Burnout syndrome among healthcare Workers in A tertiary health centre in southeast Nigeria

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ABSTRACT

Background: The intensive care unit (ICU) represents the pinnacle of patient care, and subjects healthcare professionals to heightened job-related stress, emotional fatigue, and a diminished sense of personal achievement, collectively known as burnout syndrome. This global phenomenon poses risks, and potential impacts on the Quality of Life of healthcare providers.

Aim: This study aimed to assess the prevalence of Burnout syndrome (BOS) among healthcare workers in the Intensive Care Units (ICUs) and other selected units in Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi.

Methodology: A cross-sectional study was conducted involving 296 consenting participants after approval from the ethics and research committees at NAUTH, Nnewi. They were selected using a multistage sampling method. Data were collected with a structured self-administered questionnaire adopted from the Maslach Burnout Inventory (MBI) and analysed using Statistical Package for Social Sciences (SPSS) version 25.0. The level of significance was set at $p < 0.05$.

Results: The prevalence of burnout among participants was 53.7%. Further analysis of the domains of burnout shows that 34.4% of respondents have a high degree of emotional exhaustion, 18.6% show a high degree of depersonalization and 52.7% of respondents show a poor degree of personal accomplishment. Female health workers have a higher burnout prevalence 57.1% than their male counterparts 48.8%.

Conclusion: This study reveals a high prevalence of burnout among healthcare personnel in ICUs and other selected units at NAUTH, with significant emotional exhaustion, depersonalisation, and low personal accomplishment, indicating that many healthcare workers feel emotionally drained, detached from patients, and lack fulfilment in their roles.

Keywords: Intensive Care Units (ICUs); burnout syndrome; healthcare workers; quality of life; Nigeria

Introduction

The recognition of Burnout Syndrome (BOS) as a significant psychological issue in the professional domain has deepened over the years, escalating notably in recent times.[1] This phenomenon, described nearly fifty years ago, is characterised by three distinctive symptoms: emotional exhaustion, depersonalisation, and a diminished sense of personal accomplishment in the workplace.[2-3] Researchers, following Freudenberger's initial description in 1974, have endeavoured to define BOS, with Maslach et al. characterising it as a multifaceted illness involving emotional tiredness, dehumanisation, and a lack of personal accomplishment at work.[4-5]

Until recent years, the detrimental effects of working in stressful environments, particularly in the intensive care unit and healthcare at large, were not widely acknowledged.[6-8] Noteworthy national surveys conducted over a decade apart revealed enduring concerns among physicians, with burnout observed in 46.5% of critical care physicians in French intensive care units in 2004 and 44% of U.S. physicians, including 44% of critical care physicians, in 2019.[9-10] Prevalence rates, reaching up to 37.23% in specific populations such as medical students and 51% to 71% in medical oncologists, underscore the widespread

nature of this issue.[11-13] Similar trends were observed globally, with burnout rates reaching 46.5% in France and 62% in Australia and New Zealand among ICU healthcare professionals.[14-16] In Sub-Saharan Africa, evidence points to poor health service quality linked to healthcare workers' job satisfaction and motivation levels.[2,17]

BOS extends beyond healthcare, recognised as an occupational hazard affecting various people-oriented professions, with high-stress jobs, particularly those caring for critically ill patients, more prone to burnout.[18-20] Frontline physicians in the United States, including family medicine, emergency medicine, and general internal medicine practitioners, report rates exceeding 40%.[21-22] Health professionals in African nations are notably experiencing the highest levels of burnout, with rates ranging from 25-75% among doctors in practice and training globally.[21,23-24]

The development of BOS is attributed to a balance of personal characteristics and work-related issues, particularly workload and time pressure, identified as major contributors.[18.20,.22] Gradual symptom development, from emotional stress to job-related disillusionment, culminates in the classic triad of exhaustion, depersonalization, and reduced personal accomplishment.[25]

The impact of BOS is profound, affecting clinicians, patients, and health services. It leads to reduced productivity, increased absenteeism, and higher medical expenses.[26-27] Linked to prescription errors, decreased medical service quality, depression, and substance abuse among professionals, BOS also influences inter-professional relationships.[28]

Despite the widespread recognition of BOS, defining and classifying it remains challenging, lacking explicit criteria and consensus on cut-off points for classification.[29] Various models, such as Maslach's and Grunfeld's, offer perspectives on its development and diagnosis.[5,30] The Grunfeld model, for instance, identifies BOS with high emotional exhaustion, depersonalisation, or low personal accomplishment levels.[30] The Maslach Burnout Inventory (MBI) emerging as the most widely used questionnaire, focusing on dimensions like exhaustion, cynicism, and inefficacy.[4]

However, there is a paucity of research focusing on the prevalence of BOS among healthcare workers in high-stress units within the context of tertiary health centres in South-East Nigeria. This research helps in understanding the complexities and far-reaching implications of burnout which is crucial for developing comprehensive strategies to address and mitigate this pervasive issue in professional settings. Therefore, this study aims to assess the prevalence of BOS among Intensive Care Units (ICUs) and other selected units in Nnamdi Azikiwe University Teaching Hospital (NAUTH) Nnewi.

Materials and Methods

Study Location

The research was carried out at the Nnamdi Azikiwe University Teaching Hospital located in Nnewi, a prominent commercial and industrial hub in Anambra State, south-eastern Nigeria. Nnewi, the second-largest and second-most populous city in the state, is characterized by its metropolitan nature, encompassing four distinct local government areas: Nnewi North, Nnewi South, Ekwusigo, and Ihiala. Specifically, Nnewi North is further divided into four autonomous quarters: Otolo, Uruagu, Umudim, and Nnewichi.[31]

As per the 2006 Nigerian census, Nnewi's population was recorded at 391,227, with a subsequent growth rate of 2.1%.[31] However, recent estimates from the World Population Review suggest a population surge to approximately 1,239,186 residents in 2023. Spanning across an expansive area of 1,076.9 square miles (2,789 km^2), Nnewi is a bustling city renowned for its trading activities at the renowned Nkwo Nnewi market, predominantly farming practices, and prevalent use of motorcycles for transportation.[31-33]

The hospital comprises multiple clinical departments and specialty units, including Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics, Family Medicine, Psychiatry, and Intensive Care, among others.

NAUTH is staffed by a multidisciplinary team of healthcare professionals, including consultants, resident doctors, nurses, pharmacists, laboratory scientists, and allied health workers. It functions as a training ground for medical students, interns, and postgraduate residents, offering a wide range of clinical, educational, and research services.[32-32]

Study Design

The research adopted a descriptive cross-sectional approach, spanning from July 1 to August 1, 2023. It encompassed a cohort of 296 healthcare professionals. The study centred on specific departments within the Nnamdi Azikiwe University Teaching Hospital, Nnewi, including the Intensive Care Units, Accident and Emergency wards, Theatre, Children's Emergency Room (CHER), and the Special Care Baby Unit (SCBU).

Study Population

The study population comprises all eligible consented healthcare personnel working in Intensive Care Units and other selected units like the Accident and Emergency (A&E) wards, Theatre, Children's Emergency Room (CHER) and Special Care Baby Unit (SCBU) in Nnamdi Azikiwe University Teaching Hospital, Nnewi. Currently, the population of all healthcare personnel working in Intensive Care Units and other selected units like the Accident and Emergency (A&E) wards, Theatre, Children's Emergency Room (CHER) and Special Care Baby Unit (SCBU) is 1072 with 390, 458, 79, 85 and 60 being Doctors, Nurses, Pharmacists, Med Lab Scientists and Health Assistants respectively. Participants were recruited from the total number of healthcare personnel and selected by Stratified Sampling Technique and a Simple Random Sampling technique.

Exclusion Criteria

All healthcare personnel with less than 6 months of active working period in intensive care units and other selected units like the Accident and Emergency (A&E) wards, Children Emergency Room (CHER) and Special Care Baby Unit (SCBU) in Nnamdi Azikiwe University Teaching Hospital, Nnewi.

Sample Size Determination

The sample size for this study was determined using the Cochran formulae for studying populations less than 10,000.[34]

Table 1A: Socio-demographic Characteristics of the Respondents

Variable	Frequency (n = 296)	Percentage (%)
Age of respondents		
20 – 30 years	115	38.9%
31 – 40 years	102	34.5%
41 – 50 years	53	17.9%
51 years above	26	8.7%
Mean ± SD	36.17 ± 9.27	
Range	23-58	
Gender		
Male	121	40.9%
Female	175	59.1%
Marital Status		
Single	103	34.8%
Married	186	62.8%
In a relationship	7	2.4%
Academic Qualification		
WAEC Certificate	15	5.1%
Diploma	11	3.7%
Bachelor's Degree	265	89.5%
Master's Degree	4	1.4%
Others	1	0.3%

Table 1B: Socio-demographic Characteristics of the Respondents

Variable	Frequency (n = 296)	Percentage (%)
Profession		
Doctor	92	31.1%
Nurse	114	38.5%
Pharmacist	25	8.4%
Med Lab Scientist	34	11.5%
Health Assistant	31	10.5%
Years of experience		
1 – 5 years	125	42.3%
6 – 10 years	55	18.6%
11 – 15 years	72	24.3%
16 – 20 years	13	4.4%
21 – 25 years	17	5.7%
26 years above	14	4.7%
Income Level		
Below ₦100,000	15	5.1%
₦100,000 - ₦200,000	122	41.2%
₦200,000 - ₦300,000	64	21.6%
₦300,000 - ₦400,000	71	24.0%
₦400,000 - ₦500,000	23	7.8%
₦500,000 above	1	0.3%
UNIT		
ICU	90	30.4%
Other Selected Units		
A & E	72	24.4%
Theatre	37	12.5%
CHER	54	18.2%
SCBU	43	14.5%

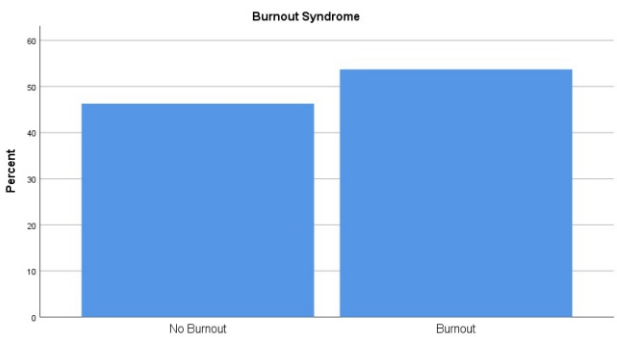

Figure 1: The prevalence of burnout among health workers

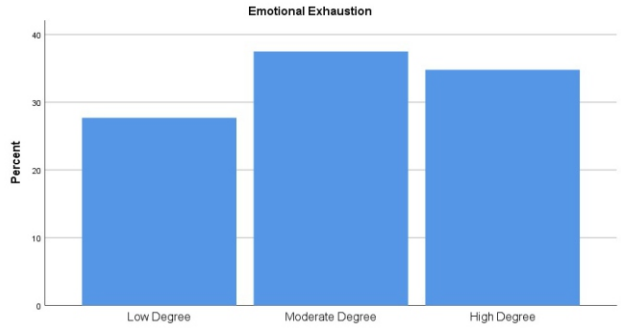

Figure 2: The degree of emotional exhaustion among respondents

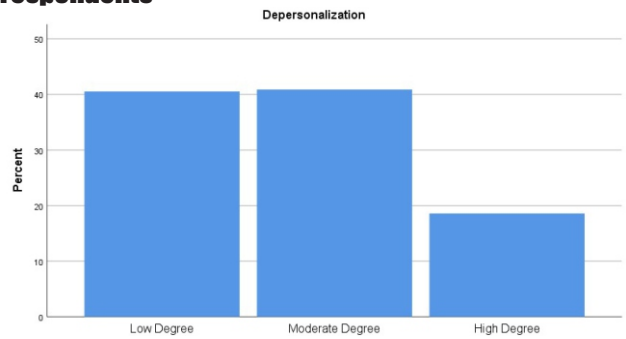

Figure 3: The degree of depersonalisation among respondents

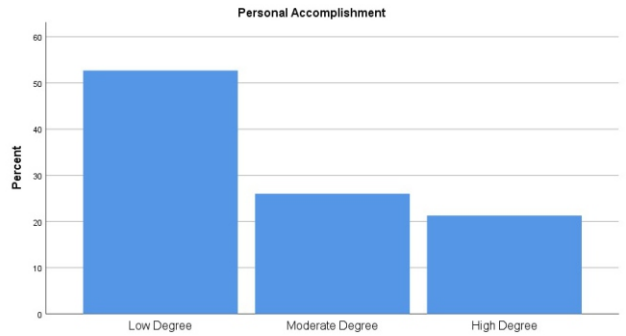

Figure 4: Graphic illustration of the degree of personal accomplishment among respondents

The male health workers have a 48.8% prevalence, while female health workers have a burnout prevalence of 57.1%. Findings suggest that female health workers have a higher burnout prevalence.

Table 2: The prevalence of burnout syndrome across genders among Participants

Gender	Prevalence of burnout		Total
	No burnout (%)	Burnout Syndrome (%)	
Male	62 (51.2%)	59 (48.8%)	121 (100%)
Female	75 (42.9%)	100 (57.1%)	175 (100%)
Total	137 (46.3%)	159 (53.7%)	296 (100%)

Doctors have a burnout prevalence of 59.8%, Nurses (49.1%), Pharmacists (84.0%), Med lab scientists (75.6), and Health assistants (6.3%).

Table 3: The prevalence of burnout syndrome across professions among healthcare personnel working in intensive care units and other selected units in NAUTH

Profession	Prevalence of burnout		Total
	No burnout (%)	Burnout Syndrome (%)	
Doctors	37 (40.2%)	55 (59.8%)	92 (100%)
Nurses	58 (50.9%)	56 (49.1%)	114 (100%)
Pharmacists	4 (16.0%)	21 (84.0%)	25 (100%)
Med Lab Scientists	8 (23.5%)	26 (76.5%)	34 (100%)
Health Assistants	30 (93.7%)	1 (6.3%)	31 (100%)
Total	137 (46.3%)	159 (53.7%)	296 (100%)

DISCUSSION

This study aimed to assess the prevalence of Burnout Syndrome (BOS) among healthcare personnel working in intensive care units (ICUs) and other selected units at NAUTH Nnewi. The findings indicate a substantial prevalence of burnout, with 53.7% of the study participants experiencing it. A deeper dive into the burnout domains highlights that 34.4% exhibit a high degree of emotional exhaustion, 18.6% show a high degree of depersonalization, and a concerning 52.7% demonstrate a low sense of personal accomplishment. Notably, these findings resonate with similar surveys conducted in India, Malaysia, and Enugu, Nigeria (although the Enugu study focused exclusively on nurses).[36-38]

However, a departure from these trends was observed in a study conducted in Ghana during the COVID-19 pandemic, where, despite using similar instruments and larger populations, the prevalence of burnout was notably lower at 20.6%.[39] This variance prompts a closer examination of contextual and systemic factors that may contribute to varying burnout rates across different regions. Despite differences in study populations and methodologies, the use of the Maslach Burnout Inventory in this research and other studies yielded comparable results. This consistency emphasises the robustness of the instrument in capturing the nuanced dimensions of emotional exhaustion, depersonalization, and personal accomplishment. These findings collectively underscore the pervasive nature of burnout across diverse healthcare settings, substantiating the need for targeted interventions and support mechanisms tailored to the specific challenges faced by healthcare professionals.

This study revealed a higher prevalence of burnout among female health workers, specifically at 57.1% (100). This aligns with a similar study conducted in India, suggesting a consistent pattern.[36] It's worth noting that the higher prevalence may be influenced by the proportion of female participants in the study. These results emphasize the importance of considering gender-specific factors in addressing and mitigating burnout among healthcare professionals.

When considering health workers in Intensive Care

Units (ICU) and other selected units, a notable disparity in burnout prevalence emerges based on professionals. Specifically, Pharmacists, medical lab scientists and doctors exhibit a high rate of burnout. This finding aligns with existing literature, reinforcing the trend that burnout syndrome tends to be more pervasive among healthcare professionals facing elevated levels of work-related stress.[4]

This observed high prevalence among these professionals underscores the unique challenges and pressures associated with their roles in critical care settings. The alignment with prior studies supports the consistency of these patterns across diverse healthcare contexts.

Conclusion

The results obtained from this study underscore a notable prevalence of burnout syndrome among healthcare professionals operating in Intensive Care Units and other selected units. Interestingly, the findings indicate that skilled health workers exhibited a higher susceptibility to burnout syndrome compared to their non-skilled counterparts, signalling the importance of targeted interventions for this specific group.

In light of these results, it becomes imperative for healthcare institutions, particularly those with demanding work environments, to prioritise the establishment of a supportive workplace culture.

Limitations to study

Findings cannot be generalised among all healthcare Personnel as findings are constrained by the study's sample size and specific research setting, limiting broader application to all healthcare personnel. Additionally, challenges arose in accessing participants due to their demanding schedules, the study relies on the honesty of respondents, a factor inherent in self-report measures, which may influence the accuracy of reported data.

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Author Contributions:

S.I.E. (Nnamdi Azikiwe University, Awka, Nigeria) conceptualized and conducted the research, participated in protocol development, performed data analysis, and contributed to both manuscript writing and review. C.C.I. (Nnamdi Azikiwe University, Awka, Nigeria) implemented and revised the manuscript. S.O.O. (Nnamdi Azikiwe University, Awka, Nigeria) conducted the research under the guidance of C.C.I. and S.I.E., contributed to protocol development, and reviewed the manuscript. S.C.A. (Nnamdi Azikiwe University, Awka, Nigeria) conducted the research under the guidance of C.C.I. and S.I.E., contributed to protocol development, and reviewed the manuscript. C.S.E. (Department of Medicine, America University of Barbados, Barbados) was involved in drafting the protocol and reviewing the manuscript. N.A.A. (University of Ilorin, Nigeria) contributed to manuscript writing and review. U.C.E. (Department of Medicine, People's Friendship University of Russia, Russia) Participated in manuscript writing and review. All authors read and approved the final manuscript and agreed to be accountable for all aspects of the work.

Data availability

The data used to support the findings of this study are available from the corresponding author upon reasonable request.

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Conflict of interest

The authors hereby declare that they have no financial or personal relationship(s) with anybody/organisation whatsoever that may have inappropriately influenced them in writing this article.

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