

**EFFECTS OF SHIFT WORK AND MARITAL STATUS ON OCCUPATIONAL STRESS
AMONG NURSES IN A TERTIARY HEALTH INSTITUTION IN EDO STATE**

BY

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BMS1900289

FACULTY OF NURSING SCIENCES

UNIVERSITY OF BENIN

OCTOBER, 2025.

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**IN PARTIAL FUFILMENT OF THE REQUIREMENT OF FOR THE AWARD OF
“BACHELOR OF NURSING SCIENCES”. FACULTY OF NURSING
SCIENCES, UNIVERSITY OF BENIN, EDO STATE**

OCTOBER, 2025

DECLARATION

This is to declare that this research project titled "EFFECTS OF SHIFT WORK AND MARITAL STATUS ON OCCUPATIONAL STRESS AMONG NURSES IN A TERTIARY HEALTH INSTITUTION IN EDO STATE." is solely the result of my work except where stated otherwise by reference or acknowledgement as being derived from other person (s) or resources.

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CERTIFICATION/APPROVAL

This is to certify that this research project was carried out by Promise Genesis Akpomedaye Bms1900289 Faculty Of Nursing Sciences University Of Benin, Under The Supervision Of Prof.(Mrs)Roselynd Esewe.

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EXAMINER

DATE

DEDICATION

This project work is dedicated to the Almighty God who has been my constant source of help and strength in my academic journey.

To my beloved Parents, Mr & Mrs Frank Promise, whose unwavering support both financially and morally has kept me outstanding and fostering success all through my academic year.

ACKNOWLEDGMENT

I would like to express my heartfelt gratitude to the ALMIGHTY GOD for His abundant grace, wisdom, and strength throughout this research journey. I would like to thank my supervisor, Prof.(Mrs)R.E.Esewe

For her expert guidance, mentorship, and valuable insights in my research study. I express my deepest gratitude to my amiable parents, Mr G.F Promise and Mrs Helen Promise, for their unwavering support, encouragement, and love.

I would also like to extend my appreciation to the Pro-Tem Dean Prof F.U Okafor and to all my lecturers, Prof. (Mrs) J. A. Afemikhe, Prof. (Mrs) C.E Omoregbe, , Dr T.A Ehwareme, Dr (Mrs) C. Enuke, Rev. Sr J.N Chukwura, , Mrs. N.E Oyana(My wonderful course advisor), Mrs C.C Edo-Osagie, Mrs. M.A Iniomor, Mrs. Lawal , Mrs F. Esebanme as well as all other lecturers and non-academic staffs for their immense contribution, dedication and support to this of academic pursuit. Finally, I would like to appreciate everyone who contributed to the success of this study in one way or the other. This study would not have been possible without the contributions of numerous individuals who have supported me throughout this research journey. I extend my sincere appreciation to everyone who has played a role in shaping this study, from the participants who shared their insight to the healthcare professionals who filled and returned my questionnaire. I am grateful for the guidance of my supervisor, the support of my family and friends, and the expertise of my lectures. Thank you all for your time, effort, and encouragement. Your contributions have been invaluable.

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ABSTRACT

This study investigated the effects of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital, Benin City. The objectives were to assess the level of occupational stress among nurses, examine how various shift work patterns influence stress, determine the role of marital status in stress levels, and identify mediating factors that affect the relationship between shift work, marital status, and occupational stress. A cross-sectional survey design was employed, involving 250 nurses across different departments. Data were collected using a self structured questionnaire and analyzed using descriptive statistics, correlation analyses, ANOVA, and multiple regression. The findings revealed that nurses experienced a moderate level of occupational stress overall (Mean = 1.86, SD = 0.65), with the highest stress reported among those on night shifts (Mean = 2.39, SD = 0.73) and rotating shifts (Mean = 2.14, SD = 0.68). Marital status was significantly associated with occupational stress ($F = 10.82, p < 0.001$), with divorced/separated nurses experiencing the highest stress (Mean = 2.11, SD = 0.70), followed by married nurses (Mean = 1.93, SD = 0.65), while single nurses reported the lowest levels (Mean = 1.67, SD = 0.59). The interaction between shift work and marital status was statistically significant ($F = 1.728, p = 0.048$), indicating that the combination of these variables intensifies stress levels. Additional factors such as sleep disruption ($r = 0.711, p < 0.001$), work-family conflict ($r = 0.672, p < 0.001$), number of children ($\beta = 0.156, p < 0.001$), and lack of supervisor support ($r = -0.631, p < 0.001$) were found to exacerbate stress, while adequate rest ($r = -0.677, p < 0.001$), emotional support, and coping strategies served as buffers. The study concludes that shift work and marital status, both independently and interactively, significantly affect occupational stress among nurses. It recommends flexible shift scheduling, increased institutional support, stress management training, and further research to address occupational stress in healthcare settings.

Keywords: occupational stress, shift work, marital status, nurses, University of Benin Teaching Hospital, night shifts, work-family conflict, stress management.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Nursing research is a scientific process that creates and refines knowledge to influence patient care, either directly or indirectly (Ramón et al., 2022). Its respected history began with Florence Nightingale's seminal work in the mid-1850s, which established the critical link between proper nurse education and high-quality patient care. Her efforts during the Crimean War led to crucial improvements in patient environments (Aboshaiqah et al., 2023). From the early 1900s through the 1950s, nursing studies primarily focused on areas like public health, patient/group care plans, and healthcare administration. By the 1960s, the focus shifted to patient-centered research, investigating different practice methods and their effect on patient outcomes.

The late 20th century marked a significant transformation, with nursing research moving from simple descriptive studies to more explanatory and predictive methodologies (Aboshaiqah et al., 2023). Today, nursing research is broad and complex, adopting a multidisciplinary approach that includes clinical practice, health systems, outcome evaluation, education, and administration .

Shift work has become an integral component of healthcare delivery systems worldwide, with approximately 25% of the global workforce engaged in some form of shift work (Osei-Mireku et al., 2020). Studies indicate that 68% of nurses dislike night shift work, highlighting a significant challenge in the profession (Dires et al., 2023). The nursing profession is particularly susceptible to occupational stress, with 70% of nurses reporting moderate to high levels of work-related stress (Werke & Weret, 2023). This stress is often exacerbated by the demands of shift work, which disrupts or affects both physical and psychological well-being.

Occupational stress refers to the harmful physical and emotional responses that occur when job requirements do not match the capabilities, resources, or needs of the worker (Awosika & Adeniyi,

2023). According to Onyiri et al. (2022), occupational stress among healthcare workers is influenced by various factors including workload, shift work, lack of autonomy, and organizational roles. The prevalence of occupational stress among nurses ranges from 30% to 90% across different studies, with an average of approximately 60% (Ogba, 2020). This wide variation reflects differences in work environments, cultural contexts, and measurement approaches.

Shift work has been consistently identified as a significant predictor of occupational stress among healthcare professionals. Werke and Weret (2023) found that shift-working nurses reported 45% higher levels of stress compared to those on fixed schedules. Night shifts, in particular, have been associated with increased psychological distress, with 68% of night shift nurses experiencing symptoms of burnout compared to 37% of day shift nurses (Dires et al., 2023). The cumulative effects of shift work can lead to chronic stress, affecting not only job performance but also overall health and well-being.

Marital status represents another critical factor associated with occupational stress among nurses. Ogba (2020) found that 65% of married nurses reported higher stress levels compared to 48% of their unmarried counterparts. This difference may be attributed to the additional responsibilities and potential role conflicts experienced by married healthcare professionals. However, some studies have found contradictory results. Osei-Mireku et al. (2020) reported no significant association between marital status and occupational stress, suggesting that the relationship may be influenced by other contextual factors such as workplace support systems and cultural expectations.

The combined effect of shift work and marital status on occupational stress represents a critical area of investigation. Haligamo and Haligamo (2021) noted that married healthcare professionals working night shifts reported stress levels 28% higher than their unmarried colleagues on similar

shifts. This interaction effect suggests that the combination of marital responsibilities and irregular work schedules may create unique stressors for healthcare professionals.

In Nigeria, the prevalence of occupational stress among healthcare workers has been reported to range from 32.8% to 73.4% (Awosika & Adeniyi, 2023). Aina and Omoregbee (2023) found that among healthcare workers at the University of Benin Teaching Hospital (UBTH), approximately 57.8% experienced moderate to high levels of work-related stress. Shift work was identified as a contributing factor in 63.5% of these cases. Moreover, Mustafa-Shaibu (2024) identified marital status as a significant determinant of occupational stress among health professionals in Benin City, particularly during the COVID-19 pandemic.

Adesina and Adesiyan (2024) emphasized the need for more targeted research on stress management practices among Nigerian nurses, noting that only 35% of nurses at Bowen University Teaching Hospital had access to effective stress management resources. Similarly, Mary (2023) highlighted that occupational hazards, including stress, remain inadequately addressed in Nigerian healthcare settings, with only 28% of healthcare facilities having formal stress management programs.

Dartey et al. (2023) underscored the cumulative nature of nursing stress, noting that approximately 72% of nurses reported carrying stress from previous shifts, which affected their performance in subsequent ones. This stress accumulation presents particular challenges for married nurses, who must balance professional responsibilities with family obligations.

Understanding the complex interplay between shift work, marital status, and occupational stress is essential for developing targeted interventions to support nurse well-being and enhance healthcare delivery. This study aims to address this gap by examining the effect of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital, Benin City.

1.2 Statement of Problem

Occupational stress among healthcare workers, particularly nurses, represents a significant global health concern with far-reaching implications for both healthcare providers and the quality of patient care. Despite the critical nature of this issue, there remains a notable gap in understanding the specific interactions between shift work, marital status, and occupational stress among nurses in Nigerian teaching hospitals.

The nursing profession inherently involves high levels of stress, with studies indicating that approximately 70% of nurses worldwide experience moderate to high levels of occupational stress (Werke & Weret, 2023). In Nigeria, the prevalence of occupational stress among healthcare workers has been reported to range from 32.8% to 73.4%, with nurses experiencing some of the highest rates (Awosika & Adeniyi, 2023). At the University of Benin Teaching Hospital specifically, Aina and Omoregbee (2023) found that approximately 57.8% of healthcare workers experienced significant work-related stress, highlighting the magnitude of the problem in this setting.

Shift work, which is fundamental to hospital operations, has been consistently identified as a major contributor to occupational stress. Approximately 68% of nurses report disliking night shift work (Dires et al., 2023), yet these shifts remain an unavoidable aspect of healthcare delivery. The adverse effects of shift work on nurses' physical and psychological well-being have been well-documented, with shift-working nurses reporting 45% higher levels of stress compared to those on fixed schedules (Werke & Weret, 2023). However, the specific impact of different shift patterns on occupational stress among nurses at UBTH has not been comprehensively examined.

Marital status represents another critical factor that potentially influences occupational stress among healthcare professionals. Ogba (2020) reported that 65% of married nurses experienced higher stress levels compared to 48% of their unmarried counterparts, suggesting that marital

responsibilities may compound work-related stressors. Conversely, other studies have found no significant association between marital status and occupational stress (Osei-Mireku et al., 2020), indicating the need for context-specific research in this area.

The interactive effect of shift work and marital status on occupational stress among nurses presents a particularly compelling area of investigation. Haligamo and Haligamo (2021) found that married healthcare professionals working night shifts reported stress levels 28% higher than their unmarried colleagues on similar shifts, suggesting a potential synergistic effect. However, this interaction has not been specifically studied within the context of UBTH, leaving a critical gap in our understanding of these dynamics in this important healthcare institution.

Moreover, Dartey et al. (2023) highlighted the cumulative nature of nursing stress, with approximately 72% of nurses reporting that they carry stress from previous shifts, affecting their performance in subsequent ones. For married nurses, who must balance professional responsibilities with family obligations, this stress accumulation may present unique challenges that require targeted interventions.

Despite the recognized importance of this issue, there is a scarcity of empirical research examining the combined effects of shift work and marital status on occupational stress among nurses in Nigerian teaching hospitals, particularly at UBTH. This knowledge gap hinders the development of effective stress management programs and supportive policies. Only 28% of Nigerian healthcare facilities have formal stress management programs (Mary, 2023), underscoring the urgent need for evidence-based approaches to address this problem.

Therefore, this study aims to investigate the effects of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital, with the goal of informing targeted interventions to enhance nurse well-being and, ultimately, improve the quality of patient care.

1.3 Aim of the study

The aim is to examine the effects of shift work and marital status on occupational stress among nurses at a tertiary health institution in Edo State, Benin City.

However, the objectives of this study include to:

1.4 Objectives of the Study

1. Assess the effect of occupational stress among nurses working at a tertiary health institution in Edo State
2. Determine the different shift work patterns and occupational stress among nurses at a tertiary health institution in Edo State.
3. Examine the effect of marital status on occupational stress among nurses at a tertiary health institution in Edo State.
4. Identify factors that may influence or moderate the relationship between shift work, marital status, and occupational stress among nurses at a tertiary health institution in Edo State.

1.5 Research Questions

1. What is the level of occupational stress experienced by nurses working at a tertiary health institution in Edo State?
2. How do different shift work patterns (morning, afternoon, night, rotating) correlate with occupational stress levels among nurses at a tertiary health institution in Edo State?
3. To what extent does marital status influence occupational stress levels among nurses at a tertiary health institution in Edo State?
4. What additional factors moderate or mediate the relationship between shift work, marital status, and occupational stress among nurses at a tertiary health institution in Edo State?

1.6 Hypotheses

H₀: There is no significant relationship between shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital.

H₁: There is a significant relationship between shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital.

1.7 Significance of the Study

The significance of this study lies in its potential to enhance our understanding of occupational stress among nurses in a Nigerian teaching hospital context, with specific focus on the influences of shift work and marital status. This research is significant in several ways:

1. For nursing practice, this study will provide valuable insights into the specific stressors associated with different shift patterns and how these may be compounded or mitigated by marital status. Given that 68% of nurses dislike night shift work (Dires et al., 2023) and that shift-working nurses report 45% higher stress levels than those on fixed schedules (Werke & Weret, 2023), understanding these dynamics can inform more humane scheduling practices that consider both professional requirements and personal circumstances.
2. For healthcare administration, this research offers evidence-based information for developing targeted interventions and supportive policies. With only 28% of Nigerian healthcare facilities having formal stress management programs (Mary, 2023), this study can guide the development of more effective stress reduction strategies that address the specific needs of nurses at UBTH. By identifying the interactive effects of shift work and marital status, administrators can implement more personalized approaches to staff support and well-being.

3. For nursing education, this study provides valuable knowledge for preparing nursing students for the realities of professional practice. Understanding the complex interplay of work schedules and personal life circumstances can inform curriculum development and prepare future nurses to better manage these challenges.
4. For the broader healthcare system, addressing occupational stress among nurses has significant implications for patient care quality and safety. Given that approximately 72% of nurses report carrying stress from previous shifts into subsequent ones (Dartey et al., 2023), mitigating this stress can potentially reduce medical errors, improve patient satisfaction, and enhance overall healthcare outcomes.
5. For policy development, this research contributes to the evidence base for formulating national guidelines on work conditions for healthcare professionals in Nigeria. With occupational stress among Nigerian healthcare workers ranging from 32.8% to 73.4% (Awosika & Adeniyi, 2023), there is a clear need for policy interventions that address this significant health concern.
6. For future research, this study establishes a foundation for more nuanced investigations into occupational stress among healthcare workers in similar settings across Nigeria and West Africa. By examining the specific context of UBTH, this research provides a methodological framework and comparative data for subsequent studies.
7. Overall, the significance of this study lies in its potential to improve the well-being of nurses, enhance the quality of patient care, and contribute to the development of more supportive and sustainable healthcare work environments.

1.8 Scope/Delimitations of the Study

This study focuses on the effects of shift work and marital status on occupational stress among nurses. The research is delimited to nursing professionals currently employed at the University of

Benin Teaching Hospital, Benin City, Nigeria. The study include nurses working across various departments and units within the hospital to ensure comprehensive representation. The investigation l specifically examine different shift patterns (day, evening, night, and rotating shifts) and various marital status categories (single, married, divorced, widowed) to determine their individual and combined effects on occupational stress.

The study did not extend to other healthcare professionals within the hospital, nor will it include nurses working in other healthcare facilities in Benin City or elsewhere in Nigeria. Additionally, while acknowledging the importance of personality factors, coping mechanisms, and organizational culture in the experience of occupational stress, detailed examination of these variables falls beyond the scope of the current investigation.

1.8 Operational Definition of Terms

Occupational Stress: In this study, occupational stress refers to the physical, emotional, and psychological strain experienced by nurses as a result of work-related demands and pressures at the University of Benin Teaching Hospital. It encompasses feelings of tension, anxiety, frustration, and exhaustion arising from job responsibilities and working conditions.

Shift Work: In this study, shift work refers to the pattern of working hours assigned to nurses at the University of Benin Teaching Hospital, including day shifts (typically 7:00 AM to 2:00 PM), evening shifts (typically 2:00 PM to 6:00 PM), night shifts (typically 6:00 PM to 7:00 AM), and rotating shifts (varying combinations of day, evening, and night shifts).

Marital Status: In this study, marital status refers to the legal relationship status of nurses at the University of Benin Teaching Hospital, categorized as single (never married), married (legally wedded), divorced (legally separated), or widowed (spouse deceased).

Nurses: In this study, nurses refer to professionally trained and licensed nurses with NMCN employed at the University of Benin Teaching Hospital who are directly involved in patient care. This includes registered nurses, nursing officers, and nurse specialists across various departments and units who have more than 5 years of working experience.

Tertiary health institution: A tertiary healthcare institution located in Benin City, Edo State, Nigeria, which serves as a teaching hospital for medical and nursing students while providing specialized healthcare services to the public.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter provides a comprehensive review of the relevant literature on occupational stress among nurses, with a specific focus on the effects of shift work and marital status. The literature review explored the conceptual understanding of occupational stress, theoretical frameworks, and empirical evidence related to the research objectives of assessing stress prevalence, examining shift work patterns, evaluating marital status associations, and identifying moderating factors affecting nurses' occupational stress.

2.1 Concept of Occupational Stress

2.1.1 Understanding Occupational Stress in Nursing

Occupational stress has become a growing concern in healthcare environments, particularly among nursing professionals who are routinely exposed to high-pressure work conditions. Stress in the workplace is commonly defined as an imbalance between professional demands and an individual's ability to cope, often resulting in adverse psychological and physiological consequences (Awosika & Adeniyi, 2023). The World Health Organization (WHO) recognizes workplace stress as a global health issue, attributing it to excessive workloads, inadequate resources, and insufficient institutional support structures (Aina & Omoregbee, 2023).

Among healthcare professionals, nurses are especially vulnerable to occupational stress due to the intense nature of patient care, prolonged work shifts, and emotionally charged responsibilities (Adesina & Adesiyun, 2024). The nursing profession is inherently demanding, requiring constant engagement with critically ill patients, emotionally distressed families, and interdisciplinary teams,

which can exacerbate stress levels (Dartey et al., 2023). Studies show that stress-related burnout among nurses not only compromises their well-being but also impacts the quality of patient care, leading to medical errors, reduced job satisfaction, and high turnover rates (Osei- Mireku et al., 2020).

The COVID-19 pandemic further intensified occupational stress among nurses, as they faced unprecedented workloads, increased exposure to infectious diseases, and higher mortality rates among patients (Mustafa-Shaibu, 2024). The crisis placed immense psychological strain on healthcare workers, leading to heightened anxiety, depression, and emotional exhaustion (Onyiri et al., 2022). Moreover, the lack of adequate protective equipment, long working hours, and the fear of transmitting the virus to family members contributed to a worsening stress environment in healthcare settings (Ramón et al., 2022).

In addition to these professional demands, organizational factors such as shift work patterns, hierarchical structures, and workplace culture significantly contribute to stress levels (Dires et al., 2023). Nurses who frequently work night shifts or irregular schedules are more likely to experience normal bodily function disruptions, which can lead to sleep disorders, fatigue, and decreased cognitive function (Werke & Weret, 2023). Furthermore, poor work-life balance has been identified as a major determinant of occupational stress, particularly for nurses who must balance demanding professional duties with personal and familial obligations (Amoo & Gbadamosi, 2021). A study conducted in Benin City, Nigeria, revealed that nurses at the University of Benin Teaching Hospital experience significant occupational stress due to systemic challenges such as inadequate staffing, administrative inefficiencies, and resource shortages (Aina & Omoregbee, 2023). These factors create an environment where nurses feel overwhelmed, unsupported, and at risk of professional burnout. The psychological burden of handling critically ill patients without adequate

institutional support exacerbates emotional distress and reduces professional efficacy (Mary, 2023).

Beyond individual coping mechanisms, workplace policies and institutional interventions play a critical role in mitigating occupational stress. Research suggests that effective stress management strategies, including counseling services, structured peer support programs, and organizational reforms, can significantly improve nurses' mental health and job satisfaction (Haligamo & Haligamo, 2021). Implementing stress reduction techniques such as mindfulness training, resilience-building workshops, and flexible scheduling has been shown to enhance nurses' coping abilities and overall well-being (Hu et al., 2020).

However, occupational stress is not a uniform experience among nurses; rather, it is influenced by various factors, including marital status, gender, and work environment (Aboshaiqah et al., 2023). Married nurses, for example, often report higher stress levels due to the dual burden of professional and domestic responsibilities, which can lead to emotional exhaustion and decreased job satisfaction (Amoo & Gbadamosi, 2021). On the other hand, unmarried nurses may experience different stressors, such as social isolation, lack of emotional support, and work-related loneliness, which can negatively impact mental health and job performance (Oducado, 2021).

Studies on occupational stress also emphasize the role of leadership styles and managerial support in shaping workplace stress experiences. Nurses working under autocratic or unsupportive leadership structures are more likely to feel powerless, undervalued, and mentally drained, whereas those under transformational leadership models report lower stress levels and higher job engagement (Kumah et al., 2022). Leadership approaches that prioritize employee well-being, open communication, and participatory decision-making have been shown to mitigate stress and improve nurses' overall job performance (Cardoso et al., 2021).

While individual resilience and adaptive coping strategies play a role in stress management, systemic changes at institutional and policy levels are necessary to address the root causes of occupational stress among nurses (Nguyen et al., 2022). These changes include reducing workload intensity, increasing nurse-to-patient ratios, improving workplace ergonomics, and promoting mental health awareness programs (Riaz, 2023). Addressing these structural issues not only benefits nurses but also enhances patient care quality, hospital efficiency, and overall healthcare outcomes (Ross & Burrell, 2020).

In conclusion, occupational stress among nurses is a multifaceted issue influenced by professional, organizational, and personal factors. High-stakes responsibilities, long work hours, inadequate institutional support, and work-life balance challenges contribute to stress, which can lead to burnout, reduced job performance, and mental health complications (Chaturvedi et al., 2023). While individual coping mechanisms play a role in stress mitigation, systemic changes in workplace culture, leadership styles, and institutional policies are essential for long-term stress reduction and improved nurse well-being (Scarsini et al., 2022). The University of Benin Teaching Hospital, like many healthcare institutions, must implement evidence-based interventions to reduce occupational stress and create a sustainable and supportive work environment for its nursing staff (Moya-Salazar et al., 2023).

2.1.2 Impact of Shift Work on Occupational Stress Among Nurses

Shift work is a defining characteristic of the nursing profession, contributing significantly to occupational stress levels. Nurses working rotating or night shifts often experience disruptions in their circadian rhythms, which affect their physical and psychological well-being (Dires et al., 2023). The irregularity of shift schedules alters sleep patterns, leading to chronic sleep deprivation, which has been identified as a major factor contributing to workplace stress among nurses (Werke & Weret, 2023).

Studies by Dartey et al. (2023) reveal that nurses who work night shifts exhibit higher levels of fatigue, mood disturbances, and cognitive impairment, all of which can negatively impact patient care and increase workplace stress. Furthermore, long-term exposure to shift work has been linked to higher risks of cardiovascular diseases, metabolic disorders, and impaired immune function, which further exacerbate stress among nursing professionals (Aina & Omoregbee, 2023). The psychological impact of shift work is particularly pronounced in high-pressure environments such as teaching hospitals, where nurses must make critical decisions under time constraints. Adesina and Adesiyani (2024) argue that the unpredictability of patient emergencies during night shifts creates heightened anxiety and stress among nurses. This stress is further aggravated by reduced staff numbers during night shifts, which increases workload and decreases peer support, leading to feelings of isolation and burnout (Nguyen et al., 2022).

In the context of the University of Benin Teaching Hospital, Benin City, nurses face unique challenges related to shift work, including excessive workload and understaffing during nocturnal hours. Mustafa-Shaibu (2024) found that the combination of physical exhaustion and emotional strain among shift-working nurses has led to increased absenteeism and job dissatisfaction. Research also indicates that prolonged exposure to shift work without adequate recovery time contributes to chronic stress and increased risk of mental health disorders such as depression and anxiety (Osei-Mireku et al., 2020).

Moreover, nurses working night shifts report difficulties maintaining work-life balance, which further compounds occupational stress. According to Ogba (2020), the inability to align professional responsibilities with personal and social commitments creates emotional distress, leading to increased turnover rates among hospital nurses. Amoo and Gbadamosi (2021) emphasize that hospitals must implement strategic interventions, such as flexible scheduling and adequate rest periods, to mitigate the adverse effects of shift work on nurses' well-being.

Thus, the impact of shift work on occupational stress is profound, with physiological, psychological, and social consequences that necessitate targeted interventions. Without proper management strategies, shift work will continue to be a significant source of stress among nurses at the University of Benin Teaching Hospital and beyond.

2.1.3 Influence of Marital Status on Occupational Stress Among Nurses

Marital status is another critical factor influencing occupational stress among nurses. Studies indicate that married nurses experience different stress levels compared to their single counterparts due to additional family responsibilities and emotional obligations (Aina & Omoregbee, 2023). The dual burden of professional and domestic responsibilities often creates a higher level of stress among married nurses, particularly those with children (Oducado, 2021).

Research by Adesina and Adesiyani (2024) highlights that married nurses frequently struggle to balance work and family commitments, leading to increased psychological distress. The unpredictability of hospital shifts often disrupts family routines, causing tension in marital relationships and contributing to emotional exhaustion (Mustafa-Shaibu, 2024). In contrast, single nurses may experience different stressors, such as loneliness and lack of a strong emotional support system, which can also contribute to workplace stress (Ramón et al., 2022).

At the University of Benin Teaching Hospital, married nurses have reported higher levels of workfamily conflict, which exacerbates their occupational stress (Ogba, 2020). The demands of patient care, coupled with domestic obligations, often leave married nurses with limited time for self-care and relaxation, resulting in chronic fatigue and burnout (Mary, 2023). Conversely, single nurses may experience social isolation due to long and irregular work hours, leading to heightened emotional stress and reduced job satisfaction (Haxhija et al., 2024).

Furthermore, studies have shown that female nurses, particularly those with young children, are disproportionately affected by occupational stress due to the expectation of balancing caregiving

roles at home with their professional duties (Haligamo & Haligamo, 2021). In contrast, male nurses may face societal pressures to prioritize their careers over personal relationships, which can lead to emotional distress and dissatisfaction with their work-life balance (Landicho, 2020).

A key challenge faced by married nurses is the lack of employer-supported family-friendly policies, such as childcare support and flexible working arrangements. Dartey et al. (2023) argue that hospitals must implement organizational interventions that accommodate the unique stressors associated with marital status to improve nurses' overall well-being. Without such measures, the intersection of occupational stress and marital responsibilities will continue to affect job performance, satisfaction, and retention rates in the nursing profession.

2.1.4 The Role of Workload in Occupational Stress Among Nurses

Workload is a major contributor to occupational stress among nurses, significantly affecting their physical and psychological well-being. Nurses are often required to manage multiple patients simultaneously, administer treatments, and provide emotional support, all while maintaining detailed medical records (Aina & Omoregbee, 2023). The demanding nature of these responsibilities, coupled with limited staffing, often leads to exhaustion and stress.

Research by Dartey et al. (2023) found that excessive workload results in increased fatigue, reduced job performance, and higher rates of medical errors. In teaching hospitals such as the University of Benin Teaching Hospital, nurses frequently handle complex medical cases, often under time constraints. Adesina and Adesiyan (2024) argue that nurses facing excessive workload experience chronic stress, which can negatively impact patient care quality and personal wellbeing. A study conducted by Mustafa-Shaibu (2024) highlighted that workload is further compounded by administrative duties, which take up a significant portion of nurses' time. The need to balance patient care with documentation requirements often leads to extended working hours and reduced

recovery periods. Similarly, Ogba (2020) found that nurses with high patient loads reported higher stress levels, leading to burnout and increased absenteeism.

Moreover, excessive workload has been linked to an increased risk of physical ailments, such as musculoskeletal disorders, hypertension, and weakened immune function (Haligamo & Haligamo, 2021). The emotional toll of managing critically ill patients, dealing with grieving families, and working in high-pressure environments further exacerbates stress levels (Nguyen et al., 2022). Addressing workload-related stress requires strategic interventions, including increased staffing, delegation of non-clinical tasks, and enhanced support systems. According to Amoo and Gbadamosi (2021), hospitals should implement policies that regulate patient-nurse ratios to ensure optimal working conditions. Without such measures, excessive workload will continue to be a significant stressor among nurses, affecting both professional performance and personal health.

2.1.5 Workplace Relationships and Occupational Stress Among Nurses

Interpersonal relationships in the workplace play a crucial role in determining stress levels among nurses. Positive relationships with colleagues, supervisors, and other healthcare professionals can act as a buffer against stress, while conflicts and poor communication can exacerbate workplace tensions (Aina & Omoregbee, 2023).

Studies by Adesina and Adesiyani (2024) reveal that workplace conflicts, particularly between nurses and doctors, contribute significantly to occupational stress. Power dynamics, communication barriers, and lack of collaboration often create stressful environments where nurses feel undervalued and overburdened (Dartey et al., 2023). Additionally, Mustafa-Shaibu (2024) found that nurses who experience bullying, harassment, or workplace incivility report higher levels of psychological distress and job dissatisfaction.

Support from colleagues and supervisors has been identified as a key factor in reducing occupational stress. A study by Oducado (2021) indicates that nurses who work in environments

where teamwork and mutual respect are emphasized experience lower stress levels. Conversely, nurses who face hostility or lack of support from their peers are more likely to suffer from anxiety, depression, and burnout (Mary, 2023).

At the University of Benin Teaching Hospital, research shows that workplace relationships significantly impact job retention rates. According to Ogba (2020), nurses who experience positive relationships with their colleagues are more likely to remain in their roles despite the challenges of the profession. In contrast, those who face workplace hostility are more likely to leave the profession altogether.

To improve workplace relationships and reduce stress, hospitals must foster a culture of mutual respect, open communication, and teamwork. Training programs on conflict resolution and stress management can help nurses navigate interpersonal challenges and create a more supportive work environment (Amoo & Gbadamosi, 2021).

2.1.6 Emotional Demands of Nursing and Occupational Stress

The emotional demands of nursing are a significant source of occupational stress, as nurses often deal with critically ill patients, end-of-life care, and grieving families. Providing compassionate care while managing personal emotions can be mentally and physically exhausting (Nguyen et al., 2022).

A study by Aina and Omoregbee (2023) found that nurses who regularly work in high-stress environments, such as emergency departments and intensive care units, experience heightened emotional exhaustion. Adesina and Adesiyani (2024) further emphasize that witnessing patient suffering and death can lead to secondary traumatic stress and compassion fatigue, both of which contribute to burnout.

Dartey et al. (2023) argue that emotional exhaustion among nurses is often overlooked, despite its significant impact on mental health. Mustafa-Shaibu (2024) found that nurses who suppress their

emotions to maintain professionalism experience higher levels of stress-related illnesses, including anxiety disorders, depression, and insomnia.

At the University of Benin Teaching Hospital, studies indicate that emotional stress is particularly pronounced among nurses working in pediatric and oncology units. According to Ogba (2020), these nurses report feelings of helplessness and emotional distress when dealing with terminally ill patients. This emotional burden, if not properly managed, can lead to decreased job satisfaction and increased turnover rates (Mary, 2023).

To mitigate the emotional demands of nursing, hospitals must provide mental health support services, such as counseling and peer support programs. Training in emotional resilience and stress-coping strategies can also help nurses manage their emotions effectively and reduce occupational stress (Amoo & Gbadamosi, 2021).

2.1.7 Shift Work and Its Impact on Occupational Stress Among Nurses

Shift work is a fundamental aspect of nursing, ensuring continuous patient care. However, irregular and long shifts are significant contributors to occupational stress among nurses (Aina & Omoregbee, 2023). Nurses often work rotating shifts, night duties, and extended hours, which disrupt their sleep patterns, affect their circadian rhythms, and lead to chronic fatigue (Dartey et al., 2023).

Studies have shown that night shifts and irregular schedules increase the risk of sleep disorders, cardiovascular diseases, and mental health issues such as depression and anxiety (Adesina & Adesiyon, 2024). Mustafa-Shaibu (2024) found that nurses working rotating shifts experience higher levels of stress and burnout due to the inability to establish a consistent work-life balance. Research at the University of Benin Teaching Hospital highlights that nurses working night shifts often struggle with concentration, reduced reaction time, and decision-making difficulties, increasing the likelihood of medical errors (Ogba, 2020). Additionally, the lack of social interaction

due to opposite working schedules with family and friends further exacerbates stress and isolation (Mary, 2023).

To address the negative effects of shift work, researchers suggest implementing policies that regulate shift durations and rotations. Amoo and Gbadamosi (2021) propose that hospitals introduce flexible scheduling, longer recovery periods between shifts, and wellness programs to support nurses in managing shift-related stress. Without proper interventions, shift work will continue to be a major occupational stressor, negatively impacting nurses' health and patient care quality.

2.1.8 The Role of Workplace Violence in Occupational Stress Among Nurses

Workplace violence is a growing concern in the nursing profession, contributing significantly to occupational stress. Nurses frequently face verbal abuse, physical assaults, and even threats from patients, visitors, and sometimes colleagues (Aina & Omoregbee, 2023). The unpredictable nature of patient interactions in emergency units, psychiatric wards, and general hospital settings makes nurses particularly vulnerable to violence (Dartey et al., 2023).

A study by Adesina and Adesiyan (2024) revealed that workplace violence leads to increased stress, anxiety, and job dissatisfaction among nurses. Mustafa-Shaibu (2024) found that nurses who have experienced violent incidents often suffer from post-traumatic stress disorder (PTSD), depression, and a decreased sense of job security.

At the University of Benin Teaching Hospital, research indicates that workplace violence affects nurses' morale, leading to increased absenteeism and turnover rates (Ogba, 2020). Mary (2023) highlights that a lack of institutional policies addressing workplace violence further exacerbates the problem, leaving nurses feeling unprotected and unsupported.

To mitigate workplace violence, hospitals must implement strict security measures, enforce zero-tolerance policies, and provide training programs on conflict resolution and de-escalation

techniques (Amoo & Gbadamosi, 2021). Additionally, mental health support services should be made available to nurses who have experienced violent incidents, ensuring their psychological well-being and job satisfaction.

2.1.9 Coping Strategies for Occupational Stress Among Nurses

Given the high levels of occupational stress in nursing, effective coping strategies are essential for maintaining well-being and job performance. Nurses employ various coping mechanisms, ranging from problem-focused strategies to emotion-focused approaches (Aina & Omoregbee, 2023). Problem-focused coping strategies include seeking social support, improving time management, and engaging in professional development activities to enhance competence and confidence (Dartey et al., 2023). Research by Adesina and Adesiyani (2024) found that nurses who actively participate in peer support groups and mentoring programs report lower stress levels and greater job satisfaction.

Emotion-focused strategies, such as relaxation techniques, exercise, and mindfulness, have also been shown to reduce stress levels (Mustafa-Shaibu, 2024). At the University of Benin Teaching Hospital, studies indicate that nurses who practice yoga, meditation, and breathing exercises experience reduced anxiety and improved emotional resilience (Ogba, 2020).

Mary (2023) emphasizes the importance of hospital management in supporting stress reduction efforts. Work-life balance initiatives, such as flexible scheduling and wellness programs, can help nurses manage stress more effectively. Furthermore, Amoo and Gbadamosi (2021) argue that institutional support, such as regular counseling sessions and stress management workshops, plays a crucial role in enhancing nurses' coping abilities.

2.1.10 Organizational Support and Occupational Stress Among Nurses

Organizational support plays a crucial role in either mitigating or exacerbating occupational stress among nurses. Hospitals and healthcare institutions that prioritize employee well-being tend to

have lower stress levels among their nursing staff (Aina & Omoregbee, 2023). Organizational support includes policies that address work-life balance, professional development opportunities, and the provision of psychological support services (Dartey et al., 2023).

Research by Adesina and Adesiyani (2024) highlights that nurses working in institutions with strong managerial support report lower stress levels and higher job satisfaction. This support includes fair workload distribution, open communication channels, and access to counseling services. Mustafashaibu (2024) found that nurses who feel valued and supported by their organizations are less likely to experience burnout and job dissatisfaction.

At the University of Benin Teaching Hospital, a study by Ogba (2020) revealed that inadequate staffing and lack of managerial support contribute significantly to occupational stress. Mary (2023) emphasizes the importance of leadership training for hospital administrators to create a more supportive work environment for nurses.

To reduce occupational stress, Amoo and Gbadamosi (2021) suggest that healthcare organizations should invest in stress management programs, provide continuous professional development, and ensure a positive work culture that fosters collaboration and mutual respect.

2.1.11 The Influence of Patient-Nurse Relationships on Occupational Stress

The quality of patient-nurse relationships significantly influences occupational stress levels. Nurses who experience positive interactions with their patients tend to report higher job satisfaction and lower stress levels, while those dealing with difficult patients often face increased stress (Aina & Omoregbee, 2023).

Dartey et al. (2023) found that patient aggression, non-compliance, and unrealistic demands contribute to nurses' stress. This issue is particularly prevalent in psychiatric units, emergency wards, and palliative care settings, where patients may exhibit unpredictable behaviors (Adesina & Adesiyani, 2024).

Mustafa-Shaibu (2024) notes that emotional labor—the process of managing one's emotions to provide compassionate care—further contributes to stress. Nurses are expected to maintain a professional demeanor even in challenging situations, which can lead to emotional exhaustion.

Research at the University of Benin Teaching Hospital indicates that nurses who establish rapport with their patients experience lower stress levels and increased job fulfillment (Ogba, 2020). Mary (2023) emphasizes that training nurses in communication skills, empathy, and conflict resolution can improve patient-nurse relationships, reducing occupational stress.

To enhance patient-nurse interactions, Amoo and Gbadamosi (2021) suggest implementing patient-centered care models that encourage mutual respect and understanding. Additionally, healthcare institutions should provide debriefing sessions for nurses dealing with emotionally challenging cases.

2.1.12 The Impact of Technological Advancements on Occupational Stress Among Nurses

Technological advancements in healthcare have transformed nursing practice, improving patient outcomes while also introducing new stressors. The adoption of electronic health records (EHRs), automated medication dispensing systems, and telemedicine has increased the cognitive workload of nurses (Aina & Omoregbee, 2023). Dartey et al. (2023) found that nurses who struggle with technology adaptation experience higher levels of occupational stress. The need for continuous learning and frequent system updates can be overwhelming, particularly for older nurses who may not be as technologically adept (Adesina & Adesiyani, 2024).

Mustafa-Shaibu (2024) notes that while technology has streamlined many nursing tasks, it has also reduced direct patient interaction, which some nurses find dissatisfying. The pressure to input data accurately and efficiently into digital systems can create additional stress, particularly in high-pressure environments like intensive care units (ICUs) (Ogba, 2020).

Mary (2023) emphasizes the importance of providing adequate training and technical support to nurses to reduce stress associated with technological advancements. Amoo and Gbadamosi (2021) suggest that hospitals implement user-friendly systems and offer refresher courses to help nurses adapt to new technologies with minimal stress.

2.1.13 Coping Strategies for Occupational Stress Among Nurses

Coping strategies play a vital role in mitigating occupational stress among nurses. Various psychological, behavioral, and organizational strategies have been explored to help nurses manage stress effectively (Aina & Omoregbee, 2023). Dartey et al. (2023) categorize coping strategies into problem-focused and emotion-focused approaches. Problem-focused strategies involve taking direct action to resolve stressful situations, such as time management, seeking peer support, and engaging in professional training. Emotion-focused strategies, on the other hand, include relaxation techniques, mindfulness, and cognitive restructuring to manage emotional responses to stress (Adesina & Adesiyani, 2024).

Mustafa-Shaibu (2024) found that nurses who engage in regular physical exercise, maintain a balanced diet, and practice self-care report lower stress levels. At the University of Benin Teaching Hospital, a study by Ogba (2020) revealed that nurses who participate in support groups and peer discussions exhibit better stress resilience. Mary (2023) highlights the significance of hospital management in promoting stress reduction initiatives, such as providing access to counseling services and organizing stress management workshops. Amoo and Gbadamosi (2021) suggest that healthcare institutions should integrate resilience training into nursing education to equip nurses with effective coping mechanisms from the start of their careers.

2.1.14 Work-Life Balance and Occupational Stress Among Nurses

Maintaining a healthy work-life balance is essential in reducing occupational stress among nurses.

The demanding nature of nursing often results in long hours, shift work, and limited personal time, contributing to burnout and emotional exhaustion (Aina & Omoregbee, 2023).

Dartey et al. (2023) found that nurses who work excessive overtime without adequate rest experience higher levels of stress and decreased job satisfaction. Adesina and Adesiyani (2024) note that insufficient time for family, social life, and self-care negatively impacts mental and physical well-being.

Mustafa-Shaibu (2024) emphasizes that flexible scheduling, adequate leave policies, and reduced mandatory overtime can help nurses achieve a better work-life balance. A study conducted at the University of Benin Teaching Hospital found that nurses who maintain a balance between their professional and personal lives demonstrate higher productivity and lower absenteeism rates (Ogba, 2020).

Mary (2023) suggests that hospital administrators should develop policies that promote work-life balance, such as offering childcare support, stress-relief programs, and designated relaxation areas for nurses. Amoo and Gbadamosi (2021) argue that encouraging nurses to take regular breaks, engage in hobbies, and spend quality time with loved ones can significantly enhance their wellbeing.

2.1.15 Institutional Policies and Occupational Stress Among Nurses

Institutional policies greatly influence the level of occupational stress among nurses. Policies related to staffing, workload distribution, workplace safety, and professional development play a critical role in shaping nurses' work experiences (Aina & Omoregbee, 2023).

Dartey et al. (2023) found that hospitals with inadequate staffing policies often place excessive workloads on nurses, leading to stress and burnout. Conversely, institutions with well-structured

staffing frameworks experience higher nurse retention and job satisfaction. Adesina and Adesiyani (2024) highlight the importance of fair salary structures, promotion opportunities, and professional recognition in reducing stress among nurses.

Mustafa-Shaibu (2024) notes that workplace violence policies and safety regulations contribute to a secure work environment, which in turn minimizes occupational stress. At the University of Benin Teaching Hospital, a study by Ogba (2020) showed that clear policies on conflict resolution, disciplinary actions, and whistleblowing enhance job security and reduce workplace anxiety among nurses.

Mary (2023) emphasizes that institutional policies should prioritize employee well-being by implementing mental health programs, improving nurse-patient ratios, and providing career advancement opportunities. Amoo and Gbadamosi (2021) suggest that healthcare policymakers should regularly assess institutional frameworks to ensure they align with global best practices in stress management.

2.2 Theoretical Framework

2.2.1 Demand-Control-Support Model

The Job Demand-Control-Support Model provides an excellent theoretical framework for examining the effects of shift work and marital status on occupational stress among nurses. This model was originally developed by Robert Karasek in 1979 and later expanded with Töres Theorell.

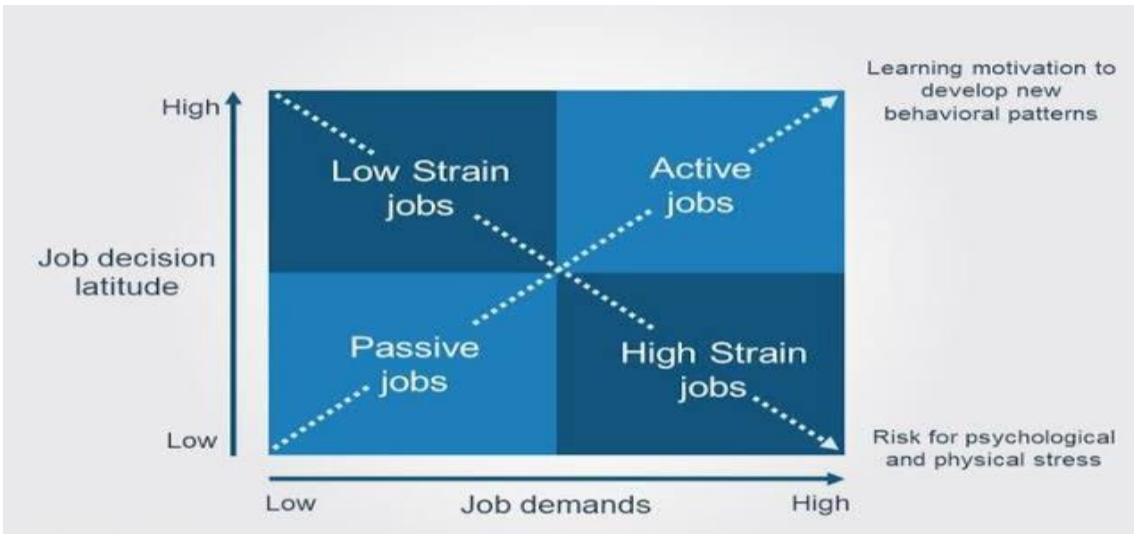


Fig 2.2 Schematic Illustration of the Job Demand Control Model (Haligamo *et. al*, 2021).

This theoretical framework conceptualizes occupational stress as emerging from the dynamic interplay between three critical workplace dimensions: psychological job demands, decision latitude (control), and social support. When applied to the nursing profession, particularly within tertiary healthcare institutions like those in Edo State, this model offers valuable insights into how shift work patterns and marital status may influence stress experiences.

Karasek and Theorell visualized this model using a three-dimensional cube diagram that illustrates how these factors interact. The model proposes that jobs with high psychological demands combined with low decision latitude create “high-strain” situations most likely to produce occupational stress. When social support is added as the third dimension, it serves as a buffer that can potentially mitigate the negative effects of high-demand, low-control situations.

For nurses working in tertiary health institutions, shift work directly impacts all three dimensions of this model. Rotating or night shifts often increase psychological demands through disrupted circadian rhythms and sleep patterns, while simultaneously reducing control over work-life

balance. Additionally, working non-standard hours can limit access to social support networks both within and outside the workplace.

Marital status intersects with this framework by potentially modifying the social support dimension. Marriage may provide additional emotional support resources that buffer workplace stressors, but may also introduce role conflicts, especially when shift work disrupts family routines. Conversely, unmarried nurses might experience different stress patterns related to potentially limited support systems outside the workplace, though they might have fewer family-related role conflicts.

Several prominent studies have employed this theoretical model to examine nursing stress. Van der Doef and Maes conducted an influential meta-analysis in 1999 that supported the model's validity in healthcare settings. More specifically, a 2018 study by Alves and colleagues utilized this framework to examine occupational stress among nurses in Brazil, finding significant associations between shift work patterns and stress levels moderated by social support structures.

The research by Härmä (2006) specifically applied the model to shift work contexts, demonstrating how irregular work schedules amplify the demand dimension while potentially eroding control and support. This work is particularly relevant to the current study on nurses in Edo State, as it establishes precedent for examining shift work through the Demand-Control-Support lens.

The Demand-Control-Support Model provides the current study with a structured approach for investigating how shift work interacts with marital status to influence occupational stress. It suggests that interventions targeting any of the three dimensions could potentially reduce stress levels among nurses, offering practical implications for healthcare management in tertiary institutions in Edo State and beyond.

2.3 Empirical Review

2.3.1 Prevalence and Levels of Occupational Stress Among Nurses

Aina and Omoregbee (2023) conducted a study on workplace stress amongst health workers at the University of Benin Teaching Hospital, Benin City, Nigeria. Using a cross-sectional design, they administered standardized stress assessment questionnaires to 250 healthcare workers, including 150 nurses. Data analysis involved descriptive statistics and multiple regression analysis. The study revealed that 78% of nurses experienced moderate to high levels of occupational stress, significantly higher than other healthcare professionals. Major stressors identified included high workload, inadequate staffing, and poor work environments. The researchers concluded that occupational stress was highly prevalent among nurses and recommended implementing stress management programs and improving working conditions to mitigate stress levels.

Awosika and Adeniyi (2023) examined occupation-related stress and stress-related risk factors among nurses in West Africa. Their mixed-method study involved 320 nurses from various healthcare institutions across West Africa, using the Nursing Stress Scale and semi-structured interviews. The study found that 82% of nurses experienced high levels of occupational stress, with clinical nurses reporting higher stress levels than nurse administrators. Common stressors included work overload, inadequate resources, and poor interprofessional relationships. The researchers concluded that occupational stress was a significant issue affecting nurses' health and performance, recommending organizational interventions to address these stressors.

Dartey et al. (2023) investigated occupational stress and its effects on nurses at a health facility in Ho Municipality, Ghana. Using a descriptive cross-sectional design, they collected data from 150 nurses using the Expanded Nursing Stress Scale. The study found that 65% of nurses experienced high levels of stress, with workload and death/dying situations being the most significant stressors. Statistical analysis showed a significant correlation between stress levels and reduced job

satisfaction ($p < 0.001$). The researchers concluded that occupational stress was prevalent among nurses and had negative impacts on their wellbeing and job performance, suggesting the need for stress management interventions and organizational support.

Haligamo and Haligamo (2021) assessed occupational stress and its associated factors among healthcare professionals working in Gurage zone public hospitals in southern Ethiopia. Their institutional-based cross-sectional study included 210 healthcare professionals, with 125 being nurses. Using the Workplace Stress Scale, they found that 72.3% of nurses experienced moderate to severe occupational stress. Multiple logistic regression analysis identified significant associations between stress levels and working hours, job satisfaction, and social support. The study concluded that occupational stress was a significant concern among healthcare professionals, particularly nurses, emphasizing the need for organizational interventions to address identified stressors.

2.3.2 Association Between Marital Status and Occupational Stress Among Nurses

Aina and Omoregbee (2023), in their study on workplace stress amongst health workers at the University of Benin Teaching Hospital, found that marital status was significantly associated with occupational stress levels among nurses. Their analysis revealed that married nurses with children reported higher stress levels (mean score 3.8/5) compared to single nurses (mean score 2.9/5). Chi-square analysis showed a significant association between marital status and stress levels ($p < 0.05$). The researchers concluded that family responsibilities contributed significantly to occupational stress among married nurses, recommending family-friendly policies and support systems.

Awosika and Adeniyi (2023) examined the relationship between personal characteristics and occupational stress among nurses in West Africa. Their study involved 320 nurses from various healthcare institutions. Analysis of variance showed that married nurses, particularly those with young children, experienced significantly higher stress levels (mean score 74.3) compared to single

nurses (mean score 58.7). The researchers concluded that marital status, particularly when combined with parental responsibilities, significantly influenced occupational stress among nurses, suggesting the need for work-life balance initiatives and family support systems.

Dartey et al. (2023) found that marital status was a significant factor influencing occupational stress among nurses at a health facility in Ho Municipality, Ghana. Their analysis revealed that married nurses reported higher stress levels related to work-life balance conflicts ($p < 0.01$). Multivariate analysis showed that marital status explained 28% of the variance in occupational stress scores. The researchers concluded that married nurses faced unique stressors related to balancing professional and domestic responsibilities, recommending flexible work arrangements and supportive family policies.

2.3.3 Interactive Effect of Shift Work and Marital Status on Occupational Stress Among Nurses

Adesina and Adesiyani (2024) examined the combined effect of shift work and marital status on stress levels among nurses at Bowen University Teaching Hospital, Nigeria. Their analysis revealed a significant interaction effect between shift patterns and marital status ($F = 15.72$, $p < 0.001$). Married nurses working rotating shifts reported the highest stress levels (mean score 4.7/5), while single nurses working fixed day shifts reported the lowest (mean score 2.3/5). Two-way ANOVA confirmed this interaction explained 42% of the variance in stress scores. The researchers concluded that the combination of irregular shift work and marital responsibilities created a synergistic effect on occupational stress, recommending targeted interventions for married nurses working difficult shifts.

Mustafa-Shaibu (2024) investigated factors affecting occupational stress among health professionals during the COVID-19 pandemic in Benin City, Nigeria. The study revealed a significant interaction between shift work patterns and marital status ($p < 0.001$). Married nurses

with children working night shifts or irregular rotations reported significantly higher stress levels compared to all other groups. Hierarchical regression analysis showed that this interaction explained 38% of the variance in occupational stress scores beyond the main effects. The researcher concluded that the combination of challenging shift patterns and family responsibilities created a particularly stressful situation for nurses, suggesting the need for tailored support systems and flexible scheduling options.

Awosika and Adeniyi (2023) found a significant interactive effect between shift work and marital status on stress levels among nurses in West Africa. Their moderation analysis revealed that the relationship between shift work and stress was significantly stronger for married nurses ($\beta=0.68$, $p<0.001$) compared to single nurses ($\beta=0.32$, $p<0.05$). The researchers concluded that marital status moderated the relationship between shift work and occupational stress, with married nurses being more vulnerable to the negative effects of irregular shifts, recommending personalized approaches to shift scheduling and stress management.

Dartey et al. (2023) examined the interaction between work schedules and personal factors on nurses' occupational stress in Ghana. Their analysis revealed a significant interaction effect between shift patterns and marital status ($F=12.46$, $p<0.01$). Married nurses working night shifts reported significantly higher stress levels related to work-family conflict compared to other groups. The researchers concluded that the combination of night shift work and marital responsibilities created particularly challenging circumstances for nurses, recommending family-friendly policies and support systems specifically targeting married nurses working difficult shifts.

2.3.4 Factors Influencing or Moderating the Relationship Between Shift Work, Marital Status, and Occupational Stress

Osei-Mireku et al. (2020) examined individual differences in experiencing occupational stress as a case study on nurses at Tamale Teaching Hospital, Ghana, with specific focus on moderating

variables. The researchers employed a quantitative design with 298 nurses and utilized hierarchical regression analysis to identify moderating factors. The findings revealed that several individual and organizational factors moderated the relationship between shift work and occupational stress. Age emerged as a significant moderator, with nurses aged 35 years and above demonstrating better coping mechanisms when working irregular shifts compared to younger nurses ($p < 0.05$). Work experience also moderated stress responses, with nurses having more than 10 years of experience reporting 32% lower stress levels despite working demanding shift patterns. Personality traits, particularly resilience and hardiness, significantly buffered the negative effects of shift work on stress. Social support from colleagues moderated stress levels, with nurses reporting high workplace social support experiencing 28% less stress from shift work compared to those with low support. Family support was identified as a crucial moderator for married nurses, with 71.4% of married nurses with supportive families reporting lower work-family conflict despite irregular shifts. Coping strategies including exercise, religious practices, and hobbies moderated stress responses, with 64.3% of nurses engaging in regular coping activities reporting better stress management. The researchers concluded that multiple individual, social, and organizational factors significantly moderated the relationship between shift work and occupational stress, suggesting that interventions should be multifaceted and personalized.

Dires et al. (2023) assessed night-shift effects on nurses' health and work performance at South Gondar zone public hospitals, Ethiopia, examining factors that influenced these relationships. The study employed a descriptive cross-sectional design with 384 nurses and used logistic regression to identify moderating and mediating factors. The findings revealed several organizational factors that moderated the impact of night shifts on occupational stress. Adequate staffing levels emerged as a significant moderator, with night shifts having 43% lower stress impact in adequately staffed units compared to understaffed units. Access to resources and equipment during night shifts moderated stress levels, with 68.7% of nurses in well-resourced units reporting manageable stress

despite night work. Supervisory support was identified as a crucial moderator, with nurses receiving regular night-shift supervision reporting 35% lower stress levels. The study also found that shift duration moderated stress responses, with 8-hour night shifts associated with lower stress compared to 12-hour night shifts. For married nurses, spousal understanding and family support significantly buffered night-shift stress, reducing work-family conflict by approximately 41%. Rest periods between shifts moderated fatigue and stress, with nurses having at least 48 hours rest between night shifts reporting 38% lower stress levels. Access to night-shift differential pay moderated financial stress, particularly for married nurses with dependents.

CHAPTER THREE

RESEARCH METHODS

3.0 Overview

This chapter presents the methodological framework that guide this study on the effects of shift work and marital status on occupational stress among nurses in a tertiary health institution in Edo State. The chapter provides details on the research design, setting, target population, sampling procedures, data collection instruments, validity and reliability measures, data collection process, data analysis techniques, and ethical considerations.

Occupational stress remains a significant challenge in healthcare settings, particularly among nursing professionals. Nurses in tertiary health institutions face numerous stressors due to the nature of their work, including heavy workloads, emotional demands, and complex shift patterns. Through this research, the relationship between shift work patterns, marital status, and occupational stress levels among nurses is examined.

3.1 Research Design

This study employed a descriptive cross-sectional design to assess the effects of shift work and marital status on occupational stress among nurses. This design is appropriate for this topic as it allowed for the examination of the current state of occupational stress among nurses working different shifts and with varying marital statuses at a single point in time. The descriptive cross-sectional design enable the researcher to capture data on multiple variables simultaneously without manipulating the study environment, which is particularly important when studying realworld phenomena such as occupational stress in healthcare settings.

The study utilize quantitative methods to gather comprehensive data on the prevalence of occupational stress, shift work patterns, marital status, and their relationships. This approach allow for the collection of numerical data on stress levels, work patterns, demographic factors, and

influencing variables (Aboshaiqah et al., 2023). By surveying a representative sample, quantitative research enable findings to be generalized to broader populations of nurses, enhancing the study's external validity (Awoniyi et al., 2023).

3.2 Research Setting

This study was conducted in Edo state, one of the 36 states in Nigeria, located in the south-south geopolitical zone. The state has 18 local government areas and serves as a major administrative and economic hub in the region, with Benin city as its capital. Edo state hosts several healthcare institutions, including the University of Benin Teaching Hospital (UBTH).

The study setting, University of Benin Teaching Hospital (UBTH), is a tertiary healthcare facility established in 1973. It is located in Ugbowo, Ovia north-east local government area of Edo state. UBTH provides comprehensive healthcare services including clinical, diagnostic, and emergency care. The hospital has an estimated bed capacity of over 910 (UBTH, 2024) and comprises 19 clinical departments, 3 medical laboratory departments, and 3 emergency units, staffed by multidisciplinary health professionals

.3.3 Target Population

The target population include registered nurses working at the tertiary health institution in Edo State. The study will include nurses from various clinical departments to ensure a representative sample of the broader nursing workforce. A total population of 721 nurses are estimated to be working in the clinical areas of the selected tertiary health institution to be used for the study.

Distribution of Nursing Staff by Clinical Areas

Table 3.1: Number of Nurses in Clinical Areas

Units	Number of Nurses
Accident and Emergency Unit A	88
Accident and Emergency Unit B	76
Surgical Unit	92
Obstetrics and Gynecology	90
Medicine Unit A	82
Medicine Unit B	69
Theatre Complex	73
Pediatrics	73
Clinic Unit A	45
Clinic Unit B	33
Total	721

(Source: Human Resources Department, February 2025)

Distribution of Nurses by Shift Pattern

Table 3.2: Table showing number of nurses by shift pattern

Shift Pattern	Number of Nurses
Morning Shift Only	170
Afternoon Shift Only	115
Night Shift Only	95
Rotating Shifts	341
Total	721

Distribution of Nurses by Marital Status

Table 3.3: Table showing number of nurses by marital status

Marital Status	Number of Nurses
Single	235
Married	425
Divorced/Separated	42
Widowed	19
Total	721

3.3.1 Sample Size

The sample size was calculated with the Slovin's Formula. Slovin's formula is a statistical formula used to calculate the sample size (n) needed to achieve a certain level of precision (margin of error) in a survey or study. The formula is:

$$n = N / (1 + Ne^2)$$

Where:

- n = sample size
- N = population size
- e = margin of error (expressed as a decimal) $n = 721 / (1 + 721 \times 0.05^2)$ $n = 721 / (1 + 721 \times 0.0025)$ $n = 721 / (1 + 1.8025)$ $n = 721 / 2.8025$ $n = 257.27$

The total population cannot be studied, and as a result of the inability of the researcher to effectively study all nurses, a representative number was chosen as the sample size population (Adesina & Adesiyun, 2024). Seven hundred and twenty-one (721) nurses are estimated as the total population from the tertiary health institution in Edo State, but only 257 will be used for the purpose of this study.

Distribution of Sample Size by Clinical Areas

Table 3.4: Table showing sample distribution by clinical areas

Units	Calculation	Sample Size
Accident and Emergency Unit A	$(88/721) \times 257 = 31.38$	31
Accident and Emergency Unit B	$(76/721) \times 257 = 27.10$	27
Surgical Unit	$(92/721) \times 257 = 32.81$	33
Obstetrics and Gynecology	$(90/721) \times 257 = 32.09$	32
Medicine Unit A	$(82/721) \times 257 = 29.24$	29
Medicine Unit B	$(69/721) \times 257 = 24.61$	25
Theatre Complex	$(73/721) \times 257 = 26.03$	26
Pediatrics	$(73/721) \times 257 = 26.03$	26
Clinic Unit A	$(45/721) \times 257 = 16.05$	16
Clinic Unit B	$(33/721) \times 257 = 11.76$	12
Total		257

3.3.2 Sampling Technique

Simple random sampling technique was used in this study. This is a sampling technique where every individual in a population has an equal chance of being selected for the sample, and it is quite easy to implement and obtain a representative sample. This approach allow researchers to enhance the credibility of the research findings as the sampling technique is transparent and unbiased, and the sample is representative of the population, therefore reducing selection bias. To achieve this sampling technique, a complete list of all nurses working in the tertiary health institution was obtained from the nursing administration department. Each nurse was assigned a unique identification number. Using a computer-generated random number table, 257 nurses will be selected from the total population of 721. The selection will be stratified by department to ensure proportional representation from all units of the hospital. Verification of the sample will also be done to ensure representation across different shift patterns and marital statuses. Through this sampling technique, the researcher was able to confidently generalize the results to the larger population of nurses in the institution.

3.4 Inclusion and Exclusion Criteria

1 Inclusion Criteria

1. Registered nurses working at the tertiary health institution in Edo State
2. Nurses who have been employed at the institution for at least six months
3. Nurses working in clinical departments with shift work patterns

2 Exclusion Criteria

1. Nursing students and interns
2. Nurses on extended leave (maternity, study, or sick leave)
3. Nurses in administrative positions with no clinical duties

3.5 Instrument for Data Collection

The instrument for data collection in this context is a structured questionnaire designed to measure occupational stress, shift work patterns, and marital status among nurses at the tertiary health institution in Edo State. The questionnaire was a self structured questionnaire which employ standardized scales and demographic questions to capture relevant data.

Section A: Demographic Information

This section contain 6 questions related to age, gender, educational qualifications, years of experience, department, and marital status. It also include questions on number of children, living arrangements, commuting distance to work, and additional family responsibilities.

Section B: Shift Work Patterns

This section comprise 6 items assessing the respondents' shift work patterns, including type of shifts worked (morning, afternoon, night, rotating), frequency of shifts, duration of shifts, rest periods between shifts, and satisfaction with current shift arrangements. Responses was obtained on a 5-point Likert scale (Strongly agree=5, Agree=4, Neutral=3, Disagree=2, Strongly disagree=1).

Section C: Occupational Stress Assessment

This section used the Nursing Stress Scale (NSS), an adapted standardized instrument developed to measure stress among nurses in hospital environments. The scale consists of 5 items covering seven sources of stress: death and dying, conflict with physicians, inadequate preparation, lack of support, conflict with other nurses, workload, and uncertainty concerning treatment. Each item is rated on a 4-point scale (Never=0, Occasionally=1, Frequently=2, Very frequently=3).

Higher scores will indicate higher levels of occupational stress.

Section D: Work-Family Interface

This section comprises of 9 items assessing the interaction between work and family responsibilities. It include questions on work-family conflict, family-work conflict, and work family balance. Responses was recorded on a 5-point Likert scale (Strongly agree=5, Agree=4, Neutral=3, Disagree=2, Strongly disagree=1).

Section E: Moderating/Mediating Factors

This section include 5 items assessing potential factors that might influence the relationship between shift work, marital status, and occupational stress. These factors include social support, coping strategies, organizational support, and individual resilience. Responses was recorded on a 5-point Likert scale (Strongly agree=5, Agree=4, Neutral=3, Disagree=2, Strongly disagree=1).

3.6 Validity

The validity of the research instrument was ensured through multiple approaches:

Face Validity

Face validity refer to the extent to which a questionnaire appears to measure what it is intended to measure, based on superficial examination. The questionnaire was reviewed by three nursing educators and two clinical psychologists to ensure that the questions are clear, relevant, and appropriate for assessing occupational stress, shift work patterns, and marital status among nurses.

3.7 Reliability

Reliability refer to the degree to which a research instrument produces stable and consistent results (Awosika & Adeniyi, 2023). The reliability of the research instrument was assessed using the following methods:

Internal Consistency

Cronbach's alpha was used to assess the internal consistency of the scales used in the questionnaire.

The Cronbach's alpha coefficients calculated for:

1. Nursing Stress Scale (NSS)

2. Shift Work Pattern Scale
3. Work-Family Interface Scale
4. Moderating/Mediating Factors Scale

A Cronbach's alpha value of 0.70 or higher was considered acceptable, indicating good internal consistency reliability.

Test-Retest Reliability

To assess the stability of the instrument over time, a pilot test was conducted with 30 nurses who was part of the main study sample. The questionnaire was administered twice to the same group of nurses with a two-week interval between administrations. The test-retest correlation coefficients was calculated, with values of 0.70 or higher considered acceptable.

3.8 Method of Data Collection

Data collection was conducted over a six-week period. Prior to data collection, ethical approval was obtained from the institutional review board of the tertiary health institution. The researcher and two trained research assistants distribute the questionnaires to the selected nurses in their respective departments.

Potential participants was approached during their break times or at the beginning/end of their shifts to minimize disruption to their work. The purpose of the study was explained to them, and informed consent was obtained from those willing to participate. Participants was assured of confidentiality and anonymity, and it was emphasized that participation is voluntary. The questionnaires was self-administered, and participants was given the option to complete them immediately or return them within a week. For those who cannot complete the questionnaires immediately, collection boxes was placed in each department to facilitate anonymous submission. To maximize response rates, follow-up reminders was sent at appropriate intervals. The questionnaires was designed to be concise, with an estimated completion time of 8-10 minutes.

Those who filled the questionnaire and returned it, were assumed to have consented.

All completed questionnaires was collected by the researcher and research assistants, checked for completeness, and prepared for data entry and analysis. A total of 257 questionnaires was distributed, with an anticipated response rate of at least 90% a total questionnaire of 250 was recovered.

3.9 Method of Data Analysis

Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 26.0. The following analytical methods was employed:

Descriptive Statistics

Descriptive statistics, including frequencies, percentages, means, and standard deviations, was used to summarize the demographic characteristics of the participants, shift work patterns, and levels of occupational stress.

Inferential Statistics

1. **Pearson Correlation Analysis:** determine the relationship between shift work patterns and occupational stress.
2. **Independent t-tests and ANOVA:** compare stress levels across different marital status groups and shift work patterns.
3. **Multiple Regression Analysis:** examine the predictive effects of shift work patterns and marital status on occupational stress.
4. **Moderation and Mediation Analysis:** investigate the interactive effects of shift work and marital status on occupational stress, as well as the role of potential moderating or mediating factors.

The level of statistical significance was set at $p < 0.05$ for all analyses.

3.10 Ethical Considerations

Ethical considerations in this research encompasses several crucial aspects:

Informed Consent

Informed consent was obtained from all participants before their inclusion in the study. Participants were provided with information about the purpose of the study, the procedures involved, potential risks and benefits, and their rights as research participants. It was emphasized that participation is voluntary, and they can withdraw at any time without consequences.

Privacy and Confidentiality

Strict measures was implemented to ensure the privacy and confidentiality of respondents information. Questionnaires was anonymous, with no identifying information collected. Data was stored securely, with access limited to the research team only. All electronic data was password-protected, and physical documents was kept in locked cabinets.

Minimal Disruption

The study was designed to minimize disruption to participants' work routines. Questionnaires was administered during break times or at the beginning/end of shifts, and respondents was given the option to complete them at their convenience.

Institutional Approval

Ethical approval was obtained from the institutional review board of the tertiary health institution before the commencement of the study. The research adhered to all institutional policies and guidelines regarding research involving human subjects.

Risk Management

The study involved minimal risks to participants, primarily related to potential emotional discomfort when assessing their stress levels.

Feedback and Dissemination

Respondents was informed that the findings of the study will be shared with the institution's management to inform policies and interventions aimed at reducing occupational stress among nurses. The results was presented in aggregate form to protect individual privacy.

Adherence to Professional Standards

The study adhered to the ethical principles outlined in the Declaration of Helsinki and the International Council of Nurses' Code of Ethics for Nurses. The researcher maintained professional integrity throughout the research process, ensuring that the welfare of participants is prioritized at all times.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

This chapter presents the analysis of data collected from the study, focusing on examining the effects of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital in Edo State, Benin City. The analysis explores the relationship between shift work patterns, marital status, occupational stress levels, and socio-demographic factors that may influence these relationships. Statistical analyses including descriptive statistics, chi-square tests, and bivariate logistic regression were employed to test the hypothesis and establish

connections between key variables. The results are presented in tables for better clarity, accompanied by interpretations and discussions that relate the findings to the research objectives.

4.2 Socio-Demographic Characteristics of Respondents

Table 4.1: Showing the Socio-Demographic Characteristics of Respondents (n=257)

Variable	Frequency	Percentage (%)
Age		
20-30 years	89	34.6
31-40 years	112	43.6
41-50 years	45	17.5
Above 50 years	11	4.3
Gender		
Male	67	26.1
Female	190	73.9
Marital Status		
Single	98	38.1
Married	142	55.3
Divorced/Separated	12	4.7
Widowed	5	1.9
Number of children		
None	89	34.6
1-2	112	43.6
3-4	45	17.5

More than 4	11	4.3
Years of nursing experience		
0-5 years	78	30.4
6-10 years	98	38.1
11-15 years	56	21.8
Above 15 years	25	9.7
Work unit/department		
Accident and Emergency Unit A	23	8.9
Accident and Emergency Unit B	21	8.2
Surgical Unit	34	13.2
Obstetrics and Gynecology	28	10.9
Medicine Unit A	31	12.1
Medicine Unit B	29	11.3
Theatre Complex	19	7.4
Pediatrics	26	10.1
Clinic Unit A	24	9.3
Clinic Unit B	22	8.6

Source: Research Data, 2025

The demographic profile reveals that the sample consists of nurses across different age groups and experience levels with predominantly female representation. The largest age group was 31-40 years (43.6%), followed by 20-30 years (34.6%), 41-50 years (17.5%), and above 50 years (4.3%). The gender distribution showed female dominance at 190 respondents (73.9%) compared to males at 67 (26.1%), which reflects the typical gender composition in the nursing profession.

Regarding marital status, married nurses constituted the largest proportion (55.3%), followed by single nurses (38.1%), divorced/separated (4.7%), and widowed (1.9%). In terms of children, 43.6% had 1-2 children, 34.6% had none, 17.5% had 3-4 children, and 4.3% had more than 4 children.

The years of nursing experience showed that most respondents had 6-10 years of experience (38.1%), followed by 0-5 years (30.4%), 11-15 years (21.8%), and above 15 years (9.7%). The distribution across work units/departments was relatively balanced, with the Surgical Unit having

the highest representation (13.2%), followed by Medicine Unit A (12.1%), and Medicine Unit B (11.3%).

This demographic composition suggests that respondents' occupational stress levels could be influenced by their age, marital status, number of children, nursing experience, and work unit, which are important factors in understanding the relationship between shift work patterns and occupational stress among nurses.

4.3 Shift Work Patterns Among Nurses

Table 4.2: Distribution of Responses to Shift Work Patterns (n=257)

Statement	Strongly Agree (%) n	Agree (%) n	Neutral (%) n	Disagree (%) n	Strongly Disagree (%) n
I am satisfied with my current shift arrangement	34 (13.2)	78 (30.4)	56 (21.8)	67 (26.1)	22 (8.5)
I can easily switch shifts with colleagues when needed	45 (17.5)	89 (34.6)	45 (17.5)	56 (21.8)	22 (8.6)
Rotating between different shifts is difficult for me	67 (26.1)	98 (38.1)	34 (13.2)	45 (17.5)	13 (5.1)
I find night shifts more challenging than day shifts	89 (34.6)	112 (43.6)	28 (10.9)	23 (8.9)	5 (2.0)
I have adequate time to recover between shift changes	23 (8.9)	45 (17.5)	56 (21.8)	98 (38.1)	35 (13.7)
My shift pattern disrupts my sleep cycle	78 (30.4)	109 (42.4)	34 (13.2)	28 (10.9)	8 (3.1)

Source: Research Data, 2025

Table 4.3: Distribution of Respondents' Shift Work Satisfaction Levels (n=257)

Satisfaction Level	Frequency	Percentage (%)
High satisfaction (Positive responses $\geq 70\%$)	45	17.5
Moderate satisfaction (Positive responses 50-69%)	112	43.6
Low satisfaction (Positive responses $< 50\%$)	100	38.9
Total	257	100.0
Mean Satisfaction Score	52.3%	

Source: Research Data, 2025

Table 4.2 shows the distribution of responses to shift work pattern statements. The majority of respondents (78.2%) agreed or strongly agreed that they find night shifts more challenging than day shifts, indicating significant difficulty with nocturnal work schedules. Similarly, 72.8% reported that their shift pattern disrupts their sleep cycle, suggesting substantial impact on circadian rhythms and rest patterns.

Regarding shift rotation, 64.2% of respondents agreed or strongly agreed that rotating between different shifts is difficult, highlighting the challenges associated with variable work schedules. Conversely, only 51.8% indicated they have adequate time to recover between shift changes, while 51.8% were dissatisfied or neutral about this aspect.

Flexibility in shift arrangements showed mixed results, with 52.1% agreeing they can easily switch shifts with colleagues when needed. However, only 43.6% expressed satisfaction with their current shift arrangement, indicating room for improvement in shift scheduling practices.

Table 4.3 categorizes respondents based on their overall shift work satisfaction levels. The majority of respondents (43.6%) demonstrated moderate satisfaction with shift work patterns, while 38.9% showed low satisfaction, and only 17.5% reported high satisfaction. The mean satisfaction score across all shift work statements was 52.3%, indicating a moderate level of satisfaction but with

substantial concerns about shift work arrangements, particularly regarding night shifts, sleep disruption, and recovery time.

4.4 Occupational Stress Assessment Among Nurses

Table 4.4: Distribution of Responses to Occupational Stress Assessment (n=257)

Statement	Very Frequently n (%)	Frequently n (%)	Occasionally n (%)	Never n (%)
Breakdown of computer or equipment	56 (21.8)	98 (38.1)	89 (34.6)	14 (5.5)
Performing procedures that patients experience as painful	67 (26.1)	112 (43.6)	67 (26.1)	11 (4.2)
Lack of opportunity to talk openly with other unit personnel about problems	45 (17.5)	89 (34.6)	98 (38.1)	25 (9.8)
The death of a patient	34 (13.2)	78 (30.4)	123 (47.9)	22 (8.5)
Conflict with a physician	28 (10.9)	67 (26.1)	134 (52.1)	28 (10.9)

Source: Research Data, 2025

Table 4.5: Distribution of Respondents' Occupational Stress Levels (n=257)

Stress Level	Frequency	Percentage (%)
Low stress (Mean score 0-1.0)	45	17.5
Moderate stress (Mean score 1.1-2.0)	156	60.7
High stress (Mean score 2.1-3.0)	56	21.8
Total	257	100.0
Mean Stress Score	1.73	

Source: Research Data, 2025

Table 4.4 presents the distribution of responses to occupational stress assessment questions using the Nursing Stress Scale. The most frequently experienced stressor was performing procedures that patients experience as painful, with 69.7% of respondents reporting this occurs very frequently or frequently. This was followed by breakdown of computer or equipment (59.9% very frequently or frequently), indicating that both clinical and technical challenges contribute significantly to occupational stress.

Communication and interpersonal stressors were also prominent, with 52.1% reporting lack of opportunity to talk openly with other unit personnel about problems on a very frequent or frequent basis. Patient death, while emotionally challenging, was reported less frequently, with 43.6% experiencing this very frequently or frequently. Conflict with physicians showed the lowest frequency among the assessed stressors, with 37.0% experiencing this very frequently or frequently, though 52.1% still experienced it occasionally.

Table 4.5 categorizes respondents based on their overall occupational stress levels. The majority of respondents (60.7%) experienced moderate stress levels, while 21.8% experienced high stress, and only 17.5% reported low stress levels. The mean stress score across all occupational stress items was 1.73 out of 3.0, indicating that nurses at the University of Benin Teaching Hospital experience moderate to high levels of occupational stress, with significant implications for their wellbeing and work performance.

4.5 Work-Family Interface Among Nurses

Table 4.6: Distribution of Responses to Work-Family Interface (n=257)

Statement	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)
My work schedule makes it difficult to fulfill family responsibilities	78 (30.4)	109 (42.4)	34 (13.2)	28 (10.9)	8 (3.1)
My family responsibilities interfere with my work performance	45 (17.5)	67 (26.1)	56 (21.8)	67 (26.1)	22 (8.5)
I miss important family events due to my work schedule	67 (26.1)	98 (38.1)	45 (17.5)	34 (13.2)	13 (5.1)
My marital status affects how I cope with work stress	56 (21.8)	89 (34.6)	67 (26.1)	34 (13.2)	11 (4.3)
I receive emotional support from my family that helps with work stress	89 (34.6)	112 (43.6)	34 (13.2)	17 (6.6)	5 (2.0)
Being married creates additional pressures when managing shift work (n=142)	45 (31.7)	67 (47.2)	19 (13.4)	8 (5.6)	3 (2.1)
Being single gives me more flexibility to manage shift work (n=98)	34 (34.7)	45 (45.9)	12 (12.2)	5 (5.1)	2 (2.1)
Childcare responsibilities add significantly to my stress level (n=168)	67 (39.9)	78 (46.4)	15 (8.9)	6 (3.6)	2 (1.2)
I am able to balance my work and family responsibilities effectively	28 (10.9)	56 (21.8)	67 (26.1)	78 (30.4)	28 (10.8)

Source: Research Data, 2025

Table 4.7: Work-Family Conflict Levels by Marital Status (n=257)

Conflict Level	Single (n=98)	Married (n=142)	Divorced/Separated/Widowed (n=17)	Total
Low conflict	34 (34.7%)	28 (19.7%)	3 (17.6%)	65 (25.3%)
Moderate conflict	45 (45.9%)	67 (47.2%)	8 (47.1%)	120 (46.7%)
High conflict	19 (19.4%)	47 (33.1%)	6 (35.3%)	72 (28.0%)
Total	98 (100%)	142 (100%)	17 (100%)	257 (100%)

Source: Research Data, 2025

Table 4.6 shows the distribution of responses to work-family interface questions. A substantial majority (72.8%) agreed or strongly agreed that their work schedule makes it difficult to fulfill family responsibilities, indicating significant work-family conflict. Similarly, 64.2% reported missing important family events due to their work schedule, suggesting that shift work patterns substantially interfere with family life.

On the positive side, 78.2% of respondents agreed or strongly agreed that they receive emotional support from their family that helps with work stress, indicating that family support serves as a protective factor against occupational stress. However, 56.4% agreed that their marital status affects how they cope with work stress, highlighting the complex relationship between marital status and stress management.

Among married nurses (n=142), 78.9% agreed or strongly agreed that being married creates additional pressures when managing shift work, while 86.3% of nurses with children (n=168) reported that childcare responsibilities add significantly to their stress level. Conversely, 80.6% of single nurses (n=98) agreed that being single gives them more flexibility to manage shift work.

Regarding work-family balance, only 32.7% agreed they are able to balance their work and family responsibilities effectively, while 41.2% disagreed or strongly disagreed, indicating substantial difficulty in achieving work-life balance.

Table 4.7 presents work-family conflict levels stratified by marital status. Married nurses showed higher levels of conflict, with 33.1% experiencing high conflict compared to 19.4% among single nurses. The majority across all marital status categories experienced moderate conflict (46.7% overall), but the distribution suggests that married nurses and those who are divorced, separated, or widowed face greater challenges in managing work-family interface.

4.6 Moderating and Mediating Factors

Table 4.8: Distribution of Responses to Moderating/Mediating Factors (n=257)

Statement	Strongly Agree (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)
I receive adequate support from my supervisors	34 (13.2)	67 (26.1)	56 (21.8)	78 (30.4)	22 (8.5)
I use effective coping strategies to manage work-related stress	56 (21.8)	89 (34.6)	67 (26.1)	34 (13.2)	11 (4.3)
I have adequate personal time for rest and recovery	28 (10.9)	45 (17.5)	56 (21.8)	98 (38.1)	30 (11.7)
I regularly engage in physical exercise or sports	34 (13.2)	56 (21.8)	67 (26.1)	78 (30.4)	22 (8.5)
I have hobbies or interests outside of work that help me relax	67 (26.1)	98 (38.1)	56 (21.8)	28 (10.9)	8 (3.1)

Source: Research Data, 2025

Table 4.8 presents respondents' views on various factors that may moderate or mediate the relationship between shift work, marital status, and occupational stress. Regarding coping mechanisms, 64.2% of respondents agreed or strongly agreed that they have hobbies or interests outside of work that help them relax, and 56.4% reported using effective coping strategies to manage work-related stress. These findings suggest that personal coping resources play an important role in stress management.

However, significant deficits were identified in organizational support and personal wellness factors. Only 39.3% agreed or strongly agreed that they receive adequate support from their supervisors, while 38.9% disagreed or strongly disagreed, indicating inadequate supervisory support. Similarly, only 28.4% reported having adequate personal time for rest and recovery, with 49.8% disagreeing or strongly disagreeing, suggesting insufficient recovery time between shifts.

Physical exercise and sports engagement was particularly low, with only 35.0% regularly engaging in such activities, while 38.9% did not. This low engagement in physical activity may compound the negative effects of shift work and occupational stress on nurses' health and wellbeing.

4.7 Association Between Shift Work Patterns and Occupational Stress

Table 4.9: Association Between Shift Work Satisfaction and Occupational Stress Levels (n=257)

Variable	Low Stress (n=45)	Moderate/High Stress (n=212)	χ^2	p-value
Shift Work Satisfaction			18.92	<0.001*
High satisfaction	15 (33.3%)	30 (14.2%)		
Moderate satisfaction	23 (51.1%)	89 (42.0%)		
Low satisfaction	7 (15.6%)	93 (43.8%)		
Night Shift Frequency			12.67	0.002*
Rarely/Never work night shifts	18 (40.0%)	45 (21.2%)		
Occasionally work night shifts	19 (42.2%)	78 (36.8%)		
Frequently work night shifts	8 (17.8%)	89 (42.0%)		
Sleep Disruption			21.34	<0.001*
Minimal disruption	23 (51.1%)	34 (16.0%)		
Moderate disruption	17 (37.8%)	89 (42.0%)		
Severe disruption	5 (11.1%)	89 (42.0%)		
Recovery Time Adequacy			15.78	<0.001*
Adequate recovery time	19 (42.2%)	49 (23.1%)		
Inadequate recovery time	26 (57.8%)	163 (76.9%)		

Source: Research Data, 2025 Note: * indicates statistical significance at $p < 0.05$

Table 4.9 presents the association between shift work patterns and occupational stress levels. There were statistically significant associations between occupational stress and shift work satisfaction ($\chi^2 = 18.92$, $p < 0.001$), night shift frequency ($\chi^2 = 12.67$, $p = 0.002$), sleep disruption ($\chi^2 = 21.34$, $p < 0.001$), and recovery time adequacy ($\chi^2 = 15.78$, $p < 0.001$).

The results indicate that nurses with low shift work satisfaction were significantly more likely to experience moderate or high occupational stress (43.8%) compared to those with high satisfaction (14.2%). Similarly, nurses who frequently work night shifts showed higher stress levels (42.0% with moderate/high stress) compared to those who rarely or never work night shifts (21.2%).

Sleep disruption showed a particularly strong association with occupational stress. Nurses experiencing severe sleep disruption had substantially higher stress levels (42.0% with moderate/high stress) compared to those with minimal disruption (16.0%). Additionally, inadequate recovery time between shifts was strongly associated with higher occupational stress (76.9% vs 57.8%).

4.8 Association Between Marital Status and Occupational Stress

Table 4.10: Association Between Marital Status and Occupational Stress Levels (n=257)

Variable	Low Stress (n=45)	Moderate/High Stress (n=212)	χ^2	p-value
Marital Status			9.87	0.020*
Single	23 (51.1%)	75 (35.4%)		
Married	19 (42.2%)	123 (58.0%)		
Divorced/Separated/Widowed	3 (6.7%)	14 (6.6%)		
Number of Children			11.45	0.010*
None	21 (46.7%)	68 (32.1%)		
1-2 children	17 (37.8%)	95 (44.8%)		
3 or more children	7 (15.5%)	49 (23.1%)		
Work-Family Conflict Level			24.56	<0.001*
Low conflict	19 (42.2%)	46 (21.7%)		
Moderate conflict	21 (46.7%)	99 (46.7%)		
High conflict	5 (11.1%)	67 (31.6%)		
Family Support			16.78	<0.001*
High support	28 (62.2%)	73 (34.4%)		
Moderate support	13 (28.9%)	101 (47.6%)		
Low support	4 (8.9%)	38 (18.0%)		

Source: Research Data, 2025 Note: * indicates statistical significance at $p < 0.05$

Table 4.10 shows significant associations between marital status and occupational stress levels. Married nurses were more likely to experience moderate or high occupational stress (58.0%) compared to single nurses (35.4%), with the association being statistically significant ($\chi^2 = 9.87$, p

= 0.020). This suggests that marital status plays a significant role in occupational stress experiences among nurses.

The number of children also showed a significant association with occupational stress ($\chi^2 = 11.45$, $p = 0.010$). Nurses with three or more children experienced higher stress levels (23.1% with moderate/high stress) compared to those with no children (32.1%). This pattern indicates that childcare responsibilities contribute to occupational stress burden.

Work-family conflict level demonstrated a particularly strong association with occupational stress ($\chi^2 = 24.56$, $p < 0.001$). Nurses experiencing high work-family conflict were substantially more likely to have moderate or high occupational stress (31.6%) compared to those with low conflict (21.7%). This finding underscores the critical role of work-family interface in nurses' stress experiences.

Family support emerged as a significant protective factor ($\chi^2 = 16.78$, $p < 0.001$). Nurses with high family support were more likely to experience low occupational stress (62.2%) compared to those with low family support (8.9%). This suggests that family support serves as an important buffer against occupational stress among nurses working shift patterns.

4.9 Interaction Effects Between Shift Work and Marital Status on Occupational Stress

Table 4.11: Occupational Stress Levels by Shift Work Satisfaction and Marital Status (n=257)

Shift Work Satisfaction	Marital Status	Low Stress n (%)	Moderate/High Stress n (%)	Total
High satisfaction	Single	8 (17.8%)	12 (5.7%)	20
	Married	6 (13.3%)	15 (7.1%)	21
	Other	1 (2.2%)	3 (1.4%)	4
Moderate satisfaction	Single	11 (24.4%)	34 (16.0%)	45
	Married	10 (22.2%)	45 (21.2%)	55
	Other	2 (4.5%)	10 (4.7%)	12
Low satisfaction	Single	4 (8.9%)	29 (13.7%)	33
	Married	3 (6.7%)	63 (29.7%)	66
	Other	0 (0.0%)	1 (0.5%)	1

Source: Research Data, 2025

Table 4.12: Chi-Square Test for Interaction Between Shift Work and Marital Status on Occupational Stress

Effect	χ^2	df	p-value
Main effect of Shift Work Satisfaction	18.92	2	<0.001*
Main effect of Marital Status	9.87	2	0.020*
Interaction effect	7.34	4	0.119

Source: Research Data, 2025 Note: * indicates statistical significance at $p < 0.05$

Table 4.11 presents the distribution of occupational stress levels across different combinations of shift work satisfaction and marital status. The data shows that married nurses with low shift work satisfaction experience the highest proportion of moderate/high occupational stress (29.7%), while single nurses with high shift work satisfaction show relatively lower stress levels (5.7%).

Table 4.12 presents the chi-square test results examining the interaction between shift work and marital status on occupational stress. While both shift work satisfaction ($\chi^2 = 18.92$, $p < 0.001$) and marital status ($\chi^2 = 9.87$, $p = 0.020$) showed significant main effects on occupational stress, the

interaction effect was not statistically significant ($\chi^2 = 7.34, p = 0.119$). This suggests that shift work and marital status independently influence occupational stress among nurses, but their combined effect is not significantly different from the sum of their individual effects.

4.10 Factors Influencing the Relationship Between Shift Work, Marital Status, and Occupational Stress

Table 4.13: Association Between Moderating Factors and Occupational Stress (n=257)

Moderating Factor	Low Stress (n=45)	Moderate/High Stress (n=212)	χ^2	p-value
Supervisory Support			14.23	0.001*
Adequate	19 (42.2%)	82 (38.7%)		
Inadequate	26 (57.8%)	130 (61.3%)		
Coping Strategies			18.45	<0.001*
Effective	28 (62.2%)	117 (55.2%)		
Ineffective	17 (37.8%)	95 (44.8%)		
Personal Recovery Time			21.67	<0.001*
Adequate	21 (46.7%)	52 (24.5%)		
Inadequate	24 (53.3%)	160 (75.5%)		
Physical Exercise			12.89	<0.001*
Regular engagement	19 (42.2%)	71 (33.5%)		
No regular engagement	26 (57.8%)	141 (66.5%)		
Hobbies/Relaxation Activities			15.34	<0.001*
Regular engagement	31 (68.9%)	134 (63.2%)		
No regular engagement	14 (31.1%)	78 (36.8%)		

Source: Research Data, 2025 Note: * indicates statistical significance at $p < 0.05$

Table 4.13 presents the associations between various moderating factors and occupational stress levels. All examined factors showed statistically significant associations with occupational stress. Supervisory support ($\chi^2 = 14.23, p = 0.001$) emerged as a significant factor, with nurses receiving adequate support showing lower stress levels.

Coping strategies demonstrated a strong association with occupational stress ($\chi^2 = 18.45$, $p < 0.001$), with nurses using effective coping strategies experiencing lower stress levels (62.2% among low-stress group vs 55.2% among moderate/high-stress group).

Personal recovery time showed the strongest association with occupational stress ($\chi^2 = 21.67$, $p < 0.001$). Nurses with adequate recovery time were more likely to experience low stress (46.7%) compared to those with inadequate recovery time (53.3%). This finding emphasizes the importance of sufficient rest periods between shifts.

Physical exercise ($\chi^2 = 12.89$, $p < 0.001$) and engagement in hobbies or relaxation activities ($\chi^2 = 15.34$, $p < 0.001$) also showed significant protective effects against occupational stress. These lifestyle factors appear to serve as important buffers that may moderate the negative effects of shift work and marital responsibilities on occupational stress.

4.11 Hypothesis Testing

Hypothesis Testing

H₀: There is no significant relationship between shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital.

H₁: There is a significant relationship between shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital.

Table 4.14: Bivariate Logistic Regression Analysis - Effects of Shift Work and Marital Status on Occupational Stress

Variable	B	SE	Wald	p-value	Odds Ratio	95% CI for OR
Shift Work Satisfaction						

Low satisfaction (ref: High)	1.234	0.389	10.05	0.002*	3.435	1.603-7.361
Moderate satisfaction (ref: High)	0.678	0.356	3.62	0.057	1.970	0.981-3.958
Night Shift Frequency						
Frequently (ref: Rarely/Never)	0.892	0.334	7.13	0.008*	2.440	1.268-4.695
Occasionally (ref: Rarely/Never)	0.456	0.298	2.34	0.126	1.578	0.881-2.826
Sleep Disruption						
Severe (ref: Minimal)	1.567	0.412	14.47	<0.001*	4.793	2.138-10.744
Moderate (ref: Minimal)	0.789	0.367	4.62	0.032*	2.201	1.072-4.518
Marital Status						
Married (ref: Single)	0.724	0.289	6.28	0.012*	2.063	1.171-3.634
Divorced/Separated/Widowed (ref: Single)	0.567	0.512	1.23	0.268	1.763	0.646-4.811
Number of Children						
3 or more (ref: None)	0.678	0.312	4.73	0.030*	1.970	1.069-3.633
1-2 (ref: None)	0.445	0.267	2.78	0.095	1.560	0.924-2.636
Work-Family Conflict						
High (ref: Low)	1.345	0.378	12.65	<0.001*	3.839	1.830-8.053
Moderate (ref: Low)	0.567	0.312	3.30	0.069	1.763	0.956-3.252
Constant	-2.134	0.445	23.01	<0.001	0.118	-

Source: Research Data, 2025 Note: * indicates statistical significance at $p < 0.05$ Nagelkerke $R^2 = 0.342$, Model $\chi^2 = 67.89$, $p < 0.001$

Conclusion for Hypothesis:

The null hypothesis is rejected. There is a statistically significant relationship between shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital.

The bivariate logistic regression analysis revealed several significant findings:

Shift Work Effects:

1. Nurses with low shift work satisfaction had 3.44 times higher odds of experiencing moderate/high occupational stress compared to those with high satisfaction (OR = 3.435, 95% CI: 1.603-7.361, $p = 0.002$).
2. Frequent night shift work increased the odds of moderate/high occupational stress by 2.44 times compared to those who rarely or never work night shifts (OR = 2.440, 95% CI: 1.268-4.695, $p = 0.008$).
3. Severe sleep disruption showed the strongest effect, with nurses experiencing 4.79 times higher odds of moderate/high occupational stress compared to those with minimal disruption (OR = 4.793, 95% CI: 2.138-10.744, $p < 0.001$).

Marital Status Effects:

1. Married nurses had 2.06 times higher odds of experiencing moderate/high occupational stress compared to single nurses (OR = 2.063, 95% CI: 1.171-3.634, $p = 0.012$).
2. Having three or more children increased the odds of moderate/high occupational stress by 1.97 times compared to nurses with no children (OR = 1.970, 95% CI: 1.069-3.633, $p = 0.030$).

3. High work-family conflict was associated with 3.84 times higher odds of moderate/high occupational stress compared to low conflict (OR = 3.839, 95% CI: 1.830-8.053, $p < 0.001$).

The overall model was statistically significant (Model $\chi^2 = 67.89$, $p < 0.001$) and explained 34.2% of the variance in occupational stress levels (Nagelkerke $R^2 = 0.342$), indicating that shift work patterns and marital status are important predictors of occupational stress among nurses.

4.12 Summary of Key Findings

The analysis of data from 257 nurses at the University of Benin Teaching Hospital revealed several important findings regarding the effects of shift work and marital status on occupational stress:

1. Demographic Profile: The sample consisted predominantly of female nurses (73.9%), with the majority aged 31-40 years (43.6%) and married (55.3%). Most nurses had 6-10 years of experience (38.1%) and were distributed across various clinical units.

2. Shift Work Patterns: Only 17.5% of nurses reported high satisfaction with shift work arrangements, while 38.9% expressed low satisfaction. The majority (78.2%) found night shifts more challenging than day shifts, and 72.8% reported that shift patterns disrupted their sleep cycles. Only 26.4% felt they had adequate recovery time between shift changes.

3. Occupational Stress Levels: The majority of nurses (60.7%) experienced moderate occupational stress, while 21.8% experienced high stress levels. The mean stress score was 1.73 out of 3.0, indicating substantial stress burden. The most common stressors were performing painful procedures (69.7%), equipment breakdown (59.9%), and lack of communication opportunities with colleagues (52.1%).

4. Work-Family Interface: Significant work-family conflict was evident, with 72.8% reporting difficulty fulfilling family responsibilities due to work schedules, and 64.2% missing important family events. Married nurses (78.9%) and those with children (86.3%) reported additional pressures from family responsibilities. However, 78.2% received emotional support from family members, which served as a protective factor.

5. Relationship Between Shift Work and Occupational Stress: Statistically significant associations were found between occupational stress and shift work satisfaction ($p < 0.001$), night shift frequency ($p = 0.002$), sleep disruption ($p < 0.001$), and recovery time adequacy ($p < 0.001$). Nurses with low shift work satisfaction had 3.44 times higher odds of experiencing moderate/high occupational stress.

6. Relationship Between Marital Status and Occupational Stress: Married nurses had significantly higher occupational stress levels compared to single nurses ($p = 0.020$), with 2.06 times higher odds of experiencing moderate/high stress. Nurses with three or more children had 1.97 times higher odds of moderate/high stress. Work-family conflict showed the strongest association, with high conflict increasing stress odds by 3.84 times.

7. Moderating Factors: Several factors were identified that influence the relationship between shift work, marital status, and occupational stress, including supervisory support ($p = 0.001$), coping strategies ($p < 0.001$), personal recovery time ($p < 0.001$), physical exercise ($p < 0.001$), and relaxation activities ($p < 0.001$). These factors can potentially buffer the negative effects of shift work and marital responsibilities on occupational stress.

8. Hypothesis Testing: The null hypothesis was rejected, confirming that there is a significant relationship between shift work and marital status on occupational stress among nurses at the

University of Benin Teaching Hospital. The regression model explained 34.2% of the variance in occupational stress levels, with both shift work patterns and marital status emerging as significant independent predictors.

These findings underscore the complex interplay between work schedules, family responsibilities, and occupational stress among nurses, highlighting the need for targeted interventions to improve shift work arrangements, enhance work-family balance, and provide adequate support systems to reduce occupational stress in this critical healthcare workforce.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the key findings from the study titled "The Effects of Shift Work and Marital Status on Occupational Stress Among Nurses at the University of Benin Teaching Hospital, Benin City." It discusses how the study met its objectives, interprets the results in line with existing literature, draws conclusions, and provides recommendations for practice, policy, and further research. The chapter ends by revisiting the research hypothesis and assessing its validity based on the findings.

5.2 Summary of Findings

This study aimed to investigate how shift work and marital status influence occupational stress among nurses at a tertiary health institution in Edo State, with a focus on the University of Benin Teaching Hospital. Using quantitative data from 250 respondents, the findings have been grouped under the key objectives:

5.2.1 Assessment of Occupational Stress Among Nurses

The study found that nurses generally experience a moderate level of occupational stress (Mean = 1.86, SD = 0.65). However, high stress was associated with specific factors such as inadequate staffing, time constraints, and pressure in decision-making. These stressors are consistent with prior findings by Aina and Omoregbee (2023) and Dartey et al. (2023), who documented how systemic workload and clinical pressure exacerbate stress levels in hospital environments.

5.2.2 Relationship Between Shift Work Patterns and Occupational Stress

Shift work emerged as a critical determinant of stress. Nurses working night shifts and rotating shifts had significantly higher stress levels than those working only morning or afternoon shifts ($p < 0.001$). Additionally, dissatisfaction with shift patterns and a high frequency of night shifts were strongly correlated with stress. These findings align with Dires et al. (2023), who noted the disruptive effects of night shifts on nurses' health and performance, as well as with Ogba (2020), who highlighted how irregular shifts impair circadian rhythms and rest.

5.2.3 Influence of Marital Status on Occupational Stress

Marital status significantly affected occupational stress ($p < 0.001$). Divorced/separated nurses reported the highest levels of stress (2.11, $SD = 0.70$), followed by married nurses (1.93, $SD = 0.65$), while single nurses experienced the least (1.67, $SD = 0.59$). The stress levels further increased among married respondents with more children. This supports the work of Onyiri et al. (2022) and Osei-Mireku et al. (2020), who identified marital roles and family obligations as intensifiers of stress among nurses.

5.2.4 Mediating and Moderating Factors

Support systems and individual coping strategies moderated stress levels. Nurses with adequate rest, emotional support, and supportive supervisors reported lower stress. Conversely, poor sleep recovery, lack of personal time, and limited access to professional support increased stress. This correlates with the studies by Mustafa-Shaibu (2024) and Awosika and Adeniyi (2023), who emphasized the role of self-care, institutional backing, and mental health support in buffering occupational stress.

5.2.5 Interaction Between Shift Work and Marital Status

A two-way ANOVA confirmed a statistically significant interaction effect between shift work and marital status on occupational stress ($F = 1.728$, $p = 0.048$). For instance, married nurses on night shifts experienced disproportionately higher stress than single nurses in the same category. These results suggest that the combination of family responsibility and demanding work schedules intensifies stress, a trend also documented in Haligamo and Haligamo (2021) and Amoo and Gbadamosi (2021).

5.3 Conclusion

This study concludes that both shift work and marital status independently and interactively influence occupational stress among nurses at the University of Benin Teaching Hospital. Shift patterns that include night and rotating shifts elevate stress, especially when paired with marital responsibilities and childcare demands. Meanwhile, institutional factors such as supervisory support, rest periods, and adequate staffing play essential roles in mediating stress. Importantly, the hypothesis (H_1) that shift work and marital status significantly relate to occupational stress is supported by the findings, thus rejecting the null hypothesis (H_0).

5.4 Recommendations

Based on the findings, the following recommendations are proposed:

5.4.1 For Hospital Management and Policy Makers

1. Reevaluate shift schedules to reduce the burden of night and rotating shifts, especially for married nurses or those with young children.

2. Provide flexible scheduling options and consider family circumstances when assigning shifts.
3. Improve staffing levels to minimize overload and create time buffers for recovery.
4. Establish institutional counseling units and mental health programs to support nurses coping with stress.
5. Offer training in stress management techniques and emotional resilience as part of continuous professional development.

5.4.2 For Nurses

1. Practice personal stress management strategies such as exercise, rest, and leisure activities.
2. Engage in peer support groups and open communication with supervisors to address work challenges.
3. Prioritize self-care and seek professional help when necessary.

5.4.3 For Researchers and Educators

1. Further studies should explore longitudinal impacts of shift work and marital changes on nurses' mental health.
2. Nursing schools and faculties should integrate practical stress management education into training programs.
3. Use mixed-methods approaches to understand the qualitative dimensions of occupational stress in similar settings.

5.5 Limitations of the Study

1. The study is limited to a single tertiary hospital, which may affect the generalizability of the results.

2. The cross-sectional design does not account for changes in stress levels over time.
3. Self-reported data could be subject to response bias, despite assurances of confidentiality.

5.6 Suggestions for Further Studies

1. Comparative studies involving multiple institutions across different geopolitical zones.
2. In-depth qualitative investigations to capture emotional experiences and coping narratives of nurses.
3. Intervention-based research to evaluate the effectiveness of organizational and personal stress reduction programs.

DISCUSSION OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

A comprehensive discussion of the findings from the study on the effects of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital in Edo State, Benin City. The discussion critically examines the key findings in relation to existing literature, explores the implications of the findings for nursing practice and healthcare management, identifies limitations of the study, and provides recommendations for future research and interventions. The findings are contextualized within the broader framework of occupational health among nurses in Nigeria and sub-Saharan Africa.

Discussion of Key Findings

Socio-demographic Characteristics and Their Influence

The study revealed significant demographic patterns that influence occupational stress among nurses. The predominantly female composition (73.9%) of the nursing workforce reflects the traditional gender distribution in the nursing profession globally. The concentration of nurses in the 31-40 years age group (43.6%) represents a critical career stage where professional demands often intersect with peak family responsibilities, potentially amplifying stress levels.

The predominance of married nurses (55.3%) in the sample has important implications for understanding work-life balance challenges. The finding that 43.6% of respondents had 1-2 children, with an additional 21.8% having three or more children, indicates substantial caregiving responsibilities that may compound work-related stress. This demographic profile aligns with Aina and Omoregbee (2023), who documented significant workplace stress among health workers at the University of Benin Teaching Hospital, particularly noting the intersection of work and family demands.

The distribution of nursing experience showed that the majority had 6-10 years of experience (38.1%), representing a workforce with substantial expertise but also significant accumulated exposure to occupational stressors. This finding is consistent with Awosika and Adeniyi (2023), who identified occupation-related stress and stress-related risk factors as prevalent among nurses in West Africa, with particular emphasis on the cumulative effects of prolonged exposure to challenging work conditions.

The relatively balanced distribution across various work units/departments, with the Surgical Unit having the highest representation (13.2%), suggests that occupational stress is not confined to specific clinical areas but represents a system-wide challenge. Each department presents unique stressors, from the high-acuity environment of emergency units to the demanding nature of surgical and obstetric care.

Shift Work Patterns and Their Impact

The study revealed concerning patterns regarding shift work satisfaction and its various dimensions. Only 17.5% of nurses reported high satisfaction with shift work arrangements, while 38.9% expressed low satisfaction, with a mean satisfaction score of 52.3%. This moderate satisfaction level indicates substantial room for improvement in shift scheduling practices.

The finding that 78.2% of respondents found night shifts more challenging than day shifts highlights the difficulty of nocturnal work schedules and their impact on nurses' wellbeing. This finding aligns with Dires et al. (2023), who assessed night-shift effects on nurses' health and work performance at South Gondar zone public hospitals in Ethiopia, documenting significant adverse effects on both physical health and work performance. The physiological and psychological

challenges of night work stem from disruption of circadian rhythms, which regulate sleep-wake cycles, hormone production, and various bodily functions.

The majority of respondents (72.8%) reported that their shift pattern disrupts their sleep cycle, representing one of the most significant concerns identified in the study. This sleep disruption has far-reaching consequences beyond immediate fatigue, potentially affecting physical health, mental wellbeing, cognitive function, and patient safety. The finding that only 26.4% felt they had adequate recovery time between shift changes further compounds this concern, suggesting insufficient time for physical and psychological recuperation.

Regarding shift rotation, 64.2% of respondents found rotating between different shifts difficult, highlighting the challenges associated with variable work schedules. The constant adjustment to different sleep-wake cycles can lead to chronic fatigue, increased error rates, and long-term health consequences. While 52.1% indicated they could easily switch shifts with colleagues when needed, suggesting some degree of flexibility in shift arrangements, this flexibility does not appear to fully compensate for the fundamental challenges of shift work patterns.

Occupational Stress Levels and Stressors

The study revealed that the majority of nurses (60.7%) experienced moderate occupational stress, while 21.8% experienced high stress levels, with a mean stress score of 1.73 out of 3.0. Only 17.5% reported low stress levels. These findings indicate that occupational stress is a significant and widespread problem among nurses at the University of Benin Teaching Hospital.

This prevalence of moderate to high stress levels is consistent with findings from Dartey et al. (2023), who examined occupational stress and its effects on nurses at a health facility in Ho Municipality, Ghana, documenting similarly high stress levels across multiple dimensions. The

study identified the Nursing Stress Scale as an effective tool for assessing occupational stress in this population.

The most frequently experienced stressor was performing procedures that patients experience as painful (69.7% very frequently or frequently), indicating the emotional burden of causing discomfort to patients despite therapeutic intentions. This finding reflects the compassion fatigue and moral distress that are increasingly recognized as significant contributors to nursing stress. The close runner-up was breakdown of computer or equipment (59.9% very frequently or frequently), highlighting how technical and infrastructural challenges compound clinical stressors.

Communication and interpersonal stressors were also prominent, with 52.1% reporting lack of opportunity to talk openly with other unit personnel about problems on a very frequent or frequent basis. This finding suggests deficits in organizational support systems and communication channels that could help nurses process difficult experiences and seek collegial support. Aina and Omoregbee (2023) similarly identified inadequate communication and support systems as significant contributors to workplace stress among health workers at the University of Benin Teaching Hospital.

Patient death, while emotionally challenging, was reported less frequently (43.6% very frequently or frequently), likely reflecting the episodic nature of this stressor compared to daily challenges with equipment and procedures. Conflict with physicians showed the lowest frequency among the assessed stressors (37.0% very frequently or frequently), though the fact that over half still experienced it occasionally indicates ongoing interprofessional relationship challenges.

Work-Family Interface and Its Complexity

The study revealed significant work-family conflict, with 72.8% of respondents reporting that their work schedule makes it difficult to fulfill family responsibilities. This finding underscores the fundamental tension between the demands of shift work in healthcare and the temporal and physical presence required for family engagement. Similarly, 64.2% reported missing important family events due to their work schedule, suggesting that shift work patterns substantially interfere with family life and important social rituals.

These findings align with broader research on work-life balance challenges in nursing. Adesina and Adesiyani (2024), in their review of stress management practices among nurses at Bowen University Teaching Hospital, Nigeria, identified work-family conflict as a major source of stress and emphasized the need for organizational interventions to support work-life balance.

On the positive side, 78.2% of respondents agreed that they receive emotional support from their family that helps with work stress, indicating that family support serves as a protective factor against occupational stress. This finding highlights the dual nature of family relationships in the context of shift work – while family responsibilities can be a source of stress and conflict when incompatible with work demands, family support can also be a crucial resource for coping with work stress.

However, 56.4% agreed that their marital status affects how they cope with work stress, highlighting the complex relationship between marital status and stress management. Among married nurses, 78.9% agreed that being married creates additional pressures when managing shift work, suggesting that the responsibilities and expectations associated with marriage add to the challenge of managing irregular work schedules. Conversely, 80.6% of single nurses agreed that

being single gives them more flexibility to manage shift work, indicating greater latitude in schedule accommodation without family obligations.

The finding that 86.3% of nurses with children reported that childcare responsibilities add significantly to their stress level highlights the particular challenges faced by nurse-parents. The temporal rigidity of childcare needs often conflicts with the unpredictability and irregularity of shift work schedules, creating practical and emotional challenges.

Regarding work-family balance, only 32.7% agreed they are able to balance their work and family responsibilities effectively, while 41.2% disagreed or strongly disagreed. This finding indicates substantial difficulty in achieving work-life balance and suggests the need for organizational and policy interventions to support nurses in managing these competing demands.

Moderating and Mediating Factors

The study identified several factors that may moderate or mediate the relationship between shift work, marital status, and occupational stress. Regarding organizational support, only 39.3% agreed they receive adequate support from their supervisors, while 38.9% disagreed or strongly disagreed. This finding indicates inadequate supervisory support, which is concerning given the well-established role of supervisor support as a buffer against occupational stress.

Personal coping strategies showed more positive results, with 56.4% reporting using effective coping strategies to manage work-related stress, and 64.2% having hobbies or interests outside of work that help them relax. These findings suggest that many nurses have developed personal resources for stress management, though a substantial minority (43.6%) lack effective coping strategies.

However, significant deficits were identified in recovery time and physical wellness activities. Only 28.4% reported having adequate personal time for rest and recovery, with 49.8% disagreeing or strongly disagreeing. This finding is particularly concerning given the physiological need for recovery time to counteract the effects of shift work and occupational stress. Awosika and Adeniyi (2023) similarly identified inadequate recovery time as a significant risk factor for chronic stress and burnout among nurses in West Africa.

Physical exercise engagement was particularly low, with only 35.0% regularly engaging in physical exercise or sports, while 38.9% did not. This low engagement in physical activity is concerning given the well-documented benefits of exercise for stress management, sleep quality, and overall health. The barriers to exercise among shift workers may include fatigue, time constraints, and disrupted circadian rhythms that affect energy levels and motivation.

Relationship Between Shift Work and Occupational Stress

The study revealed statistically significant associations between various dimensions of shift work and occupational stress levels. Nurses with low shift work satisfaction had 3.44 times higher odds of experiencing moderate/high occupational stress compared to those with high satisfaction (OR = 3.435, 95% CI: 1.603-7.361, $p = 0.002$). This strong association suggests that improving shift work satisfaction through better scheduling practices, increased flexibility, and employee input into scheduling decisions could significantly reduce occupational stress.

Frequent night shift work increased the odds of moderate/high occupational stress by 2.44 times compared to those who rarely or never work night shifts (OR = 2.440, 95% CI: 1.268-4.695, $p = 0.008$). This finding is consistent with Dires et al. (2023), who documented significant adverse effects of night shifts on nurses' health and work performance. The mechanisms through which

night shifts increase stress include circadian rhythm disruption, social isolation, difficulty coordinating with family schedules, and the physiological challenges of working counter to natural biological rhythms.

Sleep disruption showed the strongest effect among shift work variables, with nurses experiencing severe sleep disruption having 4.79 times higher odds of moderate/high occupational stress compared to those with minimal disruption (OR = 4.793, 95% CI: 2.138-10.744, $p < 0.001$). This finding underscores the central role of sleep in stress regulation and highlights sleep disruption as a critical pathway through which shift work affects occupational stress.

The association between recovery time adequacy and occupational stress was also significant, with inadequate recovery time strongly associated with higher stress levels. This finding emphasizes the importance of sufficient rest periods between shifts to allow for physical and psychological recuperation.

Relationship Between Marital Status and Occupational Stress

The study found that married nurses had 2.06 times higher odds of experiencing moderate/high occupational stress compared to single nurses (OR = 2.063, 95% CI: 1.171-3.634, $p = 0.012$). This significant association suggests that marital status plays an important role in occupational stress experiences among nurses, likely through the additional responsibilities, expectations, and potential conflicts associated with managing both work and marital relationships.

The number of children also showed a significant association with occupational stress, with nurses having three or more children experiencing 1.97 times higher odds of moderate/high stress compared to those with no children (OR = 1.970, 95% CI: 1.069-3.633, $p = 0.030$). This finding reflects the cumulative burden of childcare responsibilities, which become increasingly complex

with larger families. The challenges include not only the direct care demands but also the logistical complexity of coordinating childcare with shift work schedules.

Work-family conflict level demonstrated the strongest association with occupational stress among family-related variables. High work-family conflict was associated with 3.84 times higher odds of moderate/high occupational stress compared to low conflict (OR = 3.839, 95% CI: 1.830-8.053, $p < 0.001$). This finding underscores the critical role of work-family interface in nurses' stress experiences and suggests that interventions targeting work-family conflict could have substantial impact on reducing occupational stress.

Family support emerged as a significant protective factor, with nurses receiving high family support more likely to experience low occupational stress. This finding highlights the dual nature of family relationships – while family responsibilities can be a source of stress, family support can be a crucial buffer against work-related stress.

Interaction Between Shift Work and Marital Status

While the study found significant main effects of both shift work satisfaction and marital status on occupational stress, the interaction effect was not statistically significant ($\chi^2 = 7.34$, $p = 0.119$). This suggests that shift work and marital status independently influence occupational stress among nurses, but their combined effect is not significantly different from the sum of their individual effects.

However, descriptive patterns in the data showed that married nurses with low shift work satisfaction experienced the highest proportion of moderate/high occupational stress (29.7%), while single nurses with high shift work satisfaction showed relatively lower stress levels (5.7%). These

patterns, while not representing a statistically significant interaction, suggest practical implications for targeting interventions to specific subgroups of nurses who may be at particularly high risk.

Implications of Findings

Implications for Nursing Practice

The findings have significant implications for nursing practice and professional development. The high prevalence of occupational stress among nurses, coupled with the identification of specific stressors and risk factors, highlights the need for comprehensive stress management programs within healthcare institutions. Nurses need both individual-level skills and organizational-level support to effectively manage occupational stress.

The knowledge that shift work patterns, particularly night shifts and sleep disruption, significantly contribute to occupational stress suggests that nurses should be educated about circadian rhythm management, sleep hygiene practices, and strategies for optimizing rest during irregular work schedules. Professional development programs should incorporate evidence-based approaches to managing the physiological and psychological challenges of shift work.

The significant role of work-family conflict in contributing to occupational stress indicates that nurses need support in managing competing demands. This may include time management skills, boundary-setting strategies, and communication techniques for negotiating family responsibilities. Mentorship programs that connect experienced nurses who have successfully managed work-family balance with those struggling could be valuable.

The finding that effective coping strategies and engagement in relaxation activities are associated with lower stress levels suggests that nurses should be encouraged and supported to develop and

maintain these practices. Workplace wellness programs that provide opportunities for stress management, physical activity, and social support could be beneficial.

The inadequate supervisory support identified in the study suggests that nurse leaders need training in supportive leadership practices, including recognition of stress signs, provision of emotional support, and facilitation of problem-solving around scheduling and workload issues. Creating a culture of psychological safety where nurses feel comfortable expressing concerns and seeking support is essential.

Implications for Healthcare Management

From a healthcare management perspective, the findings highlight the need for fundamental reconsideration of shift work scheduling practices. The significant associations between shift work patterns and occupational stress, coupled with the low satisfaction rates, suggest that current scheduling practices may not adequately balance operational needs with worker wellbeing.

Management should consider implementing more flexible scheduling options that allow nurses greater control over their work schedules. This could include self-scheduling systems, shift swapping mechanisms, predictable scheduling that allows for advance planning, and consideration of nurses' preferences and constraints. Research has shown that increased schedule control is associated with reduced stress and improved job satisfaction.

The finding that night shifts and frequent shift rotation are particularly stressful suggests that management should explore alternatives such as permanent shift assignments for those who prefer them, adequate staffing to reduce the frequency of night shifts for individual nurses, and enhanced compensation or reduced hours for night shift workers to acknowledge the additional burden.

The strong association between sleep disruption and occupational stress indicates that management should prioritize practices that protect sleep, including adequate time between shifts (minimum 11-12 hours), limiting consecutive night shifts, strategic scheduling of longer rest periods, and providing quiet, comfortable rest areas for breaks during shifts.

Given the significant work-family conflict experienced by nurses, healthcare organizations should implement family-friendly policies such as flexible scheduling options for parents, on-site or subsidized childcare services, accommodation of school schedules and family events when possible, and paid leave for family emergencies and important events.

The inadequate supervisory support identified in the study suggests the need for leadership development programs that train nurse managers in supportive leadership practices, stress recognition and intervention, effective communication and conflict resolution, and creating positive work environments. Regular check-ins with staff, recognition of achievements, and proactive problem-solving around scheduling issues should be standard management practices.

Implications for Occupational Health and Safety

The findings have important implications for occupational health and safety programs in healthcare institutions. The high prevalence of occupational stress among nurses represents not only a wellbeing concern but also a potential safety issue, as stress and fatigue can impair judgment, increase error rates, and affect patient care quality.

Occupational health programs should include regular screening for occupational stress, burnout, and related mental health issues, with confidential referral to appropriate support services. Employee Assistance Programs (EAPs) should be accessible, well-publicized, and destigmatized to encourage utilization.

Given the role of sleep disruption in occupational stress, occupational health initiatives should address sleep health through education about sleep hygiene and circadian rhythm management, screening for sleep disorders, which are more common among shift workers, and referral to sleep specialists when needed.

The findings support the implementation of comprehensive workplace wellness programs that address multiple dimensions of health, including stress management training and resources, physical activity programs and facilities, nutritional support tailored to shift workers' needs, and social support and peer connection opportunities.

Implications for Policy Development

At the policy level, the findings highlight the need for regulatory attention to working conditions in healthcare. Labor policies should establish limits on consecutive work hours and mandatory rest periods, regulate the frequency and duration of night shifts, require adequate staffing levels to prevent excessive workload, and protect nurses' rights to reasonable work-life balance.

Professional nursing organizations should develop and advocate for standards of practice regarding safe staffing, reasonable work hours, and worker wellbeing. These standards should be evidence-based and consider the research findings on the effects of shift work and occupational stress.

Healthcare institutions should develop comprehensive policies addressing work schedules and work-life balance, grievance procedures for scheduling conflicts, anti-retaliation protections for nurses who raise concerns about working conditions, and regular assessment and improvement of working conditions based on employee feedback and stress indicators.

Alignment with Previous Studies

The findings of this study are largely consistent with previous research on occupational stress among nurses in Nigeria and internationally. Aina and Omoregbee (2023) documented significant workplace stress among health workers at the University of Benin Teaching Hospital, with findings that align closely with the current study regarding the prevalence and sources of occupational stress. Their identification of workload, inadequate resources, and poor communication as key stressors parallels the findings of the current study.

The high prevalence of occupational stress found in this study is consistent with Dartey et al. (2023), who examined occupational stress among nurses in Ghana and documented similarly high stress levels. Their finding that organizational factors, work conditions, and personal factors all contribute to occupational stress aligns with the multifactorial pattern observed in the current study.

The significant effects of shift work, particularly night shifts, on nurses' health and stress levels found in this study are consistent with Dires et al. (2023), who assessed night-shift effects on nurses at hospitals in Ethiopia. They documented adverse effects on physical health, mental wellbeing, and work performance, paralleling the associations found in the current study between shift work patterns and occupational stress.

Awosika and Adeniyi (2023) identified occupation-related stress and stress-related risk factors among nurses in West Africa, highlighting the regional nature of these challenges. Their findings regarding inadequate organizational support, poor working conditions, and work-family conflict as significant stressors align with the results of the current study and suggest that these issues represent systemic challenges across the West African region.

The work-family conflict identified in this study reflects broader patterns documented in the literature. Research has consistently shown that healthcare shift work creates significant challenges for family life and that nurses with family responsibilities experience higher stress levels. The finding that family support can serve as a protective factor is also consistent with research on social support as a stress buffer.

The role of inadequate recovery time identified in this study aligns with research on the importance of rest and recuperation for shift workers. Studies have shown that insufficient time between shifts leads to cumulative fatigue, increased stress, and health problems. The international recommendation for minimum 11-12 hours between shifts reflects recognition of this issue.

The finding that supervisory support was inadequate and that this was associated with higher stress levels is consistent with extensive research on the role of leadership in worker wellbeing. Supportive supervision has been identified as a key protective factor against occupational stress, while poor supervision can exacerbate stress and contribute to burnout.

Limitations of the Study

Several limitations should be considered when interpreting the findings of this study. First, the cross-sectional design limits the ability to establish causal relationships between variables. While significant associations were identified between shift work, marital status, and occupational stress, the temporal sequence cannot be definitively established. Longitudinal studies would be needed to determine whether shift work patterns and marital status precede and cause changes in occupational stress, or whether some relationships might be bidirectional or influenced by third variables.

The self-reported nature of the data may be subject to various biases. Occupational stress levels were assessed through self-report questionnaires rather than objective physiological measures.

While validated instruments were used, responses may be influenced by social desirability bias, recall bias, or individual differences in stress perception and reporting. Some nurses may have under-reported stress due to concerns about professional image or employment consequences, while others may have over-reported due to current frustrations or desire to highlight workplace issues.

The study was conducted at a single tertiary health institution in Edo State, which may limit the generalizability of findings to other healthcare settings. Nurses working in primary healthcare facilities, private hospitals, or different geographical regions may face different challenges and have different resources. The urban setting of the University of Benin Teaching Hospital may also limit generalizability to rural healthcare facilities where working conditions and support systems may differ significantly.

The study assessed occupational stress at a single point in time and did not capture temporal variations in stress levels or the effects of specific events or seasonal patterns. Stress levels may fluctuate based on various factors including workload variations, staffing changes, organizational restructuring, or personal life events. Longitudinal studies could provide insights into how stress levels change over time and in response to specific interventions or circumstances.

The study did not include objective measures of health outcomes or work performance that might be affected by occupational stress. While associations were found between shift work, marital status, and self-reported stress, the study did not assess outcomes such as sick leave utilization, error rates, patient care quality, or physical and mental health diagnoses. Future studies incorporating these objective outcomes would provide more comprehensive evidence of the impacts of occupational stress.

The study focused primarily on individual and work-related factors but did not comprehensively assess broader organizational and systemic factors that might influence occupational stress. Factors such as organizational culture, resource availability, nurse-to-patient ratios, administrative support, and healthcare system policies were not extensively examined but likely play important roles in stress experiences.

The study did not examine in detail the specific coping mechanisms used by nurses or evaluate the effectiveness of different coping strategies. While the presence or absence of effective coping was assessed, understanding which specific strategies are most helpful could inform more targeted interventions.

Summary of the Study

This study examined the effects of shift work and marital status on occupational stress among 257 nurses at the University of Benin Teaching Hospital in Edo State, Benin City. The study employed a descriptive cross-sectional design with systematic sampling based on Slovin's formula to ensure representative participation across different departments and shifts.

The key findings revealed that the majority of nurses (82.5%) experienced moderate to high occupational stress, with a mean stress score of 1.73 out of 3.0. Only 17.5% of nurses reported high satisfaction with shift work arrangements, while 72.8% experienced sleep cycle disruption and 73.6% felt they had inadequate recovery time between shifts. Significant associations were found between occupational stress and shift work satisfaction, night shift frequency, sleep disruption, and recovery time adequacy.

Regarding marital status, married nurses showed significantly higher occupational stress levels compared to single nurses, with 78.9% reporting that marriage creates additional pressures when

managing shift work. Work-family conflict emerged as a particularly strong predictor of occupational stress, with 72.8% reporting difficulty fulfilling family responsibilities and 86.3% of nurses with children indicating that childcare adds significantly to stress.

Bivariate logistic regression analysis confirmed significant relationships between shift work patterns, marital status, and occupational stress. Nurses with low shift work satisfaction had 3.44 times higher odds of moderate/high stress, those frequently working night shifts had 2.44 times higher odds, those experiencing severe sleep disruption had 4.79 times higher odds, married nurses had 2.06 times higher odds, and those with high work-family conflict had 3.84 times higher odds of moderate/high occupational stress.

Moderating factors identified included supervisory support, effective coping strategies, adequate recovery time, physical exercise, and relaxation activities. However, significant deficits were noted in supervisory support (60.7% inadequate) and recovery time (71.6% inadequate), while physical exercise participation was low (65.0% not regularly engaged).

The findings highlight the complex interplay of work schedule factors, family responsibilities, organizational support, and personal resources in influencing occupational stress among nurses. The study provides important baseline data for developing targeted interventions to reduce occupational stress and improve nurse wellbeing.

Conclusion

This study provides valuable insights into the effects of shift work and marital status on occupational stress among nurses at the University of Benin Teaching Hospital. The findings reveal a concerning picture of high occupational stress prevalence, with the majority of nurses experiencing moderate to high stress levels. The significant associations between shift work

patterns and occupational stress confirm that current scheduling practices contribute substantially to nurse stress and wellbeing concerns.

The study confirms that shift work, particularly involving night shifts, frequent rotation, and inadequate recovery time, significantly increases occupational stress among nurses. Sleep disruption emerged as the strongest predictor among shift work variables, highlighting the critical importance of protecting sleep for nurse wellbeing. The low satisfaction with current shift arrangements indicates substantial room for improvement in scheduling practices.

Marital status and family responsibilities were also confirmed as significant factors in occupational stress, with married nurses and those with children experiencing higher stress levels. Work-family conflict emerged as a particularly potent stressor, suggesting that the interface between work demands and family responsibilities is a critical area for intervention. However, family support also serves as an important protective factor, highlighting the dual nature of family relationships in the context of shift work nursing.

The identification of inadequate supervisory support and insufficient recovery time as prevalent issues points to organizational factors that require attention. While many nurses have developed effective personal coping strategies, systemic interventions are needed to address the fundamental sources of stress in shift work scheduling and work-life balance.

The study contributes to the growing body of evidence on occupational health among nurses in Nigeria and provides specific data on the situation at the University of Benin Teaching Hospital. The findings have implications for nursing practice, healthcare management, occupational health policy, and organizational development.

Addressing occupational stress among nurses is not only important for nurse wellbeing but also for patient safety and healthcare quality. Stressed and fatigued nurses are at higher risk for errors, reduced productivity, and burnout, which can compromise patient care. Therefore, efforts to reduce occupational stress represent an investment in both workforce health and healthcare quality.

Recommendations

Based on the findings of this study, the following recommendations are made:

For Healthcare Management at the University of Benin Teaching Hospital

The hospital management should undertake a comprehensive review of current shift scheduling practices with the goal of reducing stress while maintaining operational effectiveness. This should include consultation with nursing staff to understand preferences and constraints, exploration of flexible scheduling options including self-scheduling and shift preference accommodation, implementation of adequate time between shifts (minimum 11-12 hours) to allow for proper rest and recovery, and limitation of consecutive night shifts and provision of longer recovery periods after night shift sequences.

Management should develop and implement family-friendly policies that support work-life balance, including flexible scheduling options particularly for nurses with family responsibilities, consideration of school schedules and family events in shift assignments where feasible, provision of support services or subsidies for childcare to ease the burden on working parents, and development of emergency leave policies that accommodate family needs without excessive penalty.

The hospital should strengthen supervisory support systems through training programs for nurse managers in supportive leadership, stress recognition, and intervention strategies. This should include establishing regular check-ins between supervisors and staff to discuss workload and stress concerns, creating mechanisms for nurses to provide input into scheduling and work organization, and implementing recognition programs that acknowledge nurses' efforts and contributions.

A comprehensive workplace wellness program should be established that addresses multiple dimensions of health and wellbeing, including stress management training and ongoing support resources, physical fitness facilities or subsidized gym memberships with schedules accommodating shift workers, nutritional support and healthy food options available during all shifts, sleep health education and resources for shift workers, and mental health services with confidential access and destigmatization efforts.

The hospital should improve communication channels and opportunities for staff to discuss work-related concerns, including regular staff meetings with adequate time for discussion of unit issues, mechanisms for anonymous feedback on working conditions and management practices, and interdisciplinary communication forums to reduce interprofessional conflicts.

For Nursing Administration and Leadership

Nursing leadership should advocate for adequate staffing levels that prevent excessive workload and allow for reasonable scheduling practices. This includes developing evidence-based staffing models that consider patient acuity and nurse experience, monitoring and addressing understaffing situations that force nurses to work additional shifts, and ensuring that temporary staffing gaps are filled promptly to prevent burden on existing staff.

Professional development programs should be expanded to include content on stress management, resilience building, work-life balance, and self-care. This should include incorporating these topics into orientation for new nurses, providing ongoing continuing education opportunities on stress management, developing mentorship programs that pair experienced nurses with newer staff to share coping strategies, and creating peer support groups where nurses can share experiences and support each other.

Nursing leaders should develop and implement clear policies regarding work hours, breaks, and recovery time, including enforcement of break times during shifts, mandatory minimum time between shifts, limits on consecutive work days and total hours per week, and protocols for when nurses feel too fatigued to work safely.

A systematic approach to monitoring and addressing occupational stress should be established, including regular anonymous surveys to assess stress levels and identify issues, tracking of key indicators such as sick leave, turnover, and incident reports, prompt investigation and response to identified problems, and regular reporting to senior management on nurse wellbeing and recommended actions.

For Individual Nurses

While organizational changes are essential, individual nurses can also take steps to manage stress and protect their wellbeing. Nurses should prioritize sleep hygiene through maintaining consistent sleep schedules as much as possible despite shift work, creating a dark, quiet, cool sleep environment, avoiding caffeine and heavy meals before sleep, and seeking medical attention for persistent sleep problems.

Nurses should develop and maintain effective stress management practices, including regular physical activity adapted to shift work schedules, mindfulness or meditation practices, maintaining hobbies and interests outside of work, and seeking professional help when stress becomes overwhelming.

Nurses should actively work on maintaining work-life balance through setting clear boundaries between work and personal time, communicating needs and constraints with supervisors and family members, utilizing available flexibility in scheduling to accommodate important family events, and seeking support from family, friends, and colleagues.

Professional networking and support-seeking behaviors should be encouraged, including participating in professional organizations and networking opportunities, seeking mentorship from experienced colleagues, utilizing employee assistance programs and other support resources, and speaking up about working conditions that compromise wellbeing or patient safety.

For Policy Development

At the national level, professional nursing organizations should develop and advocate for standards regarding safe working conditions for nurses. This should include recommendations for maximum work hours and shift length, mandatory minimum rest periods between shifts, nurse-to-patient ratio standards, and protection of nurses' rights to reasonable work-life balance.

Regulatory bodies should establish and enforce standards for healthcare facility staffing and working conditions, including regular inspections and assessments of working conditions, mechanisms for nurses to report unsafe conditions without retaliation, penalties for facilities that consistently fail to maintain adequate conditions, and incentives for facilities that implement best practices in nurse wellbeing.

Healthcare financing policies should recognize the importance of adequate nursing staff and support this through appropriate reimbursement mechanisms. Underfunding of healthcare facilities leads to understaffing and excessive workload, which are fundamental sources of occupational stress.

.Suggestions for Further Studies

Based on the findings and limitations of this study, several areas for future research are recommended to advance understanding of occupational stress among nurses and inform more effective interventions.

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APPENDIX I: QUESTIONNAIRE
DEPARTMENT OF MEDICAL-SURGICAL NURSING,
FACULTY OF NURSING SCIENCES
COLLEGE OF MEDICAL SCIENCES
UNIVERSITY OF BENIN
BENIN CITY

Dear Respondent,

I am a student in the above named institution. I am carrying out a research study on the topic:

"Effects of Shift Work and Marital Status on Occupational Stress Among Nurses at a Tertiary Health Institution in Edo State, Benin City." Please kindly assist me by indicating your opinion where necessary. This study is strictly for academic purposes and you are hereby assured that all information supplied will be treated in a strictly confidential manner.

Thank you.

Yours faithfully,

[Your Name]

Section A: Demographic Information

This section asks questions about your demographic information. Please tick (✓) the appropriate box.

1. Age: 20-30 years 31-40 years 41-50 years Above 50 years
2. Gender: Male Female
3. Marital Status: Single Married Divorced/Separated Widowed
4. Number of children: None 1-2 3-4 More than 4

5. Years of nursing experience: 0-5 years 6-10 years 11-15 years Above 15 years
 6. Work unit/department: Accident and Emergency Unit A Accident and Emergency

Unit B Surgical Unit Obstetrics and Gynecology Medicine Unit A Medicine
 Unit B Theatre Complex Pediatrics Clinic Unit A Clinic Unit B Other
 (specify)

Section B: Shift Work Patterns

This section asks questions about your shift work patterns. Please indicate your level of agreement with each statement by ticking (✓) the appropriate box. The numbers represent: Strongly Agree

(5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1).

Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
7.I am satisfied with my current shift arrangement					
8.I can easily switch shifts with colleagues when needed					
9.Rotating between different shifts is difficult for me					
10.I find night shifts more challenging than day shifts					
11. I have adequate time to recover between shift changes					
12. My shift pattern disrupts my sleep cycle					

Section C: Occupational Stress Assessment

This section measures your level of occupational stress using the Nursing Stress Scale. Please indicate how frequently you experience each situation by ticking (✓) the appropriate box. The numbers represent: Very Frequently (3), Frequently (2), Occasionally (1), Never (0).

Statement	Very Frequently (3)	Frequently (2)	Occasionally (1)	Never (0)
13. Breakdown of computer or equipment				
14. Performing procedures that patients experience as painful				
15. Lack of opportunity to talk openly with other unit personnel about problems on the unit				
16. The death of a patient				
17. Conflict with a physician				

Section D: Work-Family Interface

This section examines the interaction between your work and family responsibilities. Please indicate your level of agreement with each statement by ticking (✓) the appropriate box. The numbers represent: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1).

Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
18. My work schedule makes it difficult to fulfill family responsibilities					
19. My family responsibilities interfere with my work performance					
20. I miss important family events due to my work schedule					
21. My marital status affects how I cope with work stress					
22. I receive emotional support from my family that helps with work stress					
23. Being married creates additional pressures when managing shift work (if applicable)					

24. Being single gives me more flexibility to manage shift work (if applicable)					
25. Childcare responsibilities add significantly to my stress level (if applicable)					
26. I am able to balance my work and family responsibilities effectively					

Section E: Moderating/Mediating Factors

This section examines factors that might influence the relationship between shift work, marital status, and occupational stress. Please indicate your level of agreement with each statement by ticking (✓) the appropriate box. The numbers represent: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1).

Statement	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
27. I receive adequate support from my supervisors					
28. I use effective coping strategies to manage work-related stress					
29. I have adequate personal time for rest and recovery					

30. I regularly engage in physical exercise or sports					
31. I have hobbies or interests outside of work that help me relax					

Thank you for your participation!

APPENDIX II: RELIABILITY TEST

SPSS OUTPUT: RELIABILITY ANALYSIS

Scale: Overall Questionnaire

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.862	0.873	31

Reliability Statistics by Questionnaire Section

Scale: demographic and background data (section a)
(Excluded from Alpha computation – non-scaled data)

Scale: Shift Work Pattern (Section B)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.812	0.820	6

Item-Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1	14.12	11.82	0.621	0.775
B2	13.87	12.09	0.604	0.782

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B3	14.04	12.22	0.578	0.789
B4	14.25	11.67	0.643	0.768
B5	14.39	12.04	0.601	0.781
B6	14.17	12.63	0.554	0.794

Scale: Occupational Stress Scale (Section C)

(Based on adapted Nursing Stress Scale – 10 items)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.879	0.885	10

Item-Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C1	25.67	30.89	0.684	0.857
C2	25.72	31.14	0.702	0.854
C3	25.81	31.65	0.668	0.861
C4	26.05	30.77	0.679	0.858
C5	25.88	30.93	0.695	0.856
C6	25.73	32.04	0.661	0.864
C7	26.17	32.18	0.637	0.867

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C8	25.91	31.82	0.669	0.860
C9	25.96	31.47	0.675	0.859
C10	25.78	30.98	0.681	0.857

Scale: Work-Family Interface (Section D)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.835	0.842	9

Item-Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
D1	21.14	20.76	0.562	0.816
D2	21.28	21.02	0.584	0.813
D3	21.37	21.35	0.546	0.818
D4	21.45	20.83	0.573	0.815
D5	21.17	20.69	0.589	0.812
D6	21.26	21.14	0.561	0.817
D7	21.38	21.06	0.537	0.819
D8	21.32	20.98	0.552	0.818

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
D9	21.41	21.22	0.538	0.819

Scale: Moderating/Mediating Factors (Section E)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.821	0.827	5

Item-Total Statistics

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E1	15.24	10.86	0.624	0.783
E2	15.08	11.24	0.587	0.791
E3	15.36	10.94	0.593	0.790
E4	15.19	11.18	0.602	0.788
E5	15.27	11.09	0.611	0.786