational Characteristics	**Frequency N = 140**	**Percentage (%)**
Doctors		
Consultant	4	2.9
Resident Doctors	6	4.3
Medical Officers	8	5.7
Nursing Cadre		
Nursing Officer	14	10.0
Senior Nursing Officer	10	7.1
Principal Nursing Officer	11	7.9
Chief Nursing Officer	10	7.1
Health Assistant Cadre		
Health Assistant	29	20.7
Senior Health Assistant	12	8.6
Principal Health Assistant	18	12.9
Chief Health Assistant	11	7.9
Junior CHEW	3	2.1

Senior CHEWS	4	2.9
Total	140	100.0
Duration of Services		
2-6	34	24.3
7-11	45	32.1
12-16	33	23.6
17-21	12	8.6
22-26	10	7.1
27-31	6	4.3
Total	140	100.0
Work hours		
<8 Hours	47	33.5
8 Hours	40	28.6
> 8 Hours	53	37.9
Total	140	100.0
Days of Work Per Week		
< 5 Days	46	32.9
5 Days	35	25.0
> 5 Days	59	42.1
Total	140	100.0

WORKPLACE MORBIDITY/ LIFESTYLE OF RESPONDENTS

The workplace morbidity/lifestyle of respondents is presented in Table 6. Six (6) of the respondents (4.3%) were diagnosed with health problems prior to commencement of their current job and 38 (27.1%) were diagnosed with health problem on their current job. The majority of the respondents had musculoskeletal pain while 7.9% of the respondents had diabetes mellitus. As a result of stress in the workplace, 72 (51.4%) were overeating, 40 (28.6%) were inactive, 2 (1.4%) had increased use of alcohol.

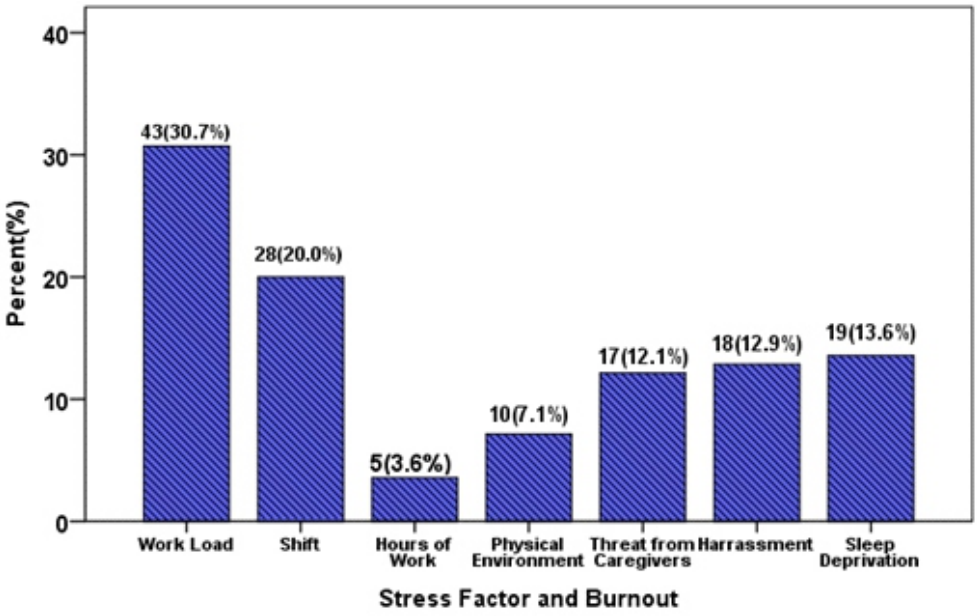
TABLE 6: WORKPLACE MORBIDITY EXPERIENCED BY RESPONDENTS

Characteristics	Frequency N = 140	Percentage (%)
Diagnosed chronic health problem prior to commencement of job		
Yes	6	4.3
No	134	95.7
Total	140	100.0
Types of Health Problem prior to commencement of job		
None	134	95.7
Hypertension	4	2.9
Peptic Ulcer	1	.7
Diabetes	1	.7
Total	140	100.0

Diagnosed chronic health problem on current job		
Yes	38	27.1
No	102	72.9
Total	140	100.0
Type of health problem after commencement of Job		
None	102	72.9
Hypertension	5	3.5
Diabetes	11	7.9
Musculoskeletal disorders	22	15.7
Total	140	100.0
Lifestyle of Respondents		
Overeating	82	58.6
Inactivity	47	33.5
Others	11	7.9
Total	140	100.0

SOURCES OF OCCUPATIONAL BURNOUT IN THE WORKPLACE OF THE RESPONDENTS

The sources of occupational burnout in the workplace of respondents is shown in Figure 1. The work load was the major (30.7%) source of burnout in their workplace, 28 (20.0%) expressed shift work, 19 (13.6%) showed sleep deprivation, and 18 (12.9%) showed harassment from patients, caregivers, supervisors, co-workers and subordinates. From another perspective, physical environment, threat from caregivers, and workhours had 10 (7.1%), 17 (12.1%), and 5 (3.6%) respectively as sources of burnout to the respondents.



BODY MASS INDEX (BMI) OF THE RESPONDENTS

The BMI of the respondents in presented in Table 7. 22.9% of the respondents had normal BMI while the rest (77.1%) had above-normal BMI. Out of those elevated BMI, 50.0% were overweight and 27.1% were obese

Table 7: Body mass index of respondents

BMI (Kg/m^2)	Frequency N= 140	Percentage (%)
Normal (18.5-24.99)	32	22.9
Overweight (25-29.9)	70	50.0
Obese (≥30)	38	27.1
Total	140	100.0

ABDOMINAL CIRCUMFERENCE OF RESPONDENTS

The abdominal circumference of respondents is shown in Table 8. Majority (17.8%) of the male respondents had normal abdominal circumference and the majority (46.4%) of the female respondents had normal abdominal circumference. Four (2.9%) of the male respondents had high abdominal circumference while 32.9% of female respondents had high abdominal circumference.

TABLE 8: Abdominal circumference of respondents

AC (cm)	Frequency N= 140	Percentage (%)
AC Male		
>102 (high for Men)	4	2.9
<102 (Normal for men)	25	17.8
AC Female		
>88(High for Women)	46	32.9
<88(Normal for Women)	65	46.4
Total	140	100.0

PREVALENCE AND PATTERN OF OCCUPATIONAL BURNOUT AMONG RESPONDENTS

Table 9 shows 50.7% of respondents had a high level of emotional exhaustion, 42.9% of respondents had high depersonalization scores and 36.4% had low levels of personal achievement with an overall burnout prevalence of 44.7 ≅ 45%

Table 9: Occupational burnout scores of respondents using the Maslach Burnout Inventory-Human Services Survey

Occupational Burnout	Frequency N=140	Percentage (%)
Emotional Exhaustion		
<13 (Low)	34	24.3
>13-<27 (Moderate)	35	25.0
>27 (High)	71	50.7
Total	140	100.0
Depersonalization		
<5	56	40.0
6-9	24	17.1
>10	60	42.9
Total	140	100.0
Personal Achievement		
<33	51	36.4
34-39	31	22.2
>40	58	41.4
Total	140	100.0

DISCUSSION

Socio-demographic Characteristics of respondents

The findings in the study revealed that 80.7% (Table 4) were females. This is similar to a study conducted on occupational burnout among nurses in national referral hospitals in South Africa[21] and in contrast to a study conducted on burnout among resident doctors in a tertiary hospital in Nigeria.[22] The possible rationale for higher male respondents in the study conducted on occupational burnout among resident doctors in Nigeria may be attributed to the study population with slightly higher surgical residents as respondents. Surgical residency is mainly dominated by males in Nigeria as female doctors lack interest in surgical careers possibly due to the impact of the surgical training on their time for family and other social engagement, heavy workload, involvement in physical effort, and lack of role models.[23] The gender distribution found in this study is keeping with the fact that most females are into nursing and health assistant professions which were the prominent professions in this study.

Majority (70.7%) of the respondents were married (Table 4). This is similar to a study conducted on the risk factors for burnout among healthcare workers in an urban hospital in Jos, Nigeria[10]and in contrast to a study done on prevalence and correlates of job stress among junior doctors in University College Hospital, (UCH) Ibadan, Nigeria.[24] The rationale for higher proportion of single respondents in the study conducted in UCH[24] may be due to the study population of junior doctors who may be relatively younger and aspiring for career progression rather than getting married. The marital status distribution found in this study could be due to the study location and gender distribution as rural women tends to marry at relatively younger age compared to their counterparts in urban area of Nigeria.

Majority (76.4%) of the respondents had 1-3 children and 62.9% of the respondents had less than five family size (Table 4).This is similar to a study conducted on burnout among Orthopaedic trainees in Australia[25] and also similar to study done conducted on burnout among doctors in university of Portharcourt teaching hospital, Nigeria.[26] The possible reason for the number of children found among respondents could be linked to the current economic hardship in the country as most families are downsizing to reduce financial burden.

Christianity was the major (97.9%) religion practiced by respondents (Table 4). This is similar to a study conducted on burnout among healthcare professionals in Ghana[27] and at variance with a study conducted on the magnitude and risk factors of burnout among primary health care physicians in Saudi Arabia.[28] The reason for higher Muslim respondents in the study conducted in Saudi Arabia could be linked to the study location where majority of the populace are Muslims. It has been found that workplace spirituality and religion has a positive effect in reducing employee burnout.[27]

The study population had a mean age of 40.6 $\pm$ 9.7 years with study subjects aged 41-50 accounting for majority (37.1%) of the respondents (Table 4). This is similar to a study conducted by Stanetic and colleagues on burnout among Family Physicians in Europe which reported a mean age of 45 years[29] and in contrast to a study conducted on burnout among resident doctors in Benin-city, Nigeria which reported a mean age of 33.9 years.[22] The possible reason for the finding in this study may be due to the competitive nature of securing job placement in Government-owned health facilities in Nigeria.

Majority (79.3%) of the respondents had tertiary education as their highest level of education (Table 4). This is similar to a study done by Wisetborisut and colleagues on shift work and burnout among healthcare workers[30] and also similar to a study done by Aguwa et al on job burnout among bankers and health workers in Aba Abia state Nigeria.[31]The rationale for higher tertiary education among the respondents in this study could be due to training programmes which nurses and health assistants (account for the higher population in the study) undergo periodically to get to certain promotion in civil service.

Cadre/ Occupational Activities of Respondents

Nurses (32.1%) and health assistants (50%) accounted for majority of the cadre of respondents (Table 5). This is similar to a study conducted on burnout among healthcare workers in a tertiary hospital in Ethiopia[32] and in contrast to a study conducted on comparing burnout among physicians, nurses, technicians and health informatics in Turkey.[33] The possible rationale for higher number of nurses and health assistants could be attributed to the study location (General hospitals and Primary health centre) as Primary health center in Nigeria are mainly manned by nurses. The nursing profession in Nigeria is facing an increase in the annual turnover rate as a result of labour migration (brain-drain), unattractive work conditions, poor collegial relationships, and poor autonomy and control over practice.[32]

Duration of services among majority (32.1%) of respondents was 7- 11 years (Table 5). This is similar to a study conducted on burnout among healthcare workers in Ghana[27] which revealed that most respondents had an average of 10.5 years of experience and at variance with a study conducted in Singapore on Burnout among healthcare workers which revealed that most respondents had less than 5 years of work experience.[34] The finding in the study conducted in Singapore may be related to the younger age group of respondents in the study.

Most (37.9%) of respondents worked for > 8hours per day and 42.1% of the respondents worked for > 5 days per week. This is similar to a study done on prevalence and associated factors of burnout among psychiatric trainees in 22 countries in Europe[35] and also similar to a study conducted by Altaf and colleagues on burnout among internal medicine physicians in Pakistan.[36] The findings in this study where majority of the respondents worked for longer working hours and working days could be due to shift work done by nurses and health assistants and on call duty done by medical officers and resident doctors. Longer working hours are known to affect health negatively and impact on job productivity.[37]

Workplace Morbidity and Lifestyle of respondents

From workplace morbidity experienced by respondents, 4.3% of respondents were diagnosed with health problems prior to commencement of their current job. Of those that experienced health problems after commencement of the job, majority (15.2%) had musculoskeletal disorders. This was similar to the finding in a study conducted among Iranian nurses on burnout and MSDs[38] which revealed that majority of respondents had musculoskeletal disorders and also similar to a study done on musculoskeletal disorders, job demands and burnout among emergency nurses in Egypt.[39]The findings in this study may be attributed to prolonged sitting positions during consultations accompanied with poor ergonomic status in their workplace. Long working hours, shift work, heavy workload, high patient-to-staff ratio, and slips/falls have been implicated as risk factors for MSDs among HCWs.[40]

The findings (Table 6) also revealed that 7.9% of respondents had type 2 diabetes mellitus (DM) after commencement of job. This is similar to a study conducted by Sui et al on the relationship between type 2 DM and work-related stress in China.[41] and in contrast to a study conducted by Cosgrove and colleagues on work related stress and type 2 DM in the United Kingdom which revealed no relationship between work-related stress and type 2 DM.[42] The poor eating attitude (51.4%), physical inactivity (28.6%) and increased alcohol use (1.4%) engaged by HCWs in this study (from table 4.12) as a result of stress/burnout in the workplace may have contributed to the development of hypertension and DM seen in this study.

Sources of occupational burnout in the workplace of the respondents

Majority of the respondents reported that workload (30.7%) and shift work (20.0%) were the major sources of stress in their workplace (Figure 1). Workload has been considered as the first stage of development of occupational burnout and also a key element of organizational stress that resulted in occupational burnout of health care workers.[6,43] Among nurses in South Africa, workload was a significant predictor of emotional exhaustion as measured by the MBI—HSS.[7] High workload was also a major work stressor in a study done among health workers and bankers in Aba, Southeast Nigeria.[31]

Prevalence and Pattern of Occupational Burnout among respondents

I. Pattern of Occupational Burnout among respondents

The pattern of occupation burnout using Maslach Burnout Inventory- Human Services Survey on table 8 revealed that 50.7% of respondents had high level of emotional exhaustion (EE), 42.9% had high depersonalization (DP) scores and 36.4% had low levels of personal achievement (PA). This was similar to a study conducted on burnout among resident doctors in a developing country (Pakistan) which revealed high EE scores of 60%, high DP scores of 38%, and reduced PA scores of 32%[44] and in contrast to a study to conducted on burnout among health care workers in a Paediatric health care system in the United States of America which revealed high emotional exhaustion scores of 13%, high depersonalization scores of 4.5% and reduced personal achievement scores of 15.5%.[45]. The difference in findings in the study conducted in the Paediatric health care system[31] and the findings in this study may be attributed to different health systems and different study locations. The implication of these findings is that occupational burnout has physical and psychological consequences to the healthcare worker.

II. Emotional Exhaustion

Emotional Exhaustion (EE) was the most reported pattern of burnout among respondents in this study (50.7%). This is similar to a study done in Benin-city Edo state among resident doctors that reported higher levels of EE among respondents[22] and in contrast to a study done among nurses in a tertiary hospital in Nigeria which reported higher levels of reduced personal achievement.[11] The high level of emotional exhaustion among respondents may be connected with workload (The major source of occupational burnout reported by respondents in this study) created by the acute shortage of health workers in government-owned health facilities in Ethiope East LGA. In fact, a survey reveals that among the top nations in the world with the highest rates of health worker migration is Nigeria. As a result, the health professionals may have experienced a significant level of emotional weariness. Additionally, low pay, inadequate and insufficient medical supplies and equipment, and pressure from patients and their families may have

a greater depletion effect on the responders' cognitive and emotional resources.[46]

III. Depersonalisation and Personal Achievement

High DP scores was reported among 42.9% of the respondents, while 36.4% of the respondents had low PA scores. This is similar to a study conducted among resident doctors in a tertiary hospital in Nigeria which reported reduced personal achievement of 61.8% and depersonalization scores of 57.8%.[16] Similarly, a study conducted on burnout among hospital Nurses in Nigeria reported reduced personal achievement at 40.0%, and depersonalization at 20%.[47] The findings in this study may be attributed to shift work schedules (shift work accounted for 20% of the sources of occupational burnout among respondents) of nurses and health assistants in this study. Wisetborisut and colleagues reported that shift work predicted burnout among healthcare workers in Thailand.[30] The implication of high DP scores and low PA scores has been linked to anxiety, avoidance of decision making, change in appetite, fatique, chronic headaches, chronic gastrointestinal problems, neglect of personal needs and behavioural changes.[43] Depersonalization, a negative attitude toward patients and the profession that manifests as psychological distance, may be a poor coping mechanism against the typically overly demanding but underpaying patients and work environments in Nigerian public health institutions.[43]

IV. Prevalence of Occupational Burnout among respondents

The occupational burnout prevalence of this study was 45.0% and is similar to burnout prevalence of 40-80% in a systematic review of burnout among healthcare provider in sub-Saharan Africa,[7] 41.7% among resident doctors in Benin city Nigeria,[22] 53% among Australian Orthopaedictrainees,[25] 34.8% among primary care physicians in Jos,[48] 51.6% among orthopaedic surgeons in Lagos Nigeria,[49] and 42% among healthcare workers in some service occupation in Nigeria.[50] Higher burnout prevalence of 87.7% was reported among hospital workers of Bingham Teaching Hospital Jos.[9] and 65% among emergency medicine residents inChicago.[51] The difference between the finding in this study and the findings in Bingham Teaching Hospital[9] could be attributed to the fact that this study reported the prevalence of burnout in three dimensions (EE, DP, PA) while the study done in Bingham Teaching Hospital reported burnout generally among hospital healthcare workers. The study tool used to assess burnout in Bingham teaching hospital was the Oldenburg Burnout Inventory (OLBI) tool as against Maslach Burnout Inventory- Human Services Survey that was used in this study. In contrast, lower prevalence of burnout was reported among military doctors in Pakistan at 27%[52] and among registrars and medical officers in South Africa at 15.6%.[53] The difference in this study and the studies with lower prevalence[52, 53] may be due to the nature of the study population comprising of doctors, nurses, health assistants and community health extension workers as against the studies with lower prevalence with study population of doctors (Military doctors, registrars and medical officers).

In Nigeria, lower prevalence of burnout was found among clinical staff (20.1%) and non-clinical (managerial) staff (12.5%) in a federal teaching hospital[5] and 20.6% among healthcare workers in Aba South local government area of Abia State Nigeria.[31] This difference found in this study and the studies in Nigeria with lower prevalence of burnout may be attributed to the study location of this study which was mainly rural with poor social infrastructure (bad roads, poor lighting) security challenges (kidnappings), poor staffing, and work overload. As health

systems struggle with human resource shortages, resource allocation issues, work overload, and long working hours, the extent to which these burdens could be potentially decreased through prevention and promotion activities to address burnout among healthcare workers is important.[54]

CONCLUSION

The overall prevalence of occupational burnout at 45% and the pattern of occupational burnout in the three domains revealed that 50.7% of respondents had high level of emotional exhaustion (EE), 42.9% of respondents had high depersonalization scores (DP) and 36.4% had low levels of personal achievement (PA). Health organizations should do their best to reduce occupational burnout among healthcare workers by promoting positive work family balance, and improving staff welfare which can enhance job satisfaction and work proficiency. Also, the hospitals and PHCs management should recruit specialists in stress management to help in the control of stress through counseling and stress reduction workshops.

REFERENCES

1. Elbarazi I, LoneyT, Yousef S, Elias A. Prevalence and factors associated with burnout among health care professionals in Arab countries: A systemic review. BMC Health Service Research.2017;17 (491):1-10.
2. Vitalis F, Tsi H, Miriam A, Chia M, Carlson-barbila S. Prevalence and determinants of burnout syndrome among physicians in Cameroon: A research proposal BMC Res Notes. 2017;10(508):1-4.
3. International Classification of Diseases; 10th Edition World Health Organisation 2016. . Avalaible at: www.Who int/classification / ictio/brose/2016/en#/Z73.0. Accessed 15 April 2018.
4. Poloma S, Tea S, Ignjatovic Z, Klenence K. Burnout among Slovenian family medicine trainees: A cross sectional study. ZdravVerstn. 2012; 81:218-224.
5. Ibikunle PO, Amah E, Useh U. Prevalence and pattern of burnout syndrome among health care professionals in a university teaching hospital. Trop J Med Rcs. 2016; 19(2):144-148.
6. Turki MA, Sami A, Mohammed Z, Motasim B, Mir A. Physician well–being: Prevalence of burnout and its associated risk factors in a tertiary hospital, Riyadh, Saudi Arabia. Ann Saudi Med. 2013; 33 (5):451-456.
7. Dubale BW, Friedman LE, Chemali Z, DeningerJW, Meta DH, Alem A. Systematic review of burnout among health care providers in sub-saharan Africa. BMC Public Health 2019; 19(1247):1-20.
8. Adeolu JO, Yussuf OB, Popoola OA. Prevalence and correlates of job stress among junior doctors in the university college hospital, Ibadan. Ann Ib Postgrad Med 2016; 14:92-8.
9. Ameh PO, Dankyau M. Risk factors for burnout among health care workers in an urban hospital. Nigerian Journal of Family Practice. 2015; 6(1):29-36.
10. Balogun J, Titiloye A. Prevalence and determinants of burnout among physical and occupational therapist in Nigeria. Journal of Allied Health. 2012; 31(3):1-5.
11. Okwaraji FE, Aguwa EN. Burnout and psychological distress among nurses in a Nigerian tertiary health institution. African Health Sciences. 2014; 14(1):237-245.
12. Pindar SK, Wakil MA, Jidda MS, Morakinyo AO, Coker MA. Burnout syndrome and depression among healthcare professionals in Maiduguri tertiary hospitals. Kanem Journal of Medical Sciences 2012; 6(1):23-28
13. National Population Commission of Nigeria. National Bureau of Statistics. 2017. Avalaible at https://www.citypopulation.de>php.

Accessed 10 July 2019.
14. Araoye MO. Research methodology with statistics for health and social sciences. 1st edition. llorin: Nathadex publishers; 2004: 115-129.
15. Adeolu JO, Yussuf OB, Popoola OA. Prevalence and correlates of job stress among junior doctors in the university college hospital, Ibadan. Ann Ib Postgrad Med 2016; 14:92-8.
16. Ogundipe OA, Olagunju AT, Lasebikan VO, Coker AO. Burnout among doctors in residency training in a tertiary hospital. Asian J Psychiatr2014;10:27-32.
17. Lar-Ndam N, MadakiJKA, Pitmang L, Audu MD, Salihu DG. Burnout among primary care physicians in Jos- Plateau North central Nigeria. Nigeria Journal of Family Practice. 2015; 6(2):11-18.
18. Wen YM, Chung YY, Shyang-Rong S, Hong-Jen H, Chi SH, Fu-Chun C et al. Measurement of Waist Circumference. Diabetes Care. 2013; 36(3):1660-1666.
19. Onkst T. How to measure weight & height. Avalaible at www.ehow.com_7364488_ measure-weight-height.htm/. Accessed June 6, 2019
20. Centers for Disease Control and Prevention. About BMI for adults. Last updated July 11 2014. Avalaible from http://www.cdc.gov/ healthyweight/assessing/bmi/adult_bmi/index.html/. Accessed 02/03/2021.
21. CoetzeSk, Wopper HC, Ellis M, Aiken LH. A tale of two systems-nurses practice environment, well-being, perceived quality of care and patient safety in private and public hospitals in South Africa: A questionnaire survey. International Journal of Nursing Studies. 2013; 50(2):162-173.
22. Ogboghodo EO, Oghoritsewarami EM. Assessment of Burnout among resident doctors in Benin city, Edo state Nigeria. Nigerian Postgraduate Medical Journal. 2020; 27(3):215-223.
23. Resident and Student Health: Why Doctors marry Doctors: Exploring Medical Marriages. American Medical Association. Available from: http//www.ama-assn.org/residents-students/residents/students/health/why-doctos/marry-doctors-exploring-medical-marriages. Accessed on the 02/20/2021.
24. Adeolu JO, Yussuf OB, Popoola OA. Prevalence and correlates of job stress among junior doctors in the university college hospital, Ibadan. Ann Ib Postgrad Med 2016; 14:92-8.
25. Manit A, Ashish D, Divan IA. Prevalence of burnout among Australian Orthopaedic trainees: A cross sectional study. Journal of Orthopaedic Surgery. 2014; 22 (3): 374 –377.
26. Ozumba LN, Alabere ID. Burnout among doctors and nurses at University of Porthacourt Teaching Hospital, South-South Nigeria. Archives of Medicine and Health Sciences. 2019; 7(1):61-68.
27. Odonkor ST, Frimpong K. Burnout among healthcare professionals in Ghana: A critical assessment. Biomed Research International. 2020; 16:1-8.
28. Al-Sareai NS, Al-KhaldiYM, Mostafa OA, Abdal-Fattah MM. Magnitude and risk factors for burnout among primary health care physicians in Asir province, Saudi-Arabia. Eastern Mediterranean Health Journal. 2013; 19(5):426-434.
29. Stanetic K, Tesanovic G. Influence of age and length of service on the level of stress and burnout. Med Pregl. 2013; 3(4):153-162.
30. Wisetborisut A, Angkurawaranon C, Jiraporncharoen W, Uaphanthasath R, Wiwatanadate P. Shift work and burnout among health care workers. Occupational Medicine. 2014; 64:279 – 286.
31. Aguwa E, Ntuka I, Arinze O. Assesment of burnout among health workers and bankers in Aba South Local Government Area, Abia

State, South East Nigeria. Niger J Clinpract. 2014; 17:296-302.
32. Biksegn A, Kenfe T, Matiwos S, Eshetu G. Burnout status at work among health care professionals in a tertiary hospital. Ethiop J Health Sci. 2016; 26(2):101-108.
33. Schooley B, Hikmet N, Tarcan M, Yorgancioglu G. Comparing burnout across emergency physicians, nurses, technicians, and health information technicians working for the same organization. Medicine (Baltimore). 2016; 95(10):e2856.
34. Yang S, Meredith P, Khan A. Stress and burnout among healthcare professionals working in a mental health setting in Singapore. Asian Journal of Psychiatric. 2015; 15:15-20.
35. Jovanic N, Podlesek V, Volpe U, Barrrett E, Ferrari S, Rojnic KM et al. Burnout syndrome among psychiatric trainees in 22 countries: Risk increased by long working hours, lack of supervision and psychiatry not being first career choice. Eur Psychiatric 2016; 32:34-41.
36. Altaf AS, Anam S, Rajesh K, Amber T. Assessment of burnout and its factors among doctors using abbreviated maslach burnout inventory. Cureus. 2019; 11(2):e4101.
37. Wong K, Chan HS, Ngan SC. The effect of long working hours and overtime on occupational health: A meta- analysis of evidence from 1998 to 2018. International Journal of Environmental Research and Public Health. 2019; 16:1-22.
38. Gholami T, Pahlavian AH, Akbarzadeh M, Motamedzade M, Moghadam RH, Jeihoon AK. Effect on nursing burnout syndrome on musculoskeletal disorders. International Journal on Musculoskeletal Pain Prevention. 2016; 1(1):35-39.
39. Sorour AS, Abdl El-Maksoud MM. Relationship between musculoskeletal disorders, job demands, and burnout Among Emergency Nurses. Advanced Emergency Nursing Journal. 2012; 34(3):272-282.
40. Centre for Disease Control and Prevention (CDC). Occupational Traumatic Injuries among Workers in Health Care Facilities-United States, 2012-2014. Morbidity and Mortality Weekly Report (MMWR). 2015; 64(15):405-410.
41. Sui H, Sun N, Zhan L, Lu X, Chen T, Mao X et al. Association between work- related stress and risk of type 2 Diabetes Mellitus. A systematic review and meta-analysis of prospective cohort studies. 2016; Avalaible from https://doi.org/10.1371/journal. Accessed on 23rd February 2021.
42. Cosgrove MP, Sargeant LA, CaleyachettyR,GriffiSJ. Work-related stress and Type 2 diabetes: systematic review and meta-analysis. Occupational Medicine. 2012; 62:167-173.
43. Hert DS. Burnout in healthcare workers: Prevalence, impact, and preventive strategies. Local and Regional Anaesthesia. 2020; 13:171-183.
44. Zubairi AJ, Noordin S. Factors associated with burnout among residents in a developing country. Annuals of Medicine and Surgery. 2016; 5(1):60-63.
45. Jacob LM, Nawaz MK, Hood JL, Bae S, Burnout among workers in a Paediatric health care system. Workplace, Health, and Safety. 2012; 80(8):335-343.
46. Arinze D, Nwosu G, OssaiEN, Mba UC, Anikwe I, Ewah R et al. Physician burnout in Nigeria: A multicenter cross-sectional study.BMC Health Services Research. 2020; 20:863.
47. Lasebikan VO, Oyetunde MO. Burnout among nurses in a Nigerian general hospital: Prevalence and associated Factors. International Schlolarly Research Network. 2012; 54(02):1-9.

48. Lar-Ndam N, MadakiJKA, Pitmang L, Audu MD, Salihu DG. Burnout among primary care physicians in Jos- Plateau North central Nigeria. Nigeria Journal of Family Practice. 2015; 6(2):11-18.
49. Coker AO, Adewole OA, Shoga MO, Uzodinma CC. Burnout syndrome among orthopaedic surgeons in Lagos, Nigeria. East Cent Afr J Surg. 2012; 17(2):13-17.
50. Ogungbamila B. Occupational Burnout among Employees in service occupation in Nigeria: Are health workers different? Psychological thought. 2013; 6(1):153–165.
51. James KT, Edward A, Ted R, Bhakti H, Joseph D, Will F, et al. Factors associated with burnout during emergency medicine residency in Chicago. Academic Emergency Medicine Journal. 2014; 21(9):1031-1035.
52. Muhammad AC, Muhammad MK, Muhammad W, Zara ZA, Ahmad IH. Prevalence and associated factors of burnout among military doctors in Pakistan. Pak Armed Forces Med J. 2015; 65(5):669-73.
53. Sirsawy U, Steinberg WJ, Raubenheimer JE. Levels of burnout among registrars and medical officers working at Bloemfontein public healthcare facilities. South African Family Practice. 2016; 58(6):213-218.
54. Dyrbye LN, Shanafelt TD, Sinsky CA, Cipriano PF, Bhatt J, Ommaya A, et al. Burnout among health care professionals: A call to explore and address this underrecognized threat to safe, high-quality care. NAM Perspectives. 2017. Avalaible at www://nam.edu/burnout-among-health-careprofessionals-a-call-to-explore-and-address-this-underrecognized-threat-to-safe-high-quality-care. Accesed 20 July 2018.

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