BURNOUT AMONG NURSES AND REPORTED CONSEQUENCES TO STAFF WELL-BEING AND PATIENT CARE AT MUHIMBILI NATIONAL HOSPITAL, TANZANIA

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By

Ua Ramadhan Kassim

A dissertation Submitted in (Partial) Fulfilment for the Degree of Master of Public Health at

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CERTIFICATION

The undersigned certify that they have read and recommend for the acceptance by the Muhimbili University of Health and Allied Sciences a dissertation titled ***"Burnout among Nurses and Reported Consequences to Staff Well-being and Patient Care at Muhimbili National Hospital''*** in (partial) fulfilment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

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Date: _____

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(Co-Supervisor)

Date: _____

DECLARATION OF COPYRIGHT

I, Ua Kassim declare that to the best of my knowledge, this dissertation is my original work, and has not been presented and will not be presented to any other University for a similar or any degree award.

Signature…… **Date……**

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DEDICATION

“This work is dedicated to my lovely daughters Leonia, Neema, and Angel Maneno and my mother Mwanamvua Kassim. Thank you for always being there for me.’’

ABSTRACT

Background: Globally, nurse burnout is a significant and concerning issue, affecting healthcare systems in various countries and regions. Studies conducted globally have highlighted the high prevalence of nurses' burnout.

Main Objective: To assess the prevalence, contributing factors, and reported consequences of burnout among nurses in Muhimbili National Hospital, Tanzania.

Methods: An analytical cross-sectional study was conducted. A structured organized questionnaire was used to assess burnout levels among the participants. Ordinal logistic regression was employed to assess the relationship between the independent variables and burnout. The 95% confidence interval and a significance level of $p< 0.05$ were used to assess the association strength. Descriptive analysis was performed to determine the frequency of categorical variables.

Results: Nurses at MNH were found to be at risk of burnout, which means they have moderate scores of EE (25.9%) and DP (29.2%), with 1% high scores in PA. The mean scores of MBI's three subscales (EE, DP, and PA) among the 364 participants were 12.8, 8.5, and 10.8 with standard deviations of 4.1, 2.4, and 1.7 respectively. Nurses with 6-10 years of experience had almost three times higher odds of emotional exhaustion (Odds Ratio (OR) = 4.12, 95% CI: 2.02-8.8, p = 0.001), nurses working rotating shifts had almost three times higher odds of emotional exhaustion (OR = 2.55, 95% CI: 1.19 – 5.50, p = 0.01) and Depersonalization (OR = 2.67, 95% CI: 1.06 – 6.67, p = 0.03). Nurses in the Inpatient Department (IPD) (n = 162) had significantly higher odds of Emotional Exhaustion (OR = 3.42, 95% CI: 1.71 – 6.9, p = 0.001). On the other hand, there was no significant association between burnout and sex, marital status, education level, or promotion. A considerable proportion of nurses (71.6%) reported experiencing physical health problems like backache and joint pain as a result of burnout.

Conclusion: These findings are important for fast-tracking the strategies to improve services at MNH.

Recommendations: To mitigate burnout among healthcare professionals at MNH, the MNH management should enhance support systems, promote work-life balance and develop policies that offer flexible scheduling, adequate time off, and resources to manage work-related stress.

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ABBREVIATIONS

CHW	Community health worker
DP	Depersonalization
EE	Emotional Exhaustion
LMICs	Low- and middle-income countries
MBI	Maslach Burnout Inventory
MNH	Muhimbili National Hospital
MOH	Ministry of Health
NBS	National Bureau of Statistics
ODK	Open Data Kit
OPD	Outpatient Department
PA	Personal Achievement
TNMC	Tanzania Nurse and Midwifery Council
WHO	World Health Organization

DEFINITION OF TERMS

Open Data Kit: Open-source suite of tools for Mobile Data Collection internationally accepted and adopted. an extensible, open-source suite of tools designed to build information services for developing regions **(**Open Data Kit, 2010).

Maslach Burnout Inventory (MBI): The most popular instrument in the world for measuring the phenomenon of burnout **(**Maslach C, K. & Jackson S. E. (1981).

Burnout: This is a state of physical, emotional, and mental exhaustion will occur from which it is hard to recover (Schaufeli & Greenglass, 2001).

Nurse burnout: This is a stressor facing nurses in their working settings, such as dealing with pain, patient deaths, and breaking bad news to patients (Gandi JC et al, 2011)

Emotional Exhaustion (EE): occurs when an individual's emotional resources are so depleted that they feel they no longer have anything to give psychologically to others (Maslach & Jackson, 1981). It is a chronic state of depleted emotional resources that results from demanding jobs (Wright & Cropanzano, 1998).

Depersonalization (DP): A negative attitude towards customers and clients, a personal detachment, or loss of ideals. "An alteration in perception or experience of the self so that one feels detached from, and as if one is an outside observer of, one's mental processes or body (e.g., feeling like one is in a dream)" (Maslach, 1993).

Reduced Personal Accomplishment (PA): a decline in one's feeling of competence and achievement in one's work (Maslach, 1993)

Registered nurse: means a nurse or midwife registered under section 15 (TNMC, 2010)

CHAPTER ONE

I.0 INTRODUCTION

1.1 Background

Nursing care is a critical and multifaceted role that involves delivering safe, skilled, ethical, and holistic care to patients, aiming to optimize health outcomes and enhance patient well-being (Shaban et al., 2024). Globally, nurse burnout is a significant and concerning issue, affecting healthcare systems in diverse countries and regions (Maslach et al, 2001; Woo et al, 2020). Nurses play a vital role in healthcare systems, particularly in hospital settings, where they manage complex tasks under pressure (Goldsby, Goldsby, Neck, & Neck, 2020). However, the demanding nature of their work can often lead to burnout, a condition characterized by emotional exhaustion, depersonalization, and a reduced sense of personal achievement (Maslach & Leiter, 2016). Burnout has been widely acknowledged as a growing concern in healthcare, with nurses being particularly vulnerable due to their constant exposure to stressful and high-intensity environments (Gelaw, Hanoch, & Adini, 2023; Konlan, 2021).

Burnout among nurses has implications, not only for the individuals affected but also for the quality of care they provide. Research has shown that burnout can lead to decreased job satisfaction, compromised patient safety, and increased rates of absenteeism and turnover among nurses (Stemmer et al., 2022). Global studies have indicated that burnout levels among nurses vary depending on factors such as workload, support systems, job demands, and working conditions (Ramírez-Elvira et al., 2021). In high-pressure settings, such as referral hospitals, the risk of burnout is notably higher, and it poses serious risks to both healthcare providers and patients alike (Born et al., 2022; Ramz, 2022).

Muhimbili National Hospital (MNH), Tanzania's largest referral and teaching hospital, handles many critical and complex cases, placing enormous pressure on its nursing workforce. Nurses at MNH are responsible for managing heavy workloads and providing care in an environment where resources may be stretched. Little research has been conducted in Tanzania to assess the

prevalence of burnout among nurses or to explore the specific risk factors contributing to burnout in this context.

A study investigating the prevalence of burnout and the factors associated with it in a Tanzanian setting, particularly among nurses working in high-demand environments like MNH, is essential (Lwiza & Lugazia, 2023). Understanding the scope of burnout and its contributing factors will allow for the identification of targeted interventions, and offer valuable insights into improving the quality of healthcare delivery in Tanzania by fostering a more supportive and sustainable working environment for nurses. This study seeks to fill the gap in the literature by providing evidence on the prevalence of burnout and its associated risk factors among nurses at MNH.

Globally, nurse burnout is a significant and concerning issue, affecting healthcare systems in diverse countries and regions (Maslach et al, 2001; Woo et al, 2020). The demanding nature of nursing, characterized by long working hours, high patient loads, and emotionally challenging situations, to the widespread occurrence of burnout among nursing professionals (Parola et al, 2022; Khalfan et al, 2023;). Studies conducted globally have highlighted the high prevalence of nurse burnout. For instance, according to a systematic review by Woo et al. (2020), burnout rates among nurses ranged from 10% to 80% in different countries, with a worldwide prevalence of 11.23%. The variability rates are often influenced by factors such as healthcare system structures, work environment, and cultural perceptions of nursing (Rees et al, 2019).

In the United States, research indicates that approximately one in three nurses experiences symptoms of burnout (Shah et al, 2021). Similarly, studies in European countries, such as the United Kingdom and Sweden, have reported concerning levels of burnout among nursing staff (Granel-Giménez et al, 2022). The prevalence of nurse burnout is not limited to high-income countries. Low- and middle-income countries (LMICs), facing unique challenges in healthcare delivery, also struggle with high rates of burnout among nursing professionals (Owuor et al, 2020a; Wright et al, 2022). In the context of Africa, including Tanzania, where healthcare resources are scarce, nurses often contend with increased workload and limited support systems, contributing to elevated levels of burnout (Dubale et al, 2019; Owuor et al, 2020a).

The healthcare sector in Tanzania provides essential services to the population, with nurses serving as frontline caregivers. Nursing, as a profession, is crucial for effective healthcare delivery. Yet, the demanding nature of the job, combined with systemic factors, has led to the increasing prevalence of nurse burnout (Yu et al, 2019). Nurse burnout goes beyond mere exhaustion, covering emotional fatigue, depersonalization, and a reduced sense of individual achievement (Schaufeli et al, 2009).

Flexible scheduling options have been offered by some institutions to help nurses manage work-life balance. The American Nurses Association (ANA) has emphasized the importance of flexible work arrangements to reduce stress (ANA, 2021). Acknowledging the link between staffing levels and burnout, some hospitals have hired additional nursing staff and further training and career advancement are being provided. Continuous education makes nurses more competent and engaged, which can mitigate feelings of burnout (Kirk et al., 2021). Many institutions have developed recognition programs to celebrate nurses' contributions, which can enhance morale and reduce feelings of being undervalued (McGowan et al., 2021).

While many interventions address symptoms of burnout, deeper systemic changes that tackle excessive workloads and administrative burdens are still lacking (West et al., 2018). Many initiatives are reactive and may not be sustained over time. A commitment to ongoing evaluation and adaptation of these programs is necessary (Shanafelt et al., 2020). Tailored interventions that consider individual circumstances and personal preferences are often overlooked, despite evidence suggesting that personalized support can be more effective (Köhler et al., 2021).

Nurse burnout has far-reaching implications for patient care, creating a complex relationship between the welfare of nursing professionals and the value of services provided to clients, (O'Connor et al, 2020; Flaubert et al, 2021). Burnout can leave nurses emotionally drained and fatigued, making it challenging to maintain the high standards of care necessary for optimal patient outcomes (Xiao et al, 2022). In addition, research indicates a connection between nurse burnout and an increased likelihood of medical errors (Menon et al, 2020). Exhausted nurses may experience reduced concentration and attentiveness, leading to errors in critical tasks such

as medication administration and documentation (Trinkoff et al, 2021). This can have serious implications for patient safety, as burnout is associated with lapses in communication, teamwork, and adherence to safety protocols (Haley, 2020).

Furthermore, nurse burnout has been linked to impaired patient satisfaction. The expressive enervation felt by exhausted nurses may affect their capability to deliver assumed and empathetic services, prompting clients' perceptions of personalized attention and emotional support (Adams, 2022).

Moreover, burnout-related absenteeism and turnover among nursing staff can disrupt the continuity of care for patients. Frequent staff changes may hinder the progress of therapeutic relations among nurses and patients, affecting the overall patient experience (Labrague, 2023). Additionally, studies revealed that burnout among nursing staff is related to prolonged hospital stays for patients (Schlak et al, 2021). The compromised efficiency and effectiveness of care delivery contribute to delays in patient recovery and discharge (Alhalal et al, 2020). There is a lack of comprehensive, localized data on burnout specific to nurses in Muhimbili National Hospital. General studies on burnout in Tanzania or similar settings may not capture the unique challenges faced by nurses at this particular institution. Therefore, it is significant to realize the connection between burnout and patient care to develop strategies, mitigate burnout’s impact, and promote a healthcare environment conducive to both nurse well-being and optimal patient outcomes. This research aimed to provide insights into the prevalence, contributing factors and reported consequences of burnout among nurses in Muhimbili National Hospital.

1.2 Problem Statement

Burnout poses a challenge for healthcare professionals in Tanzania, leading to emotional exhaustion, depersonalization, and reduced personal accomplishment. A study during the COVID-19 pandemic found that 66% of nurses reported experiencing symptoms of burnout (Maben & Bridges, 2020). The nurse-to-patient ratio in Tanzania has been reported to be around 1:4 to 1:10 in hospitals, with specific variations based on the type of facility and its location. This ratio may be higher in rural areas due to staffing challenges (WHO, 2020). Regarding nurse-patient ratios, the WHO recommends an optimal ratio of 1 nurse per 300 patients for effective patient care (Fergins, 2021).

Burnout among nurses is a critical issue that has gathered significant attention due to its implications for healthcare quality, nurse retention, and patient safety. Nurses often face heavy patient loads, which can lead to physical and emotional exhaustion. Studies indicate that high nurse-to-patient ratios contribute significantly to burnout (Aiken et al., 2002). Insufficient support from management and a lack of team cohesion can increase feelings of isolation and helplessness (Gonzalez et al., 2020). Long shifts and irregular hours can disrupt personal life, leading to stress and burnout (Miller et al., 2021). Burnout affects nurses' well-being and has implications for patient care, leading to increased turnover rates and reduced job satisfaction. Studies have shown that one in three nurses intends to leave the profession due to burnout (Dyrbye et al., 2020), which is associated with increased medical errors, lower quality of care, and decreased patient satisfaction (Dyrbye et al., 2017; Aiken et al., 2002). Understanding the factors contributing to nurse burnout within the specific context of Tanzanian healthcare can help in designing strategies to retain staff, ultimately leading to a more stable and experienced workforce and promoting patients’ safety.

1.3 Theoretical framework

This study utilized the Maslach Burnout Model, established by psychologists Christina Maslach and Susan E. Jackson (Maslach & Leiter, 2022). The model identifies three components contributing to burnout, providing an understanding of healthcare professionals' experiences, specifically nurses in Tanzanian public healthcare facilities. Emotional Exhaustion, the first component, describes the intense feelings of emotional drain and fatigue among healthcare workers. For Tanzanian nurses, this may translate into feeling emotionally overwhelmed in their demanding roles. Depersonalization, the second component, involves the development of pessimistic attitudes toward patients. In healthcare settings, nurses experiencing depersonalization may lack empathy and a detached, impersonal approach to those under their care (Xiao et al, 2022). The third component, Reduced Personal Accomplishment, relates to a diminished sense of professional achievements and competence. This may manifest, as a decline in nurses' perceived ability that affects patient outcomes and overall job satisfaction.

By adopting the Maslach Burnout Model, the study provided a structured framework to explore the unique cultural, contextual, and organizational factors influencing emotional exhaustion, depersonalization, and reduced personal accomplishment among nurses in Tanzanian healthcare facilities as independent variables. Health provider-related factors such as age, sex, and marital status have an impact on emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion is likely to occur in limited resources, inadequate staffing level, rewards, high workload, and prolonged working hours resulting in stress which may result in burnout.

The Maslach Model

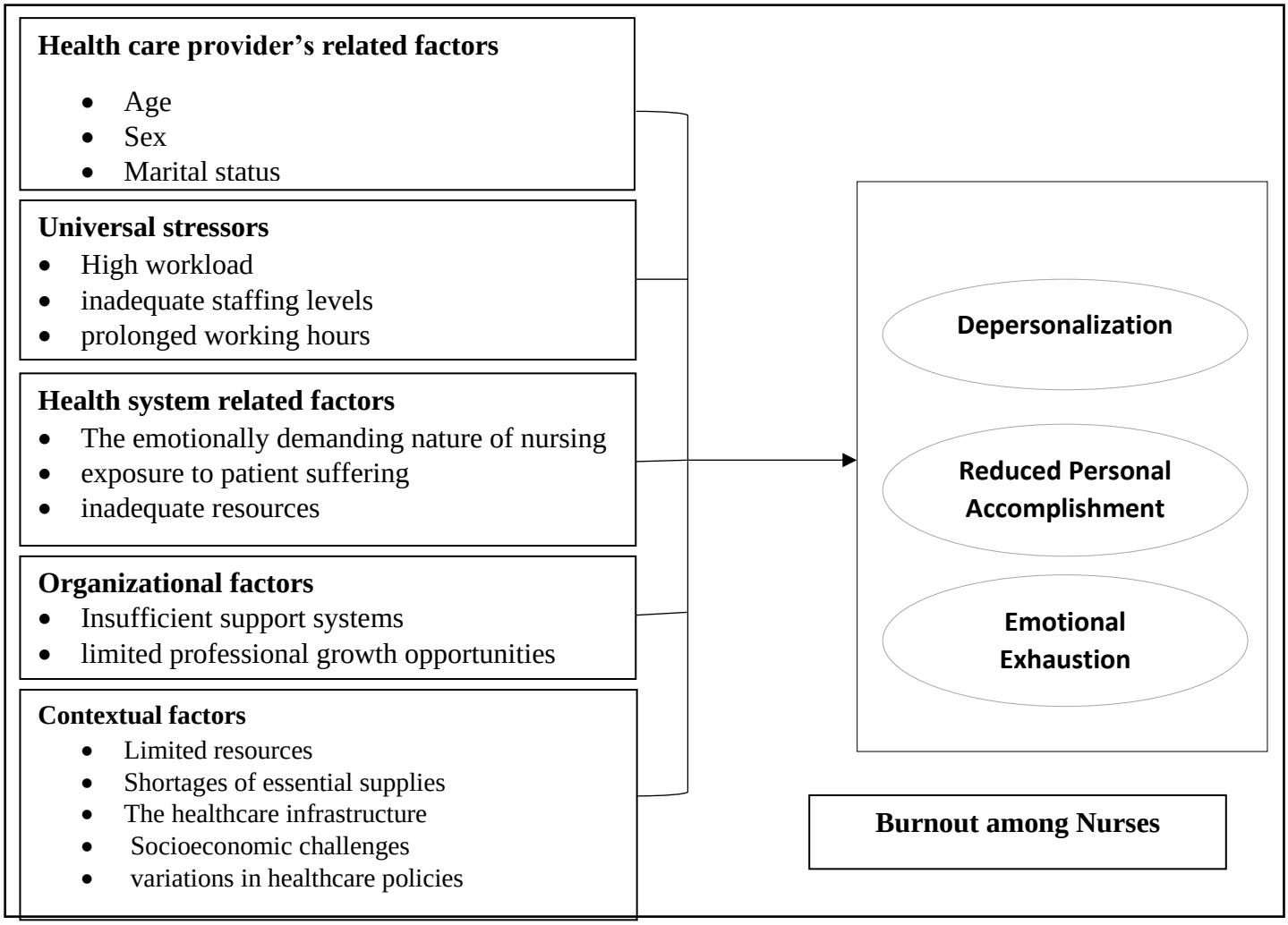


Figure 1: Theoretical framework (as per the Maslach Burnout Model; (Cordes et al, 1997)

1.4 Rationale of the study

This work is driven by a concern that addresses nurses' burnout in Tanzanian public healthcare facilities. Burnout, characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, has implications for both nursing staff and the quality of patient care. The rationale for this research stems from the recognition that nurse burnout is a significant issue, with potential consequences on the well-being of healthcare professionals and the overall effectiveness of healthcare delivery in Tanzania. Understanding the factors contributing to nurse burnout is essential for designing targeted interventions and promoting a supportive work environment. Through conducting this study, we aimed to shine a light on the specific challenges faced by nurses in Tanzanian healthcare settings, examining the relationship between workload, emotional toll, staffing levels, and organizational support. The insights gained from this study not only add value to the current figure of information on nurse burnout but also inform evidence-based strategies to enhance staff welfare improve patient care outcomes and recognize the importance of employee well-being as a critical component of overall healthcare quality. Furthermore, the unique cultural and organizational context of Tanzanian healthcare necessitates a focused investigation into the experiences of nurses. Recognizing the gap in the literature about nurse burnout in this specific setting, this study seeks to bridge that knowledge gap and provide context-specific insights that can guide policy development and organizational practices. Research on burnout can guide policy decisions at various levels, from institutional practices to broader healthcare policies. The Hospital management can advocate for changes that promote better working conditions, such as increasing staffing ratios and mental health support programs.

1.5 Research Question

1.5.1 Broad research question

What is the prevalence, contributing factors, and reported consequences of burnout among nurses in MNH, Tanzania?

1.5.2 Specific Research Question

1. What is the prevalence of burnout among nurses in MNH, Tanzania?
2. What are the factors contributing to burnout among nurses in MNH, Tanzania?
3. What are the perceived consequences of burnout among nurses in MNH, Tanzania?

1.6 Broad objective

To assess the prevalence, contributing factors, and reported consequences of burnout among nurses at MNH, Tanzania.

1.6.1 Specific objectives

1. To determine the prevalence of burnout among nurses in MNH, Tanzania.
2. To assess the contributing factors associated with burnout among nurses in MNH, Tanzania.
3. To assess perceived consequences of burnout among nurses in MNH, Tanzania

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Objective 1: Prevalence of burnout among nurses in the public healthcare industry.

The demanding nature of nursing roles, coupled with systemic challenges within healthcare systems, has contributed to high levels of burnout. Multiple studies have attempted to quantify the extent of burnout, providing insights into the magnitude of this issue on a global scale. These prevalence figures shed light on the nature of burnout among nurses, underlining the urgency for comprehensive strategies to address this critical challenge in the healthcare sector. In North America, studies have reported varying prevalence rates of nurse burnout. For instance, in the United States of America (USA), 9.5% of nurses (approximately 418,769 individuals) reported leaving their most recent position, with 31.5% attributing burnout as a contributing factor to their decision to leave (Shah et al, 2021). Similarly, in Canada, a significant proportion of nurses, exceeding 70%, reported experiencing moderate levels of burnout, while 29% reported low levels (Maddigan et al, 2023). These figures highlight the significant impact of burnout on the nursing workforce in North America.

Several European countries have reported significant prevalence rates of nurse burnout. In a study conducted in Sweden, it was found that 299 nurses (12.3%) reported high levels of burnout symptoms at least once during the first three years of their working life (Rudman et al, 2020). A report in the United Kingdom revealed that burnout influences around one-third of the nursing workforce. Numerous studies on nurses have consistently identified high prevalence rates of burnout, with findings ranging from 29.2% to 50.8% of participants experiencing emotional exhaustion and between 20.5% and 32% exhibiting a high level of depersonalization (Chana et al, 2015; Sherring & Knight, 2009). These figures highlight the widespread nature of burnout and the need for region-specific interventions to address this pervasive issue. The prevalence of nurse burnout in Asia has been a subject of increasing attention. In Japan, a study published in the *Journal of Nursing Management* reported a burnout prevalence of around 30% among nurses (Minamizono et al, 2019). Similarly, research in China found that approximately 25% of frontline nurses experienced burnout symptoms (Hu et al, 2020). These figures illuminate the

global nature of nurse burnout, extending beyond Western nations to influence healthcare professionals in diverse cultural and organizational contexts.

Australia and Oceania have not been immune to the challenges of nurse burnout. In Australia, a survey conducted to examine the degree of burnout in minor inhabitants of Australian midwives found nearly 30% of the sample encountered moderate to high points of burnout, with approximately 50% of members registering moderate to high scores for personal burnout and comparable number scoring high for work-related burnout (Singh et al, 2015). Although prevalence rates in Oceania may vary, the overall trend suggests that burnout is a prevalent issue affecting the nursing workforce in this region (Frajerman et al, 2019). While research on nurse burnout in Africa is limited compared to other continents, emerging studies suggest that burnout is a growing concern. Research in South Africa found that nearly 45% of nurses experienced burnout symptoms (Owuor et al, 2020b). As the understanding of nurse burnout in Africa continues to evolve, addressing this issue will be crucial for the welfare of healthcare professionals and the overall functioning of healthcare systems on the continent.

In conclusion, the real-time global prevalence of nurse burnout indicates the widespread nature of this issue, affecting nurses across continents. These figures serve as a critical foundation for further exploration into the causes and consequences of burnout, as well as the development of targeted interventions to alleviate its impact on the nursing workforce.

2.2. Objective 2: Factors associated with burnout among nurses in the public healthcare industry

Globally, the sources of burnout among nurses in the public healthcare industry are multifaceted. High workload, inadequate staffing levels, and prolonged working hours are universal stressors contributing to burnout (Alhalal et al, 2020; Shah et al, 2021; Maslach & Leiter, 2022). Additionally, the emotionally demanding nature of nursing, coupled with the exposure to patient suffering and inadequate resources, plays a pivotal role (Chana et al, 2015; Hu et al, 2020). Globally, studies show that organizational factors, such as insufficient support systems and limited professional growth opportunities, contribute significantly to nurse burnout (Liu et al,

2018). While interventions have been proposed and implemented in various countries, understanding the causes and effective preventive measures remains a challenge.

In the setting of African countries, the causative reasons for burnout among nurses in the public healthcare sector align with global patterns but unfold against contextual challenges. One issue is the severe resource constraints prevalent in many African nations, where shortages of essential supplies and personnel exacerbate the daily struggles faced by nurses (Dugani et al, 2018). The strain on resources not only intensifies the workload but also creates a persistent environment of stress and frustration for healthcare professionals. Moreover, the healthcare infrastructure in African countries often struggles with several challenges, ranging from inadequate facilities to limited technological support (Azevedo & Azevedo, 2017). These challenges can significantly contribute to burnout as nurses contend with suboptimal working conditions and are forced to navigate their duties with limited tools and resources (Bintabara, 2021). Socioeconomic challenges further compound the situation, with nurses often facing financial constraints and navigating their professional roles amidst broader societal issues. These include low income and wage disparities, limited career advancement opportunities, workplace stresses, and lack of resources for continuing education (Van Der Doef et al, 2012).

Variations in healthcare policies across African countries introduce another challenge of nurse burnout. The lack of standardized policies can lead to inconsistencies in the provision of support, professional development opportunities, and mental health resources for nurses (Lund et al, 2010). These policy variations, coupled with the scarcity of protective mechanisms, contribute to an environment conducive to burnout among healthcare professionals. Also, other factors that have been found by prior studies to be suggestively related to burnout in nurses include the occurrence of exposure to work-related violence, work burden, years of practice, supervision, and work events (Abdo et al, 2015). Additionally, the prevalence of infectious diseases and the significant burden of maternal and child health issues in many African nations pose specific challenges to nurses (Dugani et al, 2018). The demanding nature of addressing these health concerns, often with limited resources and under challenging circumstances, adds to the stress experienced by nurses in the public healthcare sector. Understanding the African perspective on nurse burnout becomes important not only for acknowledging the unique challenges faced by

healthcare professionals but also for developing targeted strategies that address burnout within the diverse healthcare landscapes of the continent.

In Tanzania, the causes of burnout among nurses in the public healthcare sector align with global and regional trends but may manifest with unique contextual factors. Limited resources, including shortages of essential supplies and personnel, often amplify the stress experienced by Tanzanian nurses (Macdonald et al, 2019; Strong, 2017). The healthcare infrastructure, socioeconomic challenges, and variations in healthcare policies contribute to burnout in the Tanzanian context (Songstad, 2012). Additionally, the prevalence of communicable diseases and the burden of non-infectious diseases pose specific challenges to nurses (Mpagama et al, 2023). Understanding the Tanzanian perspective is crucial for developing targeted strategies that address burnout within the country's healthcare landscape.

2.3. Objective 3: Consequences of burnout among nurses in the public healthcare industry

2.3.1 Burnout and nurses'/staff wellbeing

Burnout among nurses significantly affects both individual well-being and the overall health of staff. Research shows that burnout can affect various aspects of a nurse's life. One consequence is its effect on physical health. Burnout has been linked to an increased vulnerability to illnesses and chronic conditions (Maslach & Leiter, 2016). Prolonged exposure to stress at work can lead to higher levels of cortisol, negatively affecting the immune system and overall health (Morey et al, 2015).

On the mental health front, burnout, especially emotional exhaustion, is associated with issues like anxiety, depression, and emotional disorders among nurses (Nagel & Nilsson, 2022). This emotional toll can also lead to feelings of detachment and depersonalization (Azevedo & Azevedo, 2017). Emotional exhaustion, a central component of burnout, manifests as a depletion of emotional resources (Albar Marín & García-Ramírez, 2005). Nurses struggling with burnout may find themselves emotionally fatigued, leading to feelings of emptiness, cynicism, and detachment from their work and colleagues (Bouchard, 2016). Depersonalization is another

mental health consequence associated with burnout (López-López et al, 2019). It involves developing a negative and detached attitude toward patients, resulting in a diminished sense of empathy and compassion, affecting the nurse-patient relationship.

Another consequence is the reduction in work satisfaction. As burnout becomes high, work satisfaction tends to be low. This not only affects a nurse's fulfillment but can also contribute to higher turnover rates within healthcare organizations (Rouleau et al, 2012). As nurses experience burnout, they often report diminished satisfaction with their work. The emotional exhaustion, sense of depersonalization, and an abridged feeling of achievement associated with burnout contribute to a sense of disillusionment and dissatisfaction in their roles. Reduced job satisfaction can contribute to a higher turnover rate among nurses, as those experiencing burnout may seek alternative employment opportunities or consider leaving the profession altogether (De Simone et al, 2018).

2.3.2 Burnout and patients' care

Burnout among nurses has a direct and concerning consequence on the value of patient care. As nurses experience burnout, their capacity to provide optimal care to patients becomes compromised, leading to a range of negative effects on the healthcare delivery system (De Simone et al, 2018; Macdonald et al, 2019). One significant impact is the potential increase in medical errors. Exhausted and emotionally fatigued nurses may find it challenging to maintain the high level of attention and focus required for accurate decision-making and execution of medical procedures (Anton et al, 2021). This can result in errors that jeopardize patient safety and well-being.

The emotional exhaustion and depersonalization associated with burnout can lead to a diminished capacity for empathy and compassionate care (Albar Marín & García-Ramírez, 2005). Patients may perceive a lack of genuine concern from nurses, affecting the nurse-patient relationship and overall patient satisfaction. The reduced job satisfaction resulting from burnout can further contribute to a decline in the quality of patient care (Anton et al, 2021). Dissatisfied

nurses may be less motivated to engage proactively in their roles, potentially leading to decreased efficiency and effectiveness in delivering care.

Despite the research on nurse burnout globally and regionally, there is a notable knowledge gap concerning the Tanzanian perspective in terms of local contexts, challenges, and experiences that may differ from those in other regions. These perspectives are cultural factors that influence the perception and experience of burnout among nurses, the healthcare system, economic context, policy and regulations, work environments, and local health challenges. Limited research has specifically investigated nurse burnout's unique causes and implications in Tanzania's public healthcare sector. Addressing this gap is essential for implementing effective interventions that consider the challenges faced by Tanzanian nurses. Furthermore, exploring the Tanzanian perspective can contribute valuable insights to the broader understanding of nurse burnout, potentially informing global strategies for improving nurses' comfort and enhancing patient care.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

This study used an Analytical Cross-sectional study design to establish the association between exposure(s) which are demographic factors like age, sex years of experience as a nurse, department they are working, and the outcome which is burnout.

Analytical design allows for the examination of relationships between exposures and outcomes, leveraging statistical methods to draw meaningful inferences from the collected data. A questionnaire is based on the gathering of information at a single point in time and over a fairly short-term period (Kesmodel, 2018).

3.2 Study Population

The study population delineated the target population from which the study's sample will be selected (Banerjee & Chaudhury, 2010). The study population for this research were the registered nurses with a Degree and Master holders working at MNH in four Departments: Nursing Housekeeping, Maternal, and Reproductive Health, Critical Care, and Nursing Operating Theatre and Sterilization.

3.3 Study area

The study site for this research was MNH as it is a big hospital in the country with a large number of nurses to offer each category's experiences needed (representativeness). MNH was selected as the study site due to its designation as a National Referral Hospital, a Research Center, and a University Teaching Hospital. It has a 1,500-bed size and employs around 2,800 individuals, including 900 registered nurses and 120 volunteers. The hospital's capacity, infrastructure, and diverse departments made it suitable for exploring the prevalence of burnout and its significance among nurses, contributing to a better understanding of the issue within the Tanzanian healthcare system. The nurses for the study were reached from Mwaisela, Kibasila, Sewahaji, Psychiatry Unit, OPD, main Theatre, EMD Theatre, Obstetrics and gynecology

Theatre, Main ICU, EMD ICU, Pediatric ICU, Maternity ICU, NHIF, Dialysis Unit and pediatric block.

3.4 Sample size and selection

3.4.1 Sample size calculation

In this study, the precise sample size was obtained by the following formula using the following as cited by (Chaokromthong & Sintao, 2021):

$$n = \frac{Z^2 \cdot p \cdot (1-p)}{E^2}$$

1. The Z-score allied with the selected confidence level. For a 95% confidence level, the Z-score was typically about 1.96.

2. **P:** the parameter of interest stands for the estimated proportion of nurses experiencing burnout in MNH. To derive this estimate, the study utilized a proxy indicator specifically the prevalence of burnout among healthcare workers at Muhimbili National Hospital, which was reported at 62% in the study conducted by (Lwiza & Lugazia, 2023).

3. **E:** The tolerable margin of error, indicated as ± 5%.

Grounded on the above formula, the sample size was

n = [(1.96)^2 x 0.62(1-0.62)] / (0.05) (0.05) ➔therefore the sample size approximated to **368.**

3.4.2 Sample selection

Sample selection is the procedure of selecting a subsection of people or objects from a bigger population for insertion in a research study (Fink, 2003). This choice was led by precise conditions and procedures to ensure that the selected sample precisely denoted the larger population, facilitating the extraction of meaningful insights in line with the research objectives (Etikan & Bala, 2017).

In this study, Probability Proportional Sampling (PPS) was conducted. A sampling frame was established by compiling a comprehensive list of all registered nurses within the hospital, approximately 900. The sampling process involved selecting a representative sample from four departments out of the six departments: 1. Nursing Housekeeping (Mwaisela, Kibasila, Sewahaji, Mortuary, NHIF Clinic, and Psychiatry), 2.Maternal and Reproductive Health(Maternity 1, Maternity 2, Pediatric 1, Pediatric 2, and New OPD), 3. Nursing Critical Care (Surgical, Medical ICU, Neonatal ICU, and Maternal ICU, and 4. Nursing Operating Theatre and Sterilization (Main Theatre, EMD Theatre, Pediatric, and Maternity Theatre). The remaining two departments were the Social Welfare and Nutritional and Dietary departments, the departments had no registered nurses.

To ensure a diverse representation, nurses were selected randomly within each department, focusing on those with a larger number of registered nurses. The researcher employed Simple Random Sampling until the desired sample size of 364 was achieved. This approach aimed to capture a comprehensive view across various nursing categories and departments. The random sampling method (Taherdoost, 2016) was applied to ensure each nurse per category from the sampling frame has an equal chance of being chosen. The aim was to derive a subset of individuals that accurately represented the broader population of nurses in different categories in the hospital. This selection process was guided by specific criteria used in the Simple Random Sampling method to ensure the chosen sample aligns with the research objectives, facilitating the extraction of meaningful insights to ensure that each nurse in every department has an equal chance of being selected.

Using Probability Proportional Sampling, the procedure involved calculating department proportions, determining the desired overall sample size, and then multiplying proportions by the desired size to get sample sizes for each department. Rounding ensures practical feasibility, yielding final sample sizes representative of registered nurses involved in the study.

Table 1: Registered Nurses at Muhimbili National Hospital

Departments	Registered nurses	# Nurses selected for a study
Nursing Housekeeping	360	130
Maternal and Reproductive health	270	84
Nursing Critical care	116	103
Nursing Operating Theatre and Sterilization	88	35
Others	86	12
Total	**920**	**364**

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion Criteria

Registered nurses who worked for one or more years and were willing to participate in the study were included in the study.

3.5.2 Exclusion Criteria

All registered nurses working at MNH who were sick during the study period and those who had a history of severe physical or mental health conditions that affected their participation ability were excluded from the study.

3.6 Study Variables

3.6.1 Dependent (Outcome) Variable

The dependent (Outcome) variable was burnout in nurses working at Muhimbili National Hospital.

3.6.2 Independent Variables

The independent variables such as Demographic, Contextual, Organizational, and health systems-related factors contributed to Emotional Exhaustion, Depersonalization, and Reduced personal accomplishment.

1. Emotional Exhaustion: these were the intense feelings of emotional drain and fatigue among healthcare workers.
2. Depersonalization: involved the development of pessimistic attitudes towards patients. Nurses who experienced depersonalization exhibited a lack of empathy and a detached, impersonal approach to those under their care
3. Reduced Personal Accomplishment: Related to a diminished sense of professional achievement and competence that manifested a decline in nurses' perceived ability that affects patient outcomes and overall job satisfaction

To measure the levels of burnout, the Maslach Burnout Inventory (MBI-Human Services Survey (MBI-HSS) version 3, (Maslach, C & Jackson, S.E (1996)) was utilized. The Maslach Burnout Inventory (MBI) has been validated for use in Tanzania. Studies have adapted the MBI to assess burnout in Tanzanian physicians including nurses, highlighting its role as a validated tool to measure burnout. The tool categorized responses into high, moderate, and low prevalence. The categorization into high, moderate, and low prevalence is based on established scoring criteria provided by the MBI manual. It consisted of three subscales: Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA). Each subscale was assessed through a set of statements, and respondents provided their responses on a Likert scale from 0 to 6, where 0 = Never, 1 = A few times a year or less, 2 = Once a month or less, 3 = A few times a month, 4 = Once a week, 5 = A few times a week and 6 = Every day.
Emotional Exhaustion (EE): Low (0-13), Moderate (14-26), High (27-40)
Personal Accomplishment (PA): Low (0-9), Moderate (10-18), High (19-27)
Depersonalization (DP): Low (0-6), Moderate (7-12), High (13-18)

High Prevalence:

a. Emotional Exhaustion: High scores (significant levels) indicated a frequent experience of emotional exhaustion.
b. Depersonalization: High scores indicated a significant degree of depersonalization.
c. Reduced Personal Accomplishment: Low scores suggested a diminished sense of personal accomplishment.

Moderate Prevalence:

a. Emotional Exhaustion: A moderate score (falling in the middle of the scale) reflected a moderate experience of emotional exhaustion.
b. Depersonalization: Moderate scores indicated a moderate level of depersonalization.
c. Reduced Personal Accomplishment: Moderate scores suggested a moderate level of personal

Low Prevalence:

a. Emotional Exhaustion: Low scores suggested a lower frequency of emotional exhaustion.
b. Depersonalization: Low scores designate a minimal grade of depersonalization.
c. Reduced Personal Accomplishment: High scores designated an advanced sense of individual accomplishment.

These categorizations align with the standardized guidelines provided by the MBI manual (a psychological assessment tool used to measure burnout in individuals) ensuring a consistent and widely recognized method for interpreting burnout levels.

3.7 Data Collection

a) Data collection tool

A structured questionnaire was used to assess burnout levels among participants.

b) The data collection procedure

The Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS version 3, (Maslach, C & Jackson, S.E (1996) P) served as the measurement tool, categorizing responses into high, moderate, and low prevalence. The interview questionnaires were pre-programmed in the Open Data Kit (ODK) platform to facilitate an efficient and secure process. The process involved designing a questionnaire tool within the ODK platform, deployed in tablets providing a digital framework for data collection. The use of tablets and the ODK platform not only allowed for streamlined responses but also ensured the efficient management of gathered information.

As part of data collection procedures, before going to the field, data collection training was conducted at Dar es Salaam by the researcher to ensure that the study protocol was understood including all data collection procedures were followed and data collection was ethically conducted. Moreover, the training highlighted the importance of conducting data collection ethically and adhering to the established protocols. Data collection started from 16th April to 7th May 2024. Courtesy call to the Director of MNH and Director of Nursing Services was conducted after that to the respective MNH block managers of Mwaisela, Kibasila, Sewahaji, Mental health, EMD, Pediatric, Theatres, Maternity, and Reproductive health, as well as OPD. Every registered nurse who intervened was informed about the study and consented to the permission to collect data in their blocks. The researcher and one research assistant collected data at the respective blocks.

c) Pre-testing of data collection Methods

Once the training was completed, the pre-programmed questionnaires in the ODK platform were pre-tested in Kiswahili at the study sites. This pre-testing phase involved administering the questionnaires to study participants through data collectors who have been trained in the study procedures.

3.8 Pretesting of the data collection tool

The data collection devices were pre-tested among 10 registered nurses from two departments of Psychiatry and IPD at Muhimbili National Hospital, Dar es Salaam. The pre-testing was conducted by the researcher. The pre-testing of the data collection tool was conducted before data collection to assess the accuracy and effectiveness of the questionnaire designed by examining each question against the total study questions. The researcher identified potential issues with the questions and refined them accordingly while conducting the pretesting process. This process was crucial to ensure essential adjustments and cleansing of the data collection tool. For example, there was no option for registered nurses who were not promoted, so it was added. total working hours for participants was also added to the tool.

3.9 Validity and reliability

Data quality was conducted from the entire process of data collection, entry, and analysis. During data collection, satisfactory supervision and guidance were given to the research assistant to guarantee validity and reliability. The prepared English questionnaire was translated into the Kiswahili language (the local language). To ensure that the translation of the research tool does not distort the original content, a rigorous translation process was followed. Initially, the research tool was translated from English to Swahili by a professional translator proficient in both languages. The translator focused on maintaining the accuracy and clarity of the content during the translation process. Once the initial translation was completed, a second professional translator, who was proficient in both languages but was not involved in the forward translation back-translated the tool from the target language back to the original language. This step aimed to ensure that the meaning and content of the translated tool remained consistent with the

original version. The original and back-translated versions of the research tool were compared to identify any discrepancies or inconsistencies in meaning. Any discrepancies were discussed and reconciled through consensus among the research team and translators.

The validity of the measurement tool was adapted from The Maslach Burnout Inventory (MBI). The Maslach Burnout Inventory (MBI) has been validated for use in Tanzania. Studies have adapted the MBI to assess burnout in Tanzanian physicians, highlighting its role as a validated tool to measure burnout. Additionally, research has shown that the MBI is a reliable and valid psychometric instrument for assessing burnout in human service professions, indicating its suitability for measuring burnout in various contexts, including Tanzania.

Validity and reliability were ensured through several methodological strategies in the study on burnout among nurses at Muhimbili National Hospital in Tanzania. Firstly, for internal validity, validated measures of burnout were carefully selected to accurately capture the phenomenon under investigation. To address external validity, the research design was considered in the broader context of healthcare settings. This involved the use of sampling strategies that aimed to capture diversity in hospital settings such as the use of different departments within the hospital.

To ensure the content validity of the research tool, experts in the field of burnout and nursing were consulted to review the selected measures and ensure that they cover the various dimensions of burnout relevant to nurses at Muhimbili National Hospital.

For face validity, a pilot study was conducted with a small sample of nurses from Muhimbili National Hospital (Psychiatry and IPD) to assess their understanding of the research tool and its relevance to their experiences. Feedback from participants was solicited to identify any ambiguities or misunderstandings in the wording of the questions or the response options. Based on that feedback, necessary revisions were made to ensure that the research tool was clear, understandable, and relevant to the target population.

In terms of reliability, measures were taken to ensure consistency in data collection and analysis. Inter-rater reliability was achieved through rigorous training and standardization of data collection protocols among research team members. Test-retest reliability was assessed by administering the same instruments to a subset of participants at two different time points and comparing their responses.

3.10 Data analysis

The study adopted a quantitative analysis method to assess the prevalence of burnout among nurses at Muhimbili National Hospital. Initially, a data cleaning process using R software (version 4.1.2), was conducted after the collection of data to guarantee the precision and completeness of the collected data. This involved identifying and addressing missing or erroneous data points. After the initial data collection phase, the subsequent step involved an examination to ensure accuracy and completeness. This post-collection phase assessed data completeness, addressing missing values and discrepancies. Strategies for handling missing data were employed, followed by efforts to ensure data accuracy and standardized formats. The identification and treatment of outliers contributed to the overall cleaning process. Validation checks confirmed alignment with predefined rules, and thorough documentation of changes made during cleaning enhanced transparency and reproducibility.

Analytical statistics specifically Ordinal logistic regression was used to analyze factors contributing to burnout among nurses in MNH in objective two, and Descriptive statistics were used to summarize nurses' demographic data like age, sex, marital status, job experience, and staff motivation using frequencies and percentages. The regression analysis served as a measure of the relationship between variables. In this context, it was used to understand how factors such as age, sex, marital status, years of experience as a nurse, rotations, and department that a nurse works associate with burnout. For example, a regression coefficient could be utilized to examine how age or years of experience as a nurse were associated with their level of emotional exhaustion, depersonalization, and reduced accomplishments.

The Maslach Burnout Inventory scores provided an understanding of burnout levels and allowed for the classification of participants. The analysis of data collected through the MBI tool involved scoring participants' responses on the three subscales: Emotional Exhaustion, Depersonalization, and Personal Accomplishment an objective one. This scoring process, following established guidelines was executed using statistical software such as R. The software facilitated the computation of descriptive statistics, including means, standard deviations, and frequency.

Participants were categorized into high, moderate, or low burnout levels based on their scores, with specific cutoff points determining these classifications. The interpretation of scores involved comparing individual results to established norms or benchmarks. The final results, including the prevalence of burnout among participants, were reported clearly.

3.11 Ethical Consideration

Ethical clearance was obtained from Muhimbili University's Institutional Review Board (Ref. No. DA.282/298/01.C/2160). Further permission to conduct the study was obtained from MNH management. Participants were approached for informed consent during interviews, ensuring a full understanding of the study's goals and procedures.

Confidentiality was guaranteed to all participants and preserved by preventing unauthorized people from having access to the study information. Reassurance and consent were made for registered nurses to participate voluntarily. The researcher took the opportunity to explain the study's objectives, procedures, potential risks, and benefits.

Participants were kept unnamed throughout the study; the collected data was kept in a password-protected computer for security purposes.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter presents the study results, covering demographic characteristics and three primary objectives. The first objective focused on determining the prevalence of burnout among nurses at MNH in Tanzania. The second objective aimed to identify factors associated with burnout among these nurses. Through this exploration, the study sought to uncover underlying contributors to burnout within the context of MNH. In the third objective, the study examined the perceived consequences of burnout as reported by nurses at MNH. By examining these reported consequences, the study aimed to shed light on the impact of burnout on nurses' well-being. Through these objectives, the study provides an examination of burnout among nurses at MNH in Tanzania.

4.2 Demographic characteristics of participants

The study achieved a remarkable response rate of 98.9% across various departments participating in the study (n= 364), some of the respondents were not willing to respond at that time. The Inpatient Department (IPD) gave the maximum response rate of 36.5%. The majority of respondents were females, comprising 69.8%, the largest proportion of nurses fell within the age bracket of 35-44 years, constituting 41.8% of the respondents, (Table 2). Years of experience in nursing varied among respondents with approximately one-third (33.5%) having five years of experience or less. Finally, regarding shift schedules, most nurses worked on rotating shifts, representing 61.8% of the respondents.

Table 2: Characteristics of Study Respondents (n=364)

Variable	n	%
Sex		
Female	254	69.8
Male	110	30.2
Age (Years)		
25-34	114	31.3
35-44	152	41.8
45+	98	26.9
Marital status		
Divorced/separated/Widowed	24	6.6
Married	262	72.0
Single	78	21.4
Education level		
Certificate	16	4.4
Diploma	139	38.2
Bachelor degree	192	52.7
Master degree	17	4.7
Years of experience as a Nurse		
<5 years	122	33.5
6-10 years	102	28.0
11-15 years	39	10.7
More than 15 years	101	27.7
Department you are working		
ICU	102	28.1
Mental health	15	4.1
IPD	133	36.5
OPD	114	31.3
Last promotion		
< 3 years	197	54.1
4-6 years	80	22.0
>7 years	19	5.2
Not promoted	68	18.7
Shift Schedule		
Day shift	88	24.2
Night shift	14	3.8
Fixed shift	37	10.2
Rotating shift	225	61.8

4.3 The prevalence of nurses' burnout

The prevalence of burnout among nurses was assessed using the Maslach Burnout Inventory, which evaluates three dimensions: Emotional Exhaustion, Depersonalization, and Reduced Personal Accomplishment (Table 3). The findings revealed a range of burnout levels among participants. A considerable percentage of nurses reported low levels of burnout, with 7.5% experiencing low Emotional Exhaustion, 3.5% reporting low Depersonalization, and 33.2% indicating a strong sense of Reduced Personal Accomplishment. In contrast, a notable number of nurses reported moderate levels of burnout, with approximately 25.9% experiencing moderate Emotional Exhaustion and 29.2% indicating moderate Depersonalization. Interestingly, no participants reported moderate levels of Reduced Personal Accomplishment. High levels of burnout were relatively rare, with no nurses indicating high Emotional Exhaustion, only 1% reporting high Depersonalization, and none experiencing a high sense of Reduced Personal Accomplishment. The mean scores and standard deviations for each burnout dimension further illustrate these findings. The mean score for Emotional Exhaustion was 12.8, with a standard deviation of 4.1. For Depersonalization, the mean score was 8.5, with a standard deviation of 2.4, Finally, the mean score for Reduced Personal Accomplishment was 10.8, with a standard deviation of 1.7.

Table 3: The estimated prevalence of nurses' burnout, April/May 2024

Maslach Burnout Inventory dimensions	**Level of burnout n (%)**	**Mean score**	**Standard deviation**
Emotional Exhaustion		12.8	4.1
Low	(27) 7.5		
Moderate	(94) 25.9		
High	0		
Depersonalization		8.5	2.4
Low	(13) 3.5		
Moderate	(106) 29.2		
High	(8) 1		
Accomplishment		10.8	1.7
Low	(121) 33.2		
Moderate	0		
High	0		

4.4 Factors associated with Nurses' burnout

The Ordinal regression analysis of factors associated with burnout among nurses at MNH, as presented in Table 4, reveals several significant findings. The association between burnout level and demographic/occupational characteristics revealed that age, years of experience as a nurse, shift schedule, and the department in which nurses worked had a significant association. Nurses aged 45 years and above had higher odds of Emotional Exhaustion compared to those aged 25-34 (OR = 3.52, 95% CI: 0.69-20.5, p = 0.14), with a similar trend observed for Depersonalization (OR = 25, 95% CI: 3.46 – 21, p = 0.002). Nurses with 6-10 years of experience had significantly higher odds of Emotional Exhaustion (OR = 4.12, 95% CI: 2.02-8.8, p = 0.001) while nurses working rotating shifts (n = 202) had significantly higher odds of Emotional Exhaustion (OR = 2.55, 95% CI: 1.19 – 5.50, p = 0.01) and Depersonalization (OR = 2.67, 95% CI: 1.06 – 6.67, p = 0.03). Nurses in the Inpatient Department (IPD) (n = 162) had significantly higher odds of Emotional Exhaustion (OR = 3.42, 95% CI: 1.71 – 6.9, p = 0.001). Conversely, there was no significant association between burnout and gender, marital status, education level, and work promotion (Table 4).

Table 4: Factors Associated with Burnout among Nurses_ Ordinal Analysis

Variable	Total #	Emotional Exhaustion			Depersonalization		
	364	OR	CI	p-value	OR	CI	p-value
Sex							
Female	234	-	-				
Male	96	0.66	0.36-1.2	0.19	0.56	0.25 – 1.23	0.14
Age (Years)							
<25	2	--					
25-24	113	--					
35-44	152	0.63	0.28-1.4	0.25	3.12	1.24 – 8.1	0.08
45+	97	3.52	0.69-20.5	0.14	25	3.46 – 21	**0.002**
Marital status							
Divorced/separated/Widowed	24						
Married	262	1.03	0.24-3.8	0.96	1.62	0.22 – 7.54	0.57
Single	78	0.60	0.12-2.67	0.51	1.92	0.23 – 11.4	0.50
Education level							
Bachelor degree	192	--					
Certificate	16	0.1	0.4	0.9	1.0	Inf	Inf
Diploma	139	1.77	0.86-3.76	0.12	0.62	0.26 – 1.47	0.27
Master's degree	17	3.32	0.76-23	1.15	2.65	0.37 – 57	0.41
Years of experience as a Nurse							
<5 years	123	--					
6-10 years	102	4.12	2.02-8.8	**0.001**	1.22	0.52 – 2.98	0.69
11-15 years	39	2.14	0.7-6.9	0.19	1.43	0.28 – 11	0.65
More than 15 years	100	4.51	1.04-23	0.06	0.41	0.08 – 2.27	0.27
Last promotion							
<3 years	197						
4-6 years	80	0.66	0.26 – 1.7	0.3	2.06	0.57 – 10	0.72
>7 years	19	1.13	0.15 – 23.8	0.9	0.71	0.11 – 5.91	0.3
Not promoted	68	1.20	0.55 – 2.6	0.6	1.32	0.51 – 3.57	0.56
Shift Schedule							
Day shift	88						
Night shift	14	4.62	0.95 – 34.8	0.08	3.70	0.52 – 76	0.56
Fixed shift	37	1.50	0.55 – 4.21	0.4	1.47	0.42 – 6.00	0.26
Rotating shift	225	2.55	1.19 – 5.50	**0.01**	2.67	1.06 – 6.67	**0.03**
Department							
ICU	103		1.0		--		
IPD	106	3.42	1.71 – 6.9	**0.001**	0.75	0.32 – 1.7	0.49
OPD	31	1.06	0.38 – 2.9	0.91	2.17	0.56 – 10.9	0.29
Maternity	53						
Psychiatry	15						
Others (Theatre, EMD, NHIF clinic, and Dialysis)	56	5.20	1.79 – 17	**0.004**	2.14	0.57 – 10.6	0.30

The researcher also assessed the satisfaction, and level of nurses regarding the working hours, essential staffing supplies, workload, and staffing. The results in Table 5 below revealed that 54.1% of respondents were satisfied with the essential supplies provided at their departments, 55.1% were not satisfied with the working hours they spent at work and 72.3% responded that staffing in their departments was not satisfactory. Regarding the workload, 57.7% of nurses responded that the workload in their respective departments was heavy (Table 6).

Table 5: Overall Nurses' Job Satisfaction

Working hours: n=361			**Essential Supplies: n=364**		**Staffing: n=364**	
	# respondents	**% Satisfaction**	**# respondents**	**% Satisfaction**	**#respondents**	**% Satisfaction**
Very dissatisfied	24	6.6	4	1.1	64	17.6
Dissatisfied	199	55.1	158	43.4	263	72.3
Satisfied	133	36.8	197	54.1	33	9.1
very satisfied	5	1.4	5	1.4	4	1.1

Table 6: Nurses' Workload

	# of respondents	**%**
Heavy	210	57.7
Light	1	0.3
Moderate	133	36.5
Overwhelmed	20	5.5

4.5 Assessing Workload, Staff Satisfaction, and Organizational Effectiveness

For the variable "Enough staff," the chart illustrates that a vast majority of respondents, accounting for 95.1%, indicated that there were not enough staff to meet the demands of the workload. Further analysis revealed that 75% of respondents responded were not recognized for their efforts at work.

For the variable "Overall work environment," a small percentage (3.3%) of respondents deemed it ineffective, while the majority (77.7%) expressed a neutral stance, and a notable proportion (19.0%) rated it as effective. In terms of "Training staff," a minority (6.7%) considered it ineffective, while the vast majority (78.8%) viewed it as effective. A significant majority of nurses (80.5%) perceived communication within the organization as ineffective. In contrast, a very small percentage (4.1%) found it effective, and 15.4% had a neutral stance.

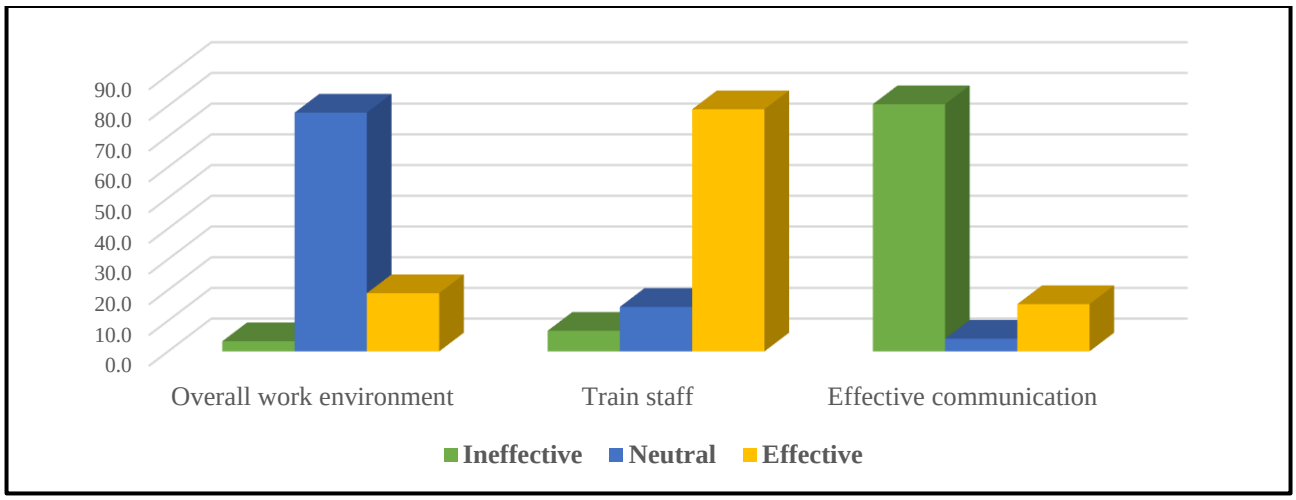


Figure 2: Work Environment, Training, and Communication Effectiveness at MNH

4.6 Perceived consequences of burnout among nurses

The objective of this analysis is to investigate the reported consequences of burnout among nurses at MNH. Burnout can have profound implications for both individual well-being and healthcare system functioning, potentially leading to decreased job satisfaction, increased turnover rates, and compromised patient care quality.

The results in Table 7 reveal significant outcomes related to the reported consequences of burnout among nurses at MNH. A considerable proportion of nurses reported experiencing physical health problems like backache and joint pain as a result of burnout, with 236 (71.6%) indicating 'Yes' compared to 94 (28.4%) indicating 'No'. In this study, a majority of nurses, 232 (70.3%), reported not taking sick leave due to burnout, whereas 98 (29.7%) did. The data also highlighted the utilization of counseling services, with 51 (15.5%) nurses seeking counseling sessions to cope with burnout.

Similarly, a notable number of nurses, 260 (78.8%) did not seek medication to manage burnout-related symptoms. Interestingly, a significant proportion of nurses, 294(74%) explained that burnout led to medical error in documentation, and 208 (63.0%), reported that burnout affected their job satisfaction.

Table 7: Reported consequences of burnout among nurses in MNH

Reported consequences	No	Yes
Experienced physical health problems	94	236
Taken sick leave	232	98
Sought counseling sessions	279	51
Sought medication	260	70
This led to medical errors	70	294
Affected job satisfaction	122	208

Figure (3) presents the results of a survey on health and job-related issues among respondents. A significant (64.7%) of respondents reported experiencing physical health problems and when it came to taking sick leave, only 26.8% acknowledged having taken it. Seeking counseling sessions was reported by 14.0% of respondents, with a larger 76.4% indicating they had not sought such help. Similarly, 19.2% of respondents sought medication, compared to 71.2% who

did not. A notable 74.0% admitted that their health issues led to medical errors affecting patients. Finally, job satisfaction was affected by 62.6% of the respondents.

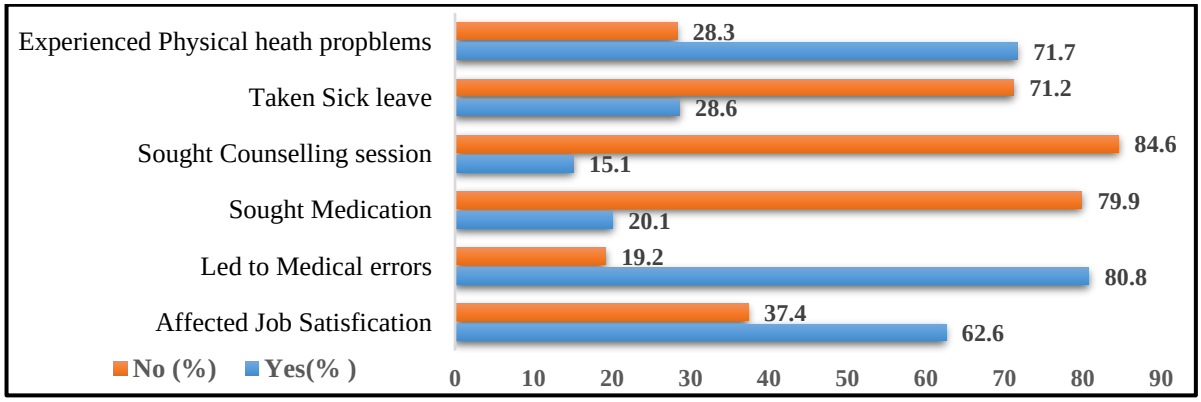


Figure 3: Frequency distribution of reported consequences of burnout among nurses at MNH

4.7 Coping Mechanisms Utilized by Nurses to Manage Burnout at MNH

Coping mechanisms are crucial for nurses in managing burnout and maintaining well-being amidst the demanding healthcare environment. Among the various strategies employed, seeking professional support emerges as the most prevalent coping mechanism, with 35.3% of nurses opting for this approach. Additionally, exercise serves as a popular coping strategy, with 30.1% of nurses engaging in physical activity to alleviate burnout-related stress. Meditation and relaxation techniques are also widely utilized, with 24.9% of nurses incorporating these practices into their coping repertoire. A smaller proportion of nurses, constituting 9.6%, employ other strategies to cope with burnout, highlighting the diverse range of approaches utilized by nurses in managing burnout. These coping mechanisms play a vital role in enhancing resilience and mitigating the adverse effects of burnout among nurses at MNH.

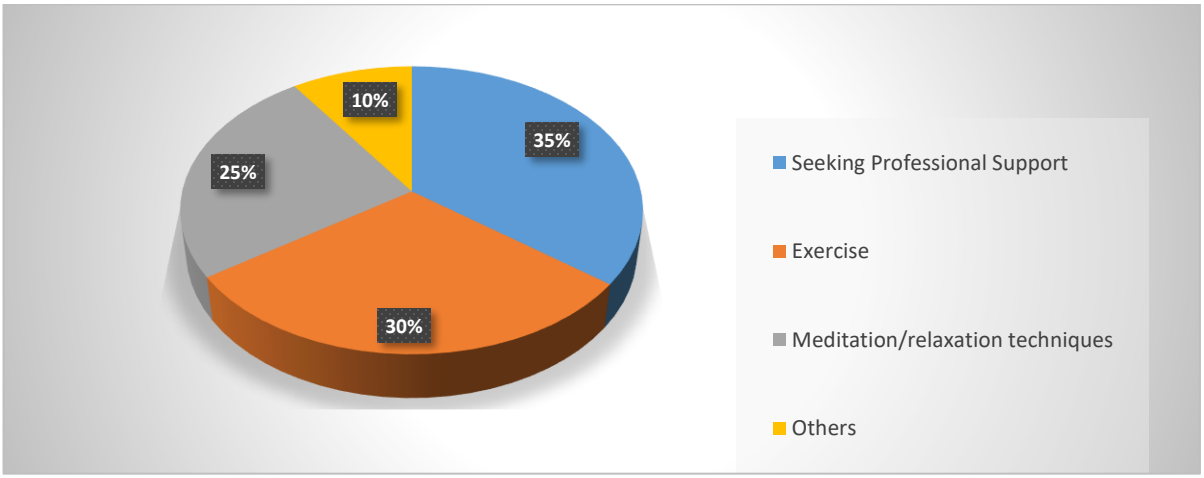


***Figure 4*:** Coping Mechanisms Utilized by Nurses to Manage Burnout at MNH.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This study assessed the prevalence and contributing factors of burnout among nurses at MNH. The results have shown the diverse distribution across departments highlights the study's strength and the broad representation of nurses' perspectives on burnout at MNH. The results have shown that several factors contribute to burnout among nurses at MNH. From the perspectives of Nurses, the results also have shown the opportunities to mitigate work-related stress that could potentially reduce burnout.

5.2 Demographic characteristics

In terms of demographic characteristics, the study sample was predominantly female, consistent with global trends in the nursing profession where women represent the majority (Nigenda, Serván-Mori, Aristizabal, & Zárate-Grajales, 2020). The age distribution showed a proportion of nurses between 35 and 44 years (41.8%), which aligns with findings from similar studies that indicate mid-career nurses often experience higher levels of professional responsibility and, consequently, more job-related stress (Tsai & Tsou, 2022). Furthermore, 72% of the participants were married, which may play a role in moderating or exacerbating burnout, as family responsibilities can both support and stress healthcare workers depending on context (Chen et al., 2022).

The educational background of the respondents revealed that over half of nurses held a bachelor's degree, while 38.2% had diploma. Research indicates that higher levels of education can provide nurses with better coping mechanisms and problem-solving skills, potentially reducing burnout risk (Bridgeman, Bridgeman, & Barone, 2018). The data on work experience highlighted that about one-third of the nurses had less than five years of experience, a critical factor since research shows that early-career nurses are more prone to burnout due to the transition from training to practice (Brook, Aitken, MacLaren, & Salmon, 2021). Different shifting schedules were practiced at MNH highlighting the prevalence of flexible scheduling arrangements to meet the demands of patient care within the healthcare facility.

5.3 The prevalence of burnout among nurses at MNH

The findings revealed varying levels of burnout among the participants. The proportion of nurses reported low levels of burnout suggesting that they have developed effective coping mechanisms or work environments that support their well-being.

The burnout prevalence data aligns with trends seen in other studies, where emotional exhaustion is the most commonly reported dimension of burnout among nurses (Abellanoza, Provenzano-Hass, & Gatchel, 2018). In this study, while 25.9% reported moderate emotional exhaustion, no participants reported high levels. This suggests that while emotional exhaustion is present, it has not reached a critical level for most respondents. Depersonalization, a form of emotional distancing from patients, was moderate in 29.2% of participants, which mirrors findings from studies showing this as a common coping mechanism in high-stress environments (Gillmeister et al., 2024).

In line with this, studies by Kong et al. and a cross-sectional study on U.S. nurses have shown high levels of emotional exhaustion, depersonalization, and reduced personal accomplishment, highlighting the demanding nature of nursing and the prevalence of burnout in the profession (Zou et al, 2016). However, research by Samadi et al. revealed that nurses in surgical wards experience higher burnout levels compared to those in internal wards, suggesting variations in burnout based on the nursing environment (Samadi et al, 2024).

The study findings indicate a significant number of nurses facing moderate levels of burnout. These findings indicate that a considerable number of nurses may be experiencing sharp emotional exhaustion and detachment from their work, potentially affecting their quality of care delivery. Supporting this, a study by Smith et al, demonstrated similar trends where a substantial percentage of nurses reported moderate levels of emotional exhaustion and depersonalization, emphasizing the challenges faced by healthcare professionals in managing burnout and its implications on patient care (Sacadura-Leite et al, 2019). These findings underscore the importance of addressing burnout in nursing to ensure optimal patient outcomes and the well-being of healthcare providers. The absence of any nurses reporting moderate personal accomplishment levels is striking, implying that the challenges faced by nurses may be more

focused on the emotional and interpersonal aspects of their work rather than their sense of fulfillment.

The findings suggested that a minority of nurses experience severe burnout, the presence of even a small percentage underscores the importance of implementing strategies to support their well-being and mitigate the potential impact on patient care. The prevalence of high burnout levels, particularly in terms of Emotional Exhaustion and Depersonalization, was relatively low among the surveyed nurses (Gómez-Urquiza et al, 2017).

The study's findings on the frequency distribution of burnout levels among nurses at MNH highlighted the prevalence of moderate levels of emotional exhaustion and depersonalization among participants, while also indicating a strong sense of personal accomplishment across the sample. This is consistent with previous studies that have found moderate levels of emotional exhaustion to be a common experience among healthcare professionals (de Oliveira et al, 2021). This is also consistent with previous research that has found depersonalization to be a common symptom of burnout among healthcare professionals (Odendaal et al, 2023). This is consistent with previous studies that have found personal accomplishment to be an important factor in mitigating burnout among healthcare professionals (Zakaria et al, 2022).

The results indicating mean scores for the burnout subscales among nurses at MNH provided valuable insights into the levels of Emotional Exhaustion, Depersonalization, and Personal Accomplishment experienced by the participants. This offers a quantitative representation of the nurses' experiences with burnout (Qedair et al, 2022). The findings are consistent with previous research that has highlighted the multidimensional nature of burnout and the importance of assessing it across various dimensions to capture the full spectrum of its impact on healthcare professionals (Aheebwa & Omona, 2020).

The high mean score for Emotional Exhaustion (12.8) suggests that nurses at MNH are experiencing high levels of emotional exhaustion, which is a common symptom of burnout (Feleke et al, 2022). This is consistent with research that has found high levels of emotional exhaustion among nurses, particularly in response to job demands and lack of social support

(Dall'Ora et al, 2020). The mean score for Depersonalization (8.5) indicates that nurses at MNH are also experiencing high levels of depersonalization, which is another key dimension of burnout. This is consistent with research that has found depersonalization to be a common symptom of burnout among healthcare professionals, particularly in response to job demands and lack of control over work (Dall'Ora et al, 2020).

5.4 Factors associated with burnout among nurses at MNH

The ordinal regression analysis reveals important information about the factors associated with burnout. Male nurses exhibited lower odds of both emotional exhaustion and depersonalization, though these findings were not statistically significant. This gender disparity aligns with research suggesting that female nurses are more vulnerable to burnout due to higher emotional labor demands and gendered expectations within caregiving roles (Artz, Kaya, & Kaya, 2022). Age also emerged as a significant factor, particularly for nurses aged 45 and above, who showed increased odds of emotional exhaustion (OR = 3.52, p = 0.14) and depersonalization (OR = 25, p = 0.002). This is consistent with studies highlighting that older nurses may experience burnout due to cumulative job stress and physical fatigue over their careers (Wang et al., 2022). However, some studies have contradicted this finding, showing no significant relationship between age and burnout (Cañadas-De la Fuente et al, 2018).

Experience was another key factor influencing burnout. Nurses with 6-10 years of experience had significantly higher odds of emotional exhaustion (OR = 4.12, p = 0.001). This mid-career period often coincides with increased job responsibilities and personal life challenges, contributing to higher burnout rates (Dyrbye et al., 2017). Moreover, rotating shift schedules were strongly associated with burnout, with those working rotating shifts having higher odds of emotional exhaustion (OR = 2.55, p = 0.01) and depersonalization (OR = 2.67, p = 0.03). Previous studies have shown that irregular work schedules disrupt sleep patterns and circadian rhythms, leading to increased stress and burnout (Flo et al., 2014).

Finally, departmental differences in burnout were evident, with nurses working in the Inpatient Department (IPD) showing significantly higher odds of emotional exhaustion (OR = 3.42, p = 0.001) compared to those in the ICU. This could be due to the high patient load and the constant demands for patient care in inpatient settings (Tomey, 2019). This is consistent with research suggesting that work environment and patient population can influence burnout levels (Aronsson et al, 2017; Van Bogaert et al, 2014). However, other studies have not found significant differences in

burnout based on department (Xu et al, 2020). These findings highlight the multifaceted nature of burnout and the need for targeted interventions addressing specific risk factors, the work environment plays a crucial role in exacerbating or mitigating burnout (Vahey et al., 2016).

5.5 The reported consequences of burnout among nurses at MNH

Through examining the reported consequences of burnout, this objective aims to provide insights into the specific challenges faced by nurses at MNH because of burnout, informing the development of targeted interventions to address these issues effectively. The study on burnout among nurses at MNH revealed significant consequences including physical health problems like backache and joint pain, increased medical errors affecting patients, and decreased job satisfaction. This is consistent with a study on burnout among doctors in Tanzania (Crowe et al, 2021; Marchand et al, 2023). The study highlighted the high prevalence of burnout and its association with various factors, such as inadequate support, work-related family conflicts, and stressful work environments. These studies underline the detrimental effects of burnout on healthcare providers' physical and mental health, emphasizing the need for interventions to mitigate burnout and its consequences (Marchand et al, 2023).

From this study, a few numbers of nurses at MNH sought counseling services (14%) and medication (19.2%) to cope with burnout-related symptoms. This is contrary to research conducted in Jeddah, Saudi Arabia, which found that 44.8% of nurses experienced burnout, with 26.4% at high risk (Qedair et al, 2022). However, these findings emphasize the importance of providing mental health support and resources for healthcare workers experiencing burnout.

Interestingly, the study at MNH found that burnout affected job satisfaction for a significant proportion of nurses. This is consistent with research in Tanzania that identified risk factors for burnout among emergency medicine providers and specialists, including dissatisfaction with career choice, considering switching institutions, and institutional pressures (Iyer et al, 2022). These studies underline the need for interventions that address both individual and organizational factors contributing to burnout to improve job satisfaction and retention among healthcare workers.

The reported consequences of burnout among nurses at MNH in Tanzania, as evidenced by the study, reveal significant implications for both individual well-being and patient care outcomes. These findings resonate with research conducted in sub-Saharan Africa and globally, emphasizing the pervasive impact of burnout on healthcare providers. In Tanzania, a study on burnout among labor and birth providers highlighted the prevalence of burnout and its association with various factors, shedding light on the experience of burnout in the Tanzanian healthcare context (Modest, 2020). The study found that burnout negatively affects provider well-being, patient outcomes, and healthcare systems, aligning with the reported consequences among nurses at MNH.

The reported consequences of burnout among nurses at MNH in Tanzania, including physical health issues, increased medical errors, and decreased job satisfaction, are consistent with findings from studies conducted in Tanzania and other regions. These studies highlight the urgent need for interventions that address burnout at multiple levels, from individual support to organizational changes, to promote the well-being of healthcare workers and ensure the delivery of high-quality patient care. Overall, these findings underscore the profound impact of burnout on physical health, utilization of support services, and job satisfaction among nurses at MNH, highlighting the urgent need for interventions to address burnout and mitigate its consequences effectively.

5.7 Strengths of the study

The study on burnout among nurses at Muhimbili National Hospital has several strengths. Using the Maslach Burnout Inventory (MBI), a validated tool, ensured reliable and comparable assessments of burnout. The MBI's measurement of Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA) allowed for understanding and targeted interventions. The use of the Open Data Kit (ODK) for data collection enhanced efficiency, reduced errors, and improved accuracy. The analytical design established associations between burnout and its contributing factors and consequences and helped identify specific causes and effects for targeted interventions. A random sampling of 364 nurses ensured a representative sample, enhancing the generalizability of findings.

CHAPTER SIX

6.0 LIMITATIONS AND MITIGATION OF THE STUDY, CONCLUSION AND RECOMMENDATIONS

6.1 Limitations and Mitigation of the Study

The study faced several limitations. One major concern was response bias; participants more affected by burnout might have been more inclined to respond, potentially skewing the results. The study's cross-sectional design limits the ability to infer causality, as it provides only a snapshot of burnout at a single point in time, making it difficult to determine whether the observed factors are causes or consequences of burnout. Additionally, reliance on self-reported data can introduce bias due to inaccuracies in reporting or social desirability bias, where respondents may underreport symptoms of burnout or overreport positive experiences. Despite the high overall response rate, the lower response from certain departments, such as Mental Health, could limit the generalizability of the findings across all departments within the healthcare facility. Finally, the absence of longitudinal data means the study cannot track changes in burnout levels over time or the long-term effects of interventions.

To address these limitations, several strategies can be employed. Future studies could aim to include a more balanced representation from all departments, especially those with lower initial response rates, through targeted recruitment efforts and ensuring anonymity to encourage participation. Combining quantitative surveys with qualitative interviews could provide a more comprehensive understanding of burnout, as qualitative data can offer deeper insights into personal experiences and contextual factors. Future research could incorporate objective measures, such as absenteeism records or performance evaluations, to address potential biases in self-reported data to corroborate self-reported burnout levels.

6.2 Conclusion

The study highlights important demographic, experiential, and work-related factors that contribute to burnout among nurses and its consequences. Key findings include moderate levels of emotional exhaustion and depersonalization. Significant associations were found between nurses' burnout and factors such as age, years of experience as a nurse, nursing shifts, and the department of work. These findings underscore the need for institutional support systems to mitigate burnout, such as mental health services, workload management, and more flexible shift schedules.

6.3 Recommendations

To mitigate burnout among nurses at MNH, several steps should be taken by MNH management. First, enhancing support systems is key during critical times and continually improving them. This includes developing and implementing vigorous mental health services, stress management programs, and peer support groups to help reduce the effects of burnout. This is important as it will help overall well-being, improve the quality of work, and adoptive a supportive organizational culture where the employees can thrive.

Given that older nurses are more vulnerable to depersonalization burnout, MNH management and the Ministry of Health must develop targeted interventions that provide support specifically for this demographic. One approach could be the implementation of wellness programs that focus on stress management, resilience building, and emotional well-being tailored to the needs of older nurses. Additionally, mentoring programs where older nurses can share their experiences and strategies for coping with younger nurses could provide mutual benefits and foster a supportive work environment.

Promoting work-life balance is another essential strategy to be implemented by MNH management. This should be an ongoing effort responsive to changes in individual needs, organizational dynamics, and comprehensive societal trends.

Nurses with 6-10 years of experience showing higher levels of emotional exhaustion suggest a need for mid-career support mechanisms. MNH and other Institutions like educational institutions should consider creating professional development opportunities and career advancement pathways that can re-energize and motivate nurses in this experience bracket.

Providing access to counseling services and peer support groups specifically for mid-career nurses can help in managing burnout symptoms effectively.

The higher odds of emotional exhaustion and depersonalization among nurses working rotating shifts indicate a need for schedule optimization. MNH management should strive to minimize rotating shifts and provide more stable and predictable schedules where possible. The respective block in charge should use their experience to influence the implementation of shift rotation schedules that ensure adequate rest periods between shifts and promote work-life balance to reduce burnout. Additionally, MNH management should offer shift differentials or incentives for those who work fewer desirable shifts, this may help to mitigate some of the associated stress.

The finding that nurses in the Inpatient Department (IPD) are more prone to burnout compared to those in the Intensive Care Unit (ICU) highlights the need for department-specific interventions at MNH and other health facilities. Efforts should be made by MNH management to assess the unique stressors and workload of each department and tailor interventions accordingly. For instance, increasing staffing levels, providing adequate resources, and fostering a positive work environment in the IPD can help alleviate burnout. Regular debriefing sessions and mental health support should also be available to nurses working in high-stress areas at the health facilities.

Additionally, investing in longitudinal research is essential to monitor burnout trends over time, evaluate the long-term effectiveness of interventions, and establish causality between identified factors and burnout. This advances scientific knowledge and improves the well-being of nurses. Longitudinal research involves tracking a cohort of individuals over a certain period whereby data is collected by health researchers at multiple points to analyze changes in burnout levels, associated factors (such as workload, organizational culture), and outcomes (burnout). The research should be conducted by health Research Institutions like NIMR, health Universities, and Government Agencies like the Ministry of Health to understand and mitigate workplace-related health issues.

Finally, adopting a holistic approach considering all the dimensions of physical, psychological, social, environmental, and spiritual by expanding research to include broader contextual factors

such as organizational culture, management practices, and external socioeconomic conditions will offer a more comprehensive understanding of the contributors to burnout.

6.4 Suggestions for further study

Health Academic researchers, Health Research Institutions, MNH, Health Universities, Government Agencies like the Ministry of Health, and Non-government Health organizations should conduct longitudinal research to allow for the assessment of burnout trends over time and the effectiveness of interventions, helping to understand causality and the long-term impact of various factors on burnout. Use of findings to inform health facility and department/unit-specific interventions.

Further studies should expand the scope to consider additional factors, such as organizational culture, management practices, and external socioeconomic conditions, which could provide a more holistic view of the contributors to burnout.

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APPENDICES

Appendix I: Informed Consent Form: English Version

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

INFORMED CONSENT FORM

ID-NO. ☐☐

Greetings,

My name is Ua Kassim from the Muhimbili University of Health and Allied Sciences in Dar es Salaam pursuing a Master of Public Health.

The aim of the Study: Dear respondent, I am glad to notify you that I am going to conduct a research study titled ‘’Burnout among Nurses and Reported Consequences to Staff Well-being and Patient Care in Muhimbili National Hospital, Tanzania.

I am giving you a brief information about your involvement in this study.

This study aims to assess the ‘’Burnout among nurses and reported consequences to staff well-being and patient care at Muhimbili National Hospital, Tanzania’’. You are asked to participate in this study due to the knowledge you have that is important for this study. Kindly be truthful for the benefit of the results that could lead to better interventions and suggestions for improvement in the future.

What Participation Involves: If you accept to participate in the study, you will be questioned and the information you provide will be stored safely with access only to the researcher. You will be asked about your lived experiences of burnout and its consequences to the well-being

and patient care while conducting your routine nursing care at the hospital. It will take about half an hour to answer the questions in the questionnaire in a private, quiet, and secure place.

Confidentiality: The information that will be provided will be treated with respect and confidentially. There will be no identification of names throughout the study thus no one will identify you. The research information will not be linked with the participants' names. The data and all the information that will be obtained will be taken care of by the research Investigator. The findings will be shared at the National level and the research Investigator will submit the Manuscripts in Scientific journals for publication.

Right and withdrawal alternatives: Your involvement in the study is voluntary. You may decide not to participate in the study despite having consented. If you decide not to participate, that has no relation to your routine work. No punishment will be given for the decision of not participating or There is no penalty for refusing to participate in the study. Being not participating in the study does not mean that you will lose anything.

Benefits: The information that will be provided regarding this study will help to gain knowledge on the matter. The findings will improve the quality of care at the healthcare facilities in Tanzania.

If any damage occurs: No damage is anticipated to happen to you due to your participation

Risks: We expect no harm to occur throughout the study. You may decide not to continue with the conversation whenever you feel uncomfortable.

Who to Contact: Any inquiries should be addressed to the **Principal Investigator, Ua Kassim** (+255 752 056 465) of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam.

Any concerns regarding your rights for participation, you may kindly call **Dr. Israel Nyarubeli, Coordinator** (Research and Publications Committee, MUHAS. P.O. Box 65001, Dar es Salaam

– Tanzania, Tel +255 757 729779); and **Associate Professor, Switbert R. Kamazima** who is the **supervisor** of this study (Tel. +255 713 201190)

Signature:

Are you ready to participate?

Participant agrees ……... Participant does NOT agree …….....……

I ……. have reviewed the information in this content and my doubts have been cleared. I am ready to be part of the team. My questions have been answered. I agree to participate in this study.

Signature of respondent ……

Signature of Researcher …….....

Date of signed consent ……

Declaration: The information above describes the benefits, risks, and procedures for the research entitled "Burnout among Nurses and Reported Consequences to Staff Well-being and Patient Care in Muhimbili National Hospital, Tanzania'' This has been narrated and clarified to me and I was voluntarily able to participate. I certify that the nature and purpose, the potential benefits, and possible risks related to participating in this study have been explained to me.

Signature or Right Thumb stamp of the respondent..... Date.....

Signature of Researcher.....…….....Date.....

Appendix II: Fomu ya ridhaa: Toleo la Kiswahili

CHUO KIKUU CHA SAYANSI ZA AFYA MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI

FOMU YA RIDHAA

Namba ya utambulisho ☐☐

Ridhaa ya kushiriki kwenye utafiti

Hujambo! Jina langu ni Ua Kassim, kutoka Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili. Nasoma shahada ya pili ya sayansi ya afya ya jamii.

Madhumuni ya Utafiti: Ndugu mshiriki, ninayo furaha kukutaarifu kwamba ninafanya tafiti kuhusu ‘’Uchovu kwa wauguzi na madhara yaliyoripotiwa kwa ustawi wa wafanyakazi na huduma kwa wagonjwa katika Hospitali ya Taifa ya Muhimbili, Tanzania’’ Napenda nikupatie maelezo kuhusu ushiriki wako katika tafiti hii

Utafiti huu unalenga kutathmini kiwango na sababu zinazochangia uchovu wa wauguzi katika Hospitali ya Taifa Muhimbili. Unaombwa kushiriki katika utafiti huu kutokana na upeo na ufahamu ulio nao ambavyo ni muhimu kwa utafiti huu. Tafadhali kuwa mkweli na muwazi kwa vile matokeo ya utafiti huu yanaweza yakatoa maamuzi na mapendekezo ya baadaye.

Ushiriki Unahusisha Nini: Ukikubali kushiriki katika utafiti huu, utaulizwa maswali na Taarifa utakazotupatia zitahifadhiwa kwa usalama na anakayeweza kuzifikia ni mtafiti mkuu pekee. Utaulizwa maswali kuhusu hali yako ya kuchoka na kuripoti matokeo kwa ustawi na subira wakati wa kufanya uuguzi wako wa kawaida hospitalini. Itachukua muda wa nusu saa kukamilisha kujibu maswali katika dodoso mahali pa faragha, tulivu na salama.

Usiri: Tutalinda na kushughulikia taarifa utakazokuwa ukitoa kwa heshima na usiri wa hali ya juu Hatutaandika jina lako kwenye utafiti huu kwa hiyo hutatambuliwa na mtu yeyote.

Jina lako halitaunganishwa na maelezo ya utafiti kwa njia yoyote ile. Taarifa zote zitakazopatikana zitahifadhiwa na mtafiti mkuu. Matokeo ya mwisho baada ya uchambuzi yatashirikiwa na wadau wa kitaifa na mtafiti mkuu atawasilisha maandishi kwenye jarida la kisayansi kwa ajili ya uchapishaji

Haki na kujiondoa katika tafiti: Kushiriki kwako ni kwa hiari. Unaweza kukataa kushiriki katika utafiti wakati wowote wakati wa mahojiano hata kama umekubali kushiriki. Kama utajitoa katika utafiti, hautahusishwa na haki yako ya kufanya kazi hapa hospital. Hakuna adhabu kwa kukataa kushiriki kwenye utafiti na hutapata hasara yoyote ukikataa kushiriki katika utafiti huu

Faida: Taarifa utakazotoa zitasaidia kuongeza uelewa juu ya uzoefu wa kuchoshwa na uchovu miongoni mwa wauguzi na madhara yaliyoripotiwa kwa wafanyakazi na wagonjwa katika Hospitali ya Taifa Muhimbili, Dar es salaam. Matokeo yatasidia kuboresha huduma za afya katika vituo vya afya vya nchini

Endapo utapata madhara: Hutegemewi kupata madhara yoyote kutokana na ushiriki wako katika utafiti huu.

Hatari: Hatutegemei kupata hatari yoyote katika kipindi chote cha utafiti. Hata hivyo, uko huru kuacha kushiriki wakati wowote wakati wa mjadala huu katika tukio ambalo unahisi halitakuletea raha.

Nani wa kuwasiliana naye: Kama una maswali kuhusiana na utafiti huu, wasiliana na **Mtafiti mkuu wa utafiti huu, Ua Kassim (**Simu +255 752056465) wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S. L. P. 65001, Dar es Salaam.

Kama una swali kuhusu stahili zako kama mshiriki unaweza kupiga simu kwa **Dr. Israel Nyarubeli, Mratibu** (Research and Publications Committee, MUHAS. S.L.P 65001, Dar es Salaam – Tanzania, Tel +255 757 729779); au Msimamizi wa utafiti huu **Associate Professor Switbert R. Kamazima** (Tel. +255 713 201190)**.** S.L.P. 65001, Dar –es Salaam

Sahihi: .....

Je umekubali?

Mshiriki amekubali ……..... Mshiriki hajakubali …….....

Mimi ..... nimesoma maelezo ya fomu hii.

Maswali yangu yamejibiwa.Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki……

Sahihi ya mtafiti …….....

Tarehe ya kutia sahihi ya idhini ya kushiriki…….

Tamko

Waraka uliotajwa hapo juu unaelezea faida, hatari na taratibu za utafiti wenye kichwa ‘’Uchovu kwa wauguzi na madhara yaliyoripotiwa kwa ustawi wa wafanyakazi na huduma kwa wagonjwa katika Hospitali ya Taifa ya Muhimbili, Tanzania’’ imesomwa na kuelezwa kwangu na Nimekubali kushiriki. Ninathibitisha kuwa asili na madhumuni, manufaa yanayoweza kutokea, na hatari zinazowezekana zinazohusiana na kushiriki katika utafiti huu zimefafanuliwa kwangu.

Sahihi au dolegumba la Mshiriki .....Tarehe .....

Sahihi ya Mtafiti .....…….....Tarehe .....

Appendix III: Structure Interview Questionnaire on Nurse Burnout at Muhimbili National Hospital (English Version)

For each question below, you are supposed to fill in the questionnaire and provide information about the individual, experiences on burnout, factors contributing to burnout, and the consequences of burnout.

Section A : Demographic Information

1.Sex

a. Male

b. Female

2.**Age** _____ **years**

3.**Marital status**

a. Single

b. Married

c. Divorced

d. Widowed

e. Separated

4.**What is your education level?**

a. Certificate

b. Diploma

c. Bachelor's degree

d. Master's degree

e. Doctoral degree

f. Other (please specify)

5.Years of experience as a Nurse

a. Less than 1 year

b. 1-5 years

c. 6-10 years

d. 11-15 years

e. More than 15 years

6.**Years worked in the same department as a nurse**

a. Less than 1 year

b. 1-2 years

c. 3-5 years

d. 6-10 years

e. More than 10 years

7.Department you are working with

a. OPD

b. IPD

c. Mental Health Department

d. ICU

e. Other (please specify)

8.**How long have you stayed since your last promotion?**

a. Less than 1 year

b. Between 1-3 years

c. Between 4-6 years

d. Between 7-10 years

e. More than 10 years

f. Not promoted

9.Shift Schedule

a. Day Shift

b. Night Shift

c. Rotating Shifts

d. Fixed Shifts

Section B: Burnout Assessment

Objective 1: To determine the prevalence of burnout among nurses in MNH in Tanzania

For the following statements, please indicate the frequency with which you experience each feeling on a scale from 0 to 6, where

0 = Never

1 = A few times a year or less

2 = Once a month or less

3 = A few times a month

4 = Once a week

5 = A few times a week

6 = Every day

10. Emotional Exhaustion

a. I feel emotionally drained from my work

b. I feel used up at the end of the workday

11. Depersonalization

a. I've become more callous/negative towards people since I took this job.

b. I worry that this job is hardening me emotionally

12. Reduced Personal Accomplishment

a. I feel I'm certainly prompting other people's living through my work.

b. I feel successfully dealing with the challenges of my patients.

13. Overall Job Satisfaction

Based on your experience, share your satisfaction with the following parameters

(1= Very dissatisfied 2 dissatisfied 3. Satisfied 4 Very satisfied)

	1	2	3	4
Working hours	○	○	○	○
Professional growth opportunities	○	○	○	○
Essential supplies	○	○	○	○
Staffing level	○	○	○	○

14. Work-Life Balance

How would you rate your work-life balance? (1= Never, 2= a few times per month, 3. once a week, 4= every day).

	1	2	3	4
I used more time with friends	○	○	○	○
I used more time with Family	○	○	○	○
I used more time Self	○	○	○	○
I used more time at my Job	○	○	○	○
I used more time with my carrier	○	○	○	○

15. Perceived Support

Do you feel adequately supported by your colleagues and supervisors?

Share your experience with the support you received (1. Not supported 2. Somehow supported 3. Supported)

	1	2	3
Workload	○	○	○
Technical support	○	○	○
Protective mechanisms	○	○	○

16. Coping Mechanisms

How do you typically cope with work-related stress? Share your experience with the copying mechanisms used. (1= Never, 2= a few times per month, 3. once a week, 4= every day).

	1	2	3	4
I feel like I'm at the end of my rope (i.e. I feel I can no longer cope)	○	○	○	○
In my work, I deal with emotional problems very calmly.	○	○	○	○
I can easily create a relaxed atmosphere with my patients.	○	○	○	○

Section C: Objective 2: Factors associated with burnout among nurses at MNH

How long do you work in a day? Week?

17. Which best defines your present workload?
    a. Light
    b. Moderate
    c. Heavy
    d. Overwhelming

18. Staffing Levels

Do you believe there are enough staff members in your unit to meet patient needs?
    a. Yes
    b. No

19. Work Environment

How would you characterize the overall work environment in your healthcare facility?
    a. Positive
    b. Neutral
    c. Negative

20. Interpersonal Relationships

How would you rate the relationships among colleagues in your workplace?
    a. Positive
    b. Neutral
    c. Negative

21. Job Control and Autonomy

Do you feel you have sufficient control over your work and decision-making?
    a. Yes
    b. No

22. Recognition and Rewards
    a. Yes
    b. No
    c. Do you feel adequately recognized or rewarded for your efforts at work?

23. Training and Professional Development

How fulfilled are you with the training and professional development opportunities provided?

a. Not fulfilled
b. Somewhat fulfilled
c. Very fulfilled
d. N/A

24. Organizational Communication

How would you describe the effectiveness of communication within the organization?

a. Ineffective
b. Neutral
c. Effective

25. Patient Care Challenges

Are there specific challenges in patient care that contribute to your stress?

a. Yes
b. No
c.

26. Personal Coping Mechanisms

a. Exercise
b. Meditation/Relaxation Techniques
c. Talking to Colleagues
d. Seeking Professional Support
e. Other (please specify)

Section D: Objective 3: Perceived reported consequences of burnout among nurses in MNH, in Tanzania.

27. Have you experienced any physical health problems like backache and joint due to burnout in your nursing role?

a. Yes
b. No

28. On a scale from 1 to 10, with 1 being the least and 10 being the most, how would you rate the impact of burnout on your job performance?
    a. 1-3
    b. 4-6
    c. 7-10
29. Have you taken sick leave due to burnout-related consequences in six months past?
    a. Yes, I took
    b. No, I haven't
30. Are you currently seeking professional counseling or mental health support to cope with burnout consequences?
    a. Yes
    b. No
31. To what extent has burnout affected your interpersonal relationships at work?
    a. Not at all
    b. Somewhat
    c. Moderately
    d. Significantly
32. Have you noticed any decline in your overall job satisfaction as a result of burnout?
    a. Yes
    b. No
33. How often do you experience emotional exhaustion due to burnout?
    a. Rarely
    b. Occasionally
    c. Frequently
    d. Always
34. In your opinion, has burnout led to an increase in medical errors or incidents of patient care lapses?
    a. Yes
    b. No
35. Have you sought medication or other forms of treatment for mental health issues related to burnout?
    a. Yes
    b. No
36. On a scale from 1 to 5, with 1 being strongly disagreed and 5 being strongly agree, how much do you agree that burnout has negatively impacted your overall quality of life?
    a. 1-2
    b. 3
    c. 4-5

Appendix IV: Dodoso la mahojiano juu ya Msongo moto kwa wauguzi katika Hospitali ya Taifa ya Muhimbili (Kiswahili version)

Kwa kila swali hapa chini, unatakiwa kujaza dodoso na kutoa Taarifa zako binafsi, uzoefu juu ya uchovu, sababu zinazochangia uchovu na matokeo yake.

Sehemu A: Taarifa za Kidemografia

1. Jinsi
   a. Mwanaume
   b. Mwanamke
2. Umri _____
3. Hali ya ndoa
   a. Hajaoa/hajaolewa
   b. Ameoa/ameolewa
   c. Ameachika
   d. Mjane
   e. Kutengana/Kuachana
4. Kiwango chako cha elimu ni kipi?
   a. Cheti
   b. Diploma
   c. shahada
   d. Master's degree/Astashahada
   e. Doctoral degree
   f. Mengineyo (ainisha)
5. Miaka ya uzoefu kama Muuguzi
   a. Chini ya Mwaka mmoja
   b. Mwaka mmoja mpaka mitano
   c. Miaka sita mpaka kumi
   d. Miaka 11 mpaka -15
   e. Zaidi ya miaka 15

6. Miaka uliyofanya kazi kwenye Kitengo kimoja
    a. Chini ya Mwaka mmoja
    b. Mwaka 1-2
    c. Miaka 3-5
    d. Miaka 6-10
    e. Zaidi ya miaka 10
7. Kitengo unachofanyia kazi
    a. OPD
    b. IPD
    c. Kitengo cha afya ya akili
    d. ICU (Wodi ya watu Mahututi)
    e. Kwingineko (ainisha)
8. Je, ni miaka mingapi imepita tangu upandishwe cheo mara ya mwisho?
    a. Chini ya Mwaka 1
    b. Miaka 1-3
    c. Miaka 4-6
    d. Miaka 7-10
    e. Zaidi ya miaka 10
    f. Sijawahi kupanda daraja
9. Ratiba ya zamu
    a. zamu ya Siku
    b. Zamu ya usiku
    c. Kupokezana zamu
    d. Mabadiliko yasiyobadilika

Sehemu B : Tathmini ya Uchovu (Imechukuliwa kutoka Orodha ya Maslach Burnout)

Lengo la 1 : Kutathmini Kiwango cha uchovu miongoni mwa wauguzi wa Hospitali ya Taifa Muhimbili, nchini Tanzania

Kwa kauli zifuatazo, tafadhali ainisha ni mara ngapi unapata hisia kwenye mizani kutoka 0 hadi 6, ambapo:

0 = Kamwe

1 = Mara chache kwa mwaka au chini

2 = Mara moja kwa mwezi au chini

3 = Mara chache kwa mwezi

4 = Mara moja kwa wiki

5 = Mara chache kwa wiki

6 = Kila siku

10. Kuchoka Kihisia

a. Ninahisi uchovu wa kihemko kutoka kwa kazi yangu

b. Mwishoni mwa siku ya kazi, ninahisi kutumika sana

11. Kuchukulia kitu kwa ubinafsi

a. Nimekuwa mchukizi kwa watu tangu nilianza kazi hii.

b. Nina wasiwasi kwamba kazi hii inanitia ugumu kihisia

12. Kupunguza Ufanisi wa kukamilisha mambo

a. Ninahisi ninahamasisha vyema maisha ya watu wengine kupitia kazi yangu.

b. Ninahisi niko vizuri katika kushughulikia kikamilifu matatizo ya wagonjwa wangu.

13. Kuridhika na kazi kwa ujumla

Je, umeridhishwa kwa kiasi gani na kazi yako ya sasa?

Kulingana na uzoefu wako, tuelezee kuridhika kwako na vigezo vifuatavyo

(1= sijaridhika kabisa 2 Sijaridhika 3. Nimeridhika kwa kiasi fulani 4. Nimeridhika sana)

	1	2	3	4
Masaa ya kazi	○	○	○	○
Fursa za ukuaji wa kitaaluma	○	○	○	○
vifaa muhimu vya kazi	○	○	○	○
Kiwango cha wafanyakazi	○	○	○	○

14. Usawa wa Maisha na Kazi

Je, unaweza kupima vipi usawa wa maisha na kazi yako? (1= Kamwe, 2= mara chache kwa mwezi, 3. mara moja kwa wiki, 4 = kila siku).

	1	2	3	4
Natumia muda mwingi nikiwa na marafiki	O	O	O	O
Natumia muda mwingi nikiwa na familia	O	O	O	O
Natumia muda mwingi nikiwa pekeyangu	O	O	O	O
Natumia muda mwingi kazini	O	O	O	O
Natumia muda mwingi katika kujiendeleza	O	O	O	O

15. Msaada Unaooudhania

Je, unahisi kuungwa mkono vya kutosha na wenzako au wasimamizi wa kazi ? Shiriki uzoefu wako na msaada uliopokea (1. sikupata msaada 2. Nilisaidiwa Kwa namna fulani 3. nilisaidiwa)

	1	2	3
Wingi wa kazi	O	O	O
Msaada wa kiufundi	O	O	O
Utaratibu wa kujikinga	O	O	O

16. Mbinu za Kukabiliana

Je, wewe hukabiliana vipi na msongo unaohusiana na kazi ?

Kwa kawaida unakabilianaje na mafadhaiko yanayohusiana na kazi ? Tuambie uzoefu wako na Mbinu ulizotumia? (1= Kamwe, 2= mara chache kwa mwezi, 3. Mara moja kwa wiki, 4 = kila siku).

	1	2	3	4
Ninahisi kama niko mwisho (yaani ninahisi siwezi tena kuhimili)	O	O	O	O
Katika kazi yangu, ninashughulikia matatizo ya kihisia kwa utulivu sana.	O	O	O	O
Ninaweza kweka vizuri mazingira ya kupumzika na wagonjwa wangu	O	O	O	O

Sehemu C : Lengo la 2: Sababu ya Uchovu miongoni mwa wauguzi wa Hospitali ya Muhimbili

17. Unaelezeaje mzigo wa kazi ulionao kwa sasa?

a. Mwepesi

b. Wastani

c. Mzito

d. Umeelemea kupindukia

18. Ngazi za Utumishi

Unafikiri kuna wafanyakazi wa kutosha kukidhi mahitaji ya wateja katika kitengo chako ?

a. Ndio

b. Hapana

19. Mazingira ya Kazi

Je, unawezaje kubainisha mazingira ya kazi kwa ujumla katika kituo chako cha huduma ya afya?

a. Chanya

b. Si upande wowote

c. Hasi

20. Mahusiano baina ya watu

Je, unaweza kupima vipi mahusiano kati ya wafanyakazi wenzako katika eneo lako la kazi?

a. Chanya

b. Si upande wowote

c. Hasi

21. Udhibiti wa Kazi na Uhuru

Je, unahisi una udhibiti wa kutosha juu ya kazi yako na ufanyaji wa maamuzi?

a. Ndiyo

b. Hapana

22. Kutambuliwa na Tuzo

Je, unahisi kutambuliwa vya kutosha au kupata tuzo ipasavyo kwa juhudi zako kazini?

a. Ndiyo

b. Hapana

23. Mafunzo na Maendeleo ya kitaaluma

Je, umeridhishwa kwa kiasi gani na fursa za mafunzo na maendeleo ya kitaaluma zinazotolewa?

a. Sijaridhika

b. Nimeridhika kwa kiasi fulani

c. Nimeridhika sana

d. Haihusiki

24. Mawasiliano ya Shirika

Je, unaweza kuelezeaje ufanisi wa mawasiliano ndani ya shirika?

a. Ufanisi usioridhisha

b. Si upande wowote

c. Ufanisi mzuri

25. Changamoto za Huduma kwa Wagonjwa

Je, kuna changamoto mahususi wakati wa kumuhudumia mgonjwa zinazochangia msongo wa mawazo kwako ?

a. Ndiyo

b. Hapana

26. Mbinu za Kukabiliana na msongo

a. Mazoezi

b. Mbinu za Kutafakari/Kupumzika

c. Kuzungumza na jamaa

d. Kutafuta usaidizi wa Kitaalam

e. Nyingine (tafadhali taja)

Sehemu D: Lengo la 3: Taarifa za matokeo ya Uchovu miongoni mwa wauguzi wa Hospitali ya Taifa ya Muhimbili

27. Je, umekumbana na matatizo yoyote ya kiafya kama vile maumivu ya mgongo na viung kutokana na uchovu katika shughuli zako za uuguzi?

a. Ndiyo

b. Hapana

28. Kwa mizani kutoka 1 hadi 10, huku 1 ikiwa ndogo zaidi na 10 kuwa kubwa zaidi, unaweza kukadiriaje madhara ya uchovu kwenye utendaji wako wa kazi?

a. 1-3

b. 4-6

c. 7-10

29. Je, umechukua likizo ya ugonjwa kutokana na uchovu wa kazi katika miezi sita iliyopita?
    a. Ndiyo
    b. Hapana
30. Je, kwa sasa unatafuta ushauri wa kitaalamu au usaidizi wa afya ya akili ili kukabiliana na madhara ya uchovu?
    a. Ndiyo
    b. Hapana
31. Ni kwa kiwango gani uchovu umeathiri mahusiano yako binafsi kazini?
    a. Hayajaathiri
    b. Yameathiri kwa kiasi fulani
    c. yameathiri kwa kiasi kikubwa
    d. Kwa kiasi kikubwa
32. Je, umeona kupungua kwa kiwango cha kazi yako kutokana na uchovu mwingi?
    a. Ndiyo
    b. Hapana
33. Ni mara ngapi unapata uchovu wa kihisia kutokana na uchovu?
    a. Nadra
    b. Mara kwa mara
    c. Mara kwa mara
    d. Kila mara
34. kwa maoni yako, uchovu umesababisha ongezeko la makosa ya kitiba au matukio ya kukosa huduma kwa wagonjwa ?
    a. Ndiyo
    b. Hapan
35. Je, umetafuta dawa au aina nyingine za matibabu kwa ajili ya masuala ya afya ya akili yanayohusiana na uchovu mwingi ?
    a. Ndiyo
    b. Hapana
36. Katika mizani kutoka 1 hadi 5, huku 1 ikiwa hukubaliani vikali na 5 akikubali kabisa, ni kwa kiasi gani unakubali kwamba uchovu mwingi umeathiri vibaya ubora wa maisha yako kwa ujumla ?
    a. 1-2
    b. 3
    c. 4-5

Appendix V: Ethical clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/2160 Date: 09/04/2024

MUHAS-REC-04-2024-2160
UA KASSIM
School of Public Health and Social Sciences
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: BURNOUT AMONG NURSES AND REPORTED CONSEQUENCES TO STAFF WELL-BEING AND PATIENT CARE IN MUHIMBILI NATIONAL HOSPITAL, TANZANIA

Reference is made to the above heading,

I am pleased to inform you that the Chairman has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 09/04/2024
EXPIRATION DATE OF APPROVAL: 09/04/2025

STUDY DESCRIPTION:
Purpose:

The purpose of this Analytical Cross Sectional study is to assess the Prevalence, contributing factors, and reported consequences of burnout among nurses at Muhimbili National Hospital

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2015363.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

9th April 24

Dr. Kasusu Nyamuryekung'e.

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research, Publications & Innovations
Box 65001

Chairperson, MUHAS Research and Ethics Committee

Appendix VI: Permission Letter

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.668/2022

15th April, 2024

THE EXECUTIVE DIRECTOR,
MUHIMBILI NATIONAL HOSPITAL,
P.O.BOX 65000,
DAR ES SALAAM.

RE: INTRODUCTION LETTER OF UA KASSIM

We would like to inform you that the carrier of this letter is Ua Kassim with registration number HD/MUH/T.668/2022 a student in the School of Public Health and Social Sciences at Muhimbili University of Health and Allied Science (MUHAS), pursuing MPH-Distance Learning

As part of her studies, she will be doing an elective research titled **"BURNOUT AMONG NURSES AND REPORTED CONSEQUENCES TO STAFF WELL-BEING AND PATIENT CARE IN MUHIMBILI NATIONAL HOSPITAL, TANZANIA".** She is being supervised by Prof. Switbert R. Kamazima from MUHAS and Dr. Oswald Wandwe from MNH.

The Ethical Clearance for doing the said research has been given by the University.

Kindly request your assistance and cooperation to our student.

Yours Sincerely,

Mr. Sebe Mohamed
For: DIRECTOR, POSTGRADUATE STUDIES
cc: Ua Kassim

9 United Nations Road; Upanga West; P.O. Box 65001; Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web: https://www.muhas.ac.tz

Appendix VII: Permission Letter MNH

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

MUHIMBILI NATIONAL HOSPITAL

In reply please quote;

Ref. No.: MNH/CRTCU/Perm/2024/169 Date: 16th April, 2024

Direct of Nursing Services,
Muhimbili National Hospital

RE: PERMISSION TO COLLECT DATA AT MNH

Name Student	**Ua Kassim**
Title	**"Burnout Among Nurses and Reported Consequences to Staff Well-Being and Patient Care in Muhimbili National Hospital, Tanzania".**
Institution	Muhimbili University of Health and Allied Sciences
Supervisor	Prof. Switbert R. Kamazima (MUHAS) Dr. Oswald Wandwe
Co – supervisor	**Ester Mwambogoye** (MNH)
Period	16th April, 2024 to 30th May, 2024

Approval has been granted to the above principal investigators to collect data at MNH. Dissemination of study findings at MNH shall be overseen by **Ester Mwambogoye (**MNH) supervisor.

Kindly ensure the named principal investigator abide to the ethical principles and other conditions of the research approval.

Sincerely,

Dr. Charles K. Pallangyo
For: Head of Clinical research, Training and Consultancy Unit

c.c Ester Mwambogoye
c.c **Ua Kassim**

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