

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**



**WORK-RELATED STRESS AND PREVALENCE OF HYPERTENSION AMONG
FEMALES WORKING IN SELECTED FOREIGN BANKS IN THE GREATER ACCRA
REGION, GHANA.**

BY

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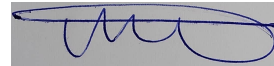
DECLARATION

I, Faith Baah, declare that this dissertation is my original work and conducted under the supervision of Dr. Ibrahim Issah. This work has not been submitted for any degree or academic award at any institution. All sources of information and references used in this study have been properly acknowledged.



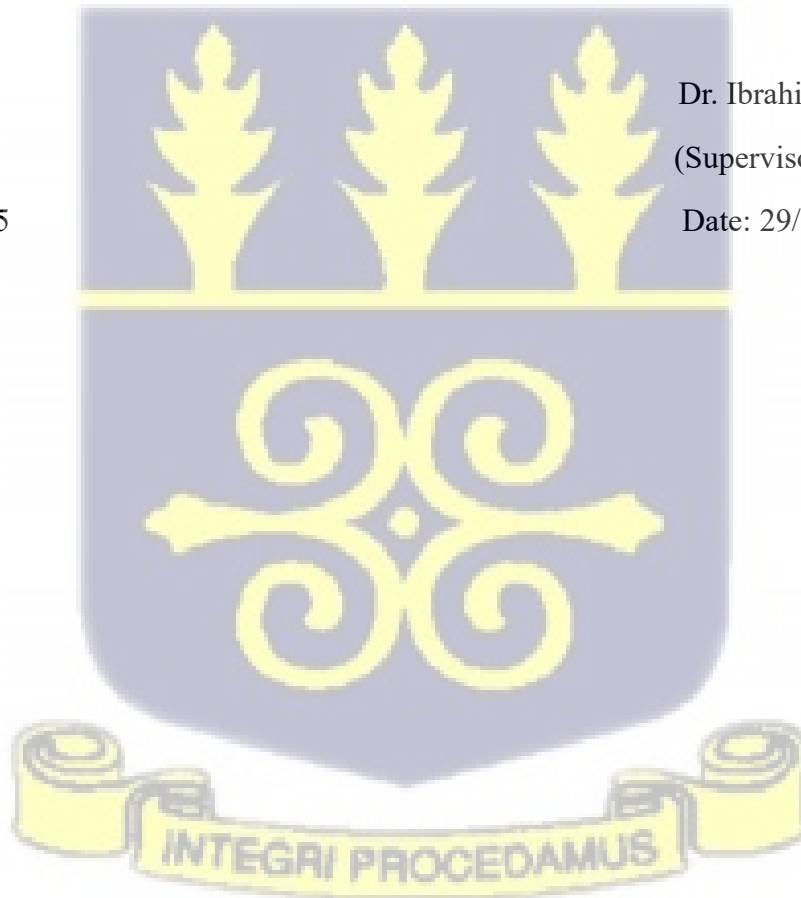
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DEDICATION

I dedicate this work to Almighty God, whose grace, wisdom, and strength have guided me through this academic journey.

I also dedicate this dissertation to my beloved husband, Mr. Gabriel Baah, for his sacrifice, unwavering support, and encouragement.



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First and foremost, I give all glory and honor to Almighty God for His grace that has been my pillar of support, enabling me to overcome challenges and successfully complete this work.

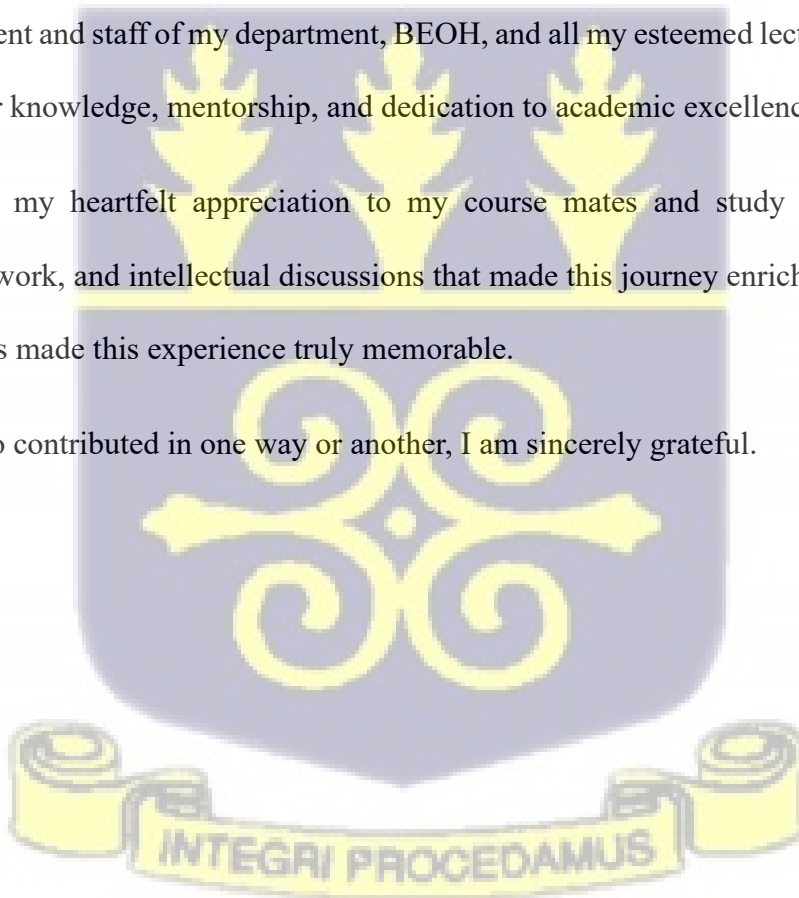
I sincerely appreciate my supervisor, Dr. Ibrahim Issah, for stepping in to supervise me when needed. His dedicated guidance, constructive feedback, and continuous support, has been instrumental in shaping this research.

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To everyone who contributed in one way or another, I am sincerely grateful.



ABSTRACT

Background: The increasing prevalence of hypertension is a significant global concern, particularly among working populations experiencing high levels of stress. The banking sector is characterized by high job demands, intense workloads, and tight deadlines, which often expose employees to considerable stress. Despite these challenges, there is limited data on the prevalence and association between work-related stress and hypertension among vulnerable groups like women in this industry.

Aim/Objective: This study aimed to investigate the relationship between work-related stress and prevalence of hypertension among females working in selected foreign banks in Accra, Ghana.

Methods: The study employed a quantitative cross-sectional design to investigate work-related stress and prevalence of hypertension among 228 female employees working in selected foreign banks in Accra, Ghana. A semi-structured questionnaire was used to assess information on demographics, work-related stress levels, lifestyle factors, and hypertension status. Hypertension and health status were assessed, while work-related stress levels were evaluated using a standardized stress scale (HSE management standard indicator tool). A multivariate logistic regression model was used to examine the relationship between work-related stress and prevalence of hypertension. STATA® Version 18 was used for all statistical analyses. Ethical approval was obtained from the Noguchi Memorial Institute for Medical Research.

Results: The study examined the relationship between work-related stress and hypertension among female employees in selected foreign banks in Accra, Ghana. The findings revealed that 26% of respondents had been diagnosed with hypertension, with 46.67% of cases diagnosed within the past year. 45.6% of respondents experienced high stress and logistic regression analysis showed

that these individuals were significantly more likely to develop hypertension (AOR = 2.10, 95% CI: 1.02–4.32, $p = 0.043$). Each additional year of age increased the odds of hypertension by 5% (AOR = 1.05, $p = 0.021$), while working more than 40 hours per week was also a significant risk factor (AOR = 1.60, $p = 0.029$). Using the HSE management standards indicator tool, the study identified that urgent action was needed for control, relationship, and change categories while “doing well” was indicated in the organizational role category.

Conclusion: This study highlights a significant association between work-related stress and hypertension among female employees in foreign banks. High stress levels, longer job tenure, and extended work hours were key risk factors for hypertension. Additionally, lifestyle factors such as low physical activity, poor dietary habits, and insufficient sleep may contribute to overall health risks. These findings underscore the need for workplace interventions to reduce stress and promote employee well-being.

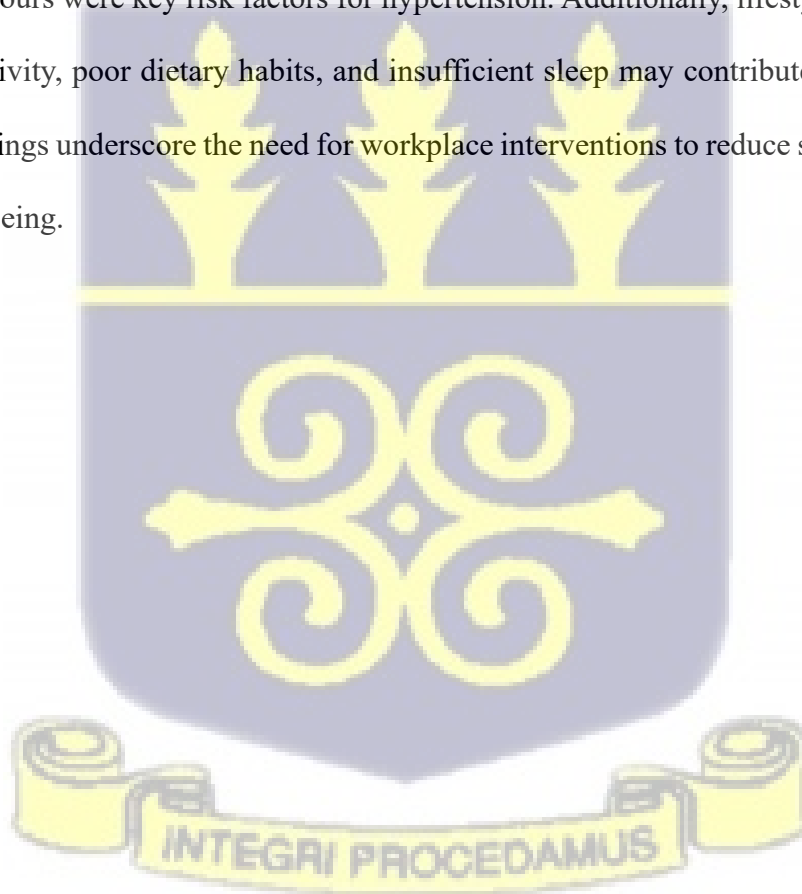


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LIST OF ABBREVIATIONS

WHO	World Health Organization
SD	Standard Deviation
IMF	International Monetary Fund
SES	Socio-Economic Status
HSE	Health and Safety Executive
SME	Small and Medium-sized Enterprises
UK	United Kingdom
HR	Human Resource
PhD	Doctor of Philosophy
CI	Confidence Interval
OR	Odds Ratio
AOR	Adjusted Odds Ratio



CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

In Ghana's rapidly evolving financial sector, particularly in Accra where most foreign banks are concentrated, female employees face unique occupational and social challenges. The banking industry is known for long working hours, strict customer service expectations, high sales targets, and sedentary office routines (Ismail et al., 2013). Reports indicate that most female bankers in Ghana work beyond the standard 40-hour week, with high customer demands and performance targets being common sources of stress (Puni et al., 2018; Kissi-Abrokwah et al., 2015). These demands, combined with cultural and domestic responsibilities disproportionately borne by women, create dual role strain that amplifies stress levels (Darko-Asumadu et al., 2018; Buame, 2018). According to The Global Economy (2024), women constitute about 48% of Ghana's labour force, yet in professional sectors such as banking, they often remain underrepresented in leadership positions, a factor that may exacerbate workplace stress (Amakye et al., 2021).

Work-related stress, broadly defined as "the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities, and which challenge their ability to cope" (Leka, Griffiths, & Cox, 2003, p. 3) is now recognized as a pressing occupational health concern globally (Sime et al., 2022). A study in Ghana by Segbenya & Hatsu (2022) found that workers in the banking sector experienced high levels of work-related stress. Some common stressors include long working hours, role ambiguity, customer complaints, strict deadlines, and job insecurity (Yeboah-Kordee et al. 2018). These stressors map onto the UK Health and Safety Executive (HSE) "management standard indicators," which emphasize job demands, control, managerial support, peer support, role clarity, relationships, and organizational change as

key determinants of workplace stress (HSE, 2023). Chronic exposure to these stressors has its consequences for health and productivity in high-demand roles like banking. These can manifest through absenteeism, staff turnover, reduced productivity, reduced job satisfaction (Khamisa et al., 2015; Ivandić et al., 2017; Tomei, 2017), and adverse health outcomes such as hypertension (Ebert et al., 2016; Uba, 2023).

Hypertension, defined as persistently elevated blood pressure, is a major public health challenge in Ghana, affecting an estimated 30.3% of adults and 30.1% of adult women (Atibila et al., 2021). Alarming, awareness and control levels remain low (Awuah et al., 2014; Bosu & Bosu, 2021). A study of Accra bankers found that long hours and heavy workloads were linked to higher blood pressure levels, confirming that bank workers constitute a high-risk occupational group (Ismail et al., 2013; Shitu & Kassie, 2021).

Women in banking may be disproportionately vulnerable because beyond occupational pressures, Ghanaian women often juggle professional responsibilities alongside cultural expectations of childcare, household duties, and extended family obligations, which increase vulnerability to stress-related health outcomes (Oppong, 2019). Globally, psychosocial stress is recognized as a significant risk factor for hypertension, alongside lifestyle factors such as obesity, sedentary behavior, poor diet, smoking, and alcohol consumption (Krajnak, 2014; Liu et al., 2017). However, in contexts like Ghana, the compounding effect of workplace stressors and gendered responsibilities has yet to be fully examined.

Given this context, this study investigates the relationship between work-related stress and hypertension prevalence among female employees in selected foreign banks in the Greater Accra Region. By examining stress levels, identifying stress-related hypertension risks, and considering

the role of workplace indicators, the study seeks to generate evidence that can inform both employee wellness initiatives and organizational strategies in Ghana's banking industry.

Although extensive global research has established a strong link between occupational stress and hypertension, studies within the Ghanaian banking sector remain limited. Most existing research has either documented workplace stress or reported on hypertension prevalence in isolation. However, no published work has concurrently assessed the association between stress and hypertension among Ghanaian female bankers.

1.2 Problem Statement

The banking sector in Ghana, particularly foreign banks in Accra, is characterized by heavy workloads, long working hours, and strict performance targets (Yeboah-Kordee et al. 2018). Female employees, who constitute approximately 47.96% of the total labour force in Ghana (The Global Economy, 2024), often face additional cultural and domestic responsibilities, creating a dual role strain that amplifies stress levels (Darko-Asumadu et al., 2018; Buame, 2018). Studies conducted in Ghana have reported high levels of occupational stress and hypertension among bank employees (Ismail et al., 2013; Kissi-Abrokwah et al., 2015). However, little is known about how these stressors specifically affect women working in foreign banks in the Greater Accra Region, despite their unique exposure to both professional and gender-related stressors.

Globally, evidence has linked work-related stress to the development of hypertension (Rodrigue et al., 2023; Elsaid et al., 2021; Kalinowski et al., 2021). Stress activates physiological processes that trigger the release of hormones such as epinephrine and norepinephrine, which increase heart rate and constrict blood vessels, leading to temporary rises in blood pressure. Over time, repeated exposure to these stress responses contributes to sustained hypertension (Spruill, 2010). Yet, such findings may not fully capture the Ghanaian context, where banking roles involve specific stressors

such as prolonged sedentary work, sales targets, customer demands, and frequent organizational changes (Olivia, 2023). While hypertension prevalence in Ghana is estimated at over 30% (Atibila et al., 2021; Bosu & Bosu, 2021), few studies have examined how occupational stress contributes to this burden, particularly among female bankers. No published research has concurrently measured both the prevalence of stress and hypertension in this group, leaving a critical gap in understanding the occupational health risks facing women in Ghana's financial sector.

This gap is further underscored by the limited exploration of management standard indicators, such as workload, control, managerial support, peer support, relationships, role clarity, and change, which the UK Health and Safety Executive (HSE) identifies as core domains for assessing workplace stress (HSE, 2019). Although these indicators are directly relevant to banking operations, they have not been studied among female bank employees in Accra.

In addition, research findings indicate that individuals facing high job demands and low job control are at significantly increased risk of developing hypertension (Markovitz et al., 2004). This association is particularly concerning for women in Ghanaian banking, who are often underrepresented in leadership positions and struggle with societal expectations on childcare and domestic responsibilities (Singh, 2013; Amakye et al., 2021; Darko-Asumadu et al., 2018). These realities justify the exclusive focus on female employees, who may experience higher stress and health risks compared to their male counterparts. Taken together, the lack of localized evidence on the work-related stress and its association with hypertension as well as stress indicators among females working in foreign banks highlights an urgent knowledge gap. Addressing this gap will generate evidence to guide occupational health policies and workplace interventions in Ghana's financial sector.

1.3 Justification

Prior studies in Ghana have highlighted that women in the banking sector experience higher levels of job strain and role conflict compared to men (Kissi-Abrokwah et al., 2015). These female employees are particularly vulnerable to occupational stress due to long working hours, sales targets, customer service demands, and the additional burden of balancing domestic responsibilities (Darko-Asumadu et al., 2018). Despite several studies establishing the relationship between stress and hypertension, there are no studies focusing on these unique stressors and their relationship with hypertension among females in foreign banks, making this group a critical population for study.

This study therefore seeks to address a critical gap in literature by exploring the complex interplay of factors associated with work-related stress and its association with prevalence of hypertension among females working in foreign banks in Accra, Ghana.

This research uses the Health and Safety Executive (HSE) Management Standards Indicator Tool, which identifies key organizational domains of stress: demands, control, managerial support, peer support, relationships, role clarity, and organizational change (HSE, 2019) to investigate the unique stressors among the study population. These indicators are directly relevant to the banking sector, where high demands and role ambiguity often contribute to absenteeism, burnout, and high staff turnover. Understanding how these indicators manifest among female employees in foreign banks will provide actionable insights for both organizations and health practitioners.

Work-related stress and hypertension have measurable consequences for organizational performance. A study conducted in Nigeria by Babarinde and Ohikhena (2019) reported that work-related stress caused a reduction in productivity among employees in the banking sector. Hypertension, often called the “silent killer,” is associated with increased absenteeism and higher

healthcare costs for employers (WHO, 2023). By explicitly linking stress to hypertension outcomes among the study group, this study emphasizes the relevance of occupational health interventions in Ghana's foreign banks.

The findings of this study will benefit several stakeholders. For human resource (HR) managers, the results will help in enabling the design of tailored interventions such as stress management workshops, flexible work schedules, and wellness programs. For healthcare providers, the evidence will inform workplace-based screening and health promotion strategies to prevent and manage hypertension in high-risk occupational groups. For policymakers, the study aligns with the Ghana Health Service's National Policy for the Prevention and Control of Non-Communicable Diseases (NCDs), which emphasizes workplace health promotion and early detection of cardiovascular risk factors (MOH, 2022). By situating banking stress and hypertension within Ghana's broader occupational health and NCD strategies, this research provides a clear pathway for evidence-based interventions and policy integration.

1.4 Conceptual Framework

The conceptual framework examines how work-related stress contributes to hypertension through several factors. Demographic factors such as age, education, and marital status, influence how individuals experience stress. Older people are more prone to hypertension due to aging (Dai et al., 2022), whereas individuals with higher education tend to experience less stress, as they are better equipped to manage demanding workplace routines (Jacobshagen & Rigotti, 2023). In contrast, those with less education often endure job insecurity and financial stress, increasing their hypertension risk (Framke et al., 2020). Religion also plays a protective role by promoting healthy coping mechanisms, such as forgiveness, which reduces stress. Religious communities also

provide social support, fostering a sense of belonging and reducing isolation, which can lower blood pressure (Decroix et al., 2023). Marital status significantly impacts stress levels. Married individuals often have the emotional and practical support needed to manage stress, which reduces the risk of hypertension. Conversely, single, divorced, or widowed individuals face higher stress due to social isolation and financial strain, leading to chronic stress and higher hypertension risk (Wong et al., 2021).

Unhealthy lifestyle habits, such as physical inactivity, alcohol consumption, smoking, and poor diet, worsen stress and hypertension. Diets high in processed foods and sodium elevate blood pressure, while healthier dietary habits, like the DASH diet, and regular physical activity can lower hypertension risk by improving cardiovascular health (Zhu & Wang, 2024). Additionally, smoking and alcohol use, though initially stress-relieving, have long-term harmful effects. Smoking leads to nicotine dependence, creating a cycle of increased stress and blood pressure. The combination of smoking and alcohol use further raises the risk of hypertension by damaging the cardiovascular system through different pathways (Geda & Feng, 2022).



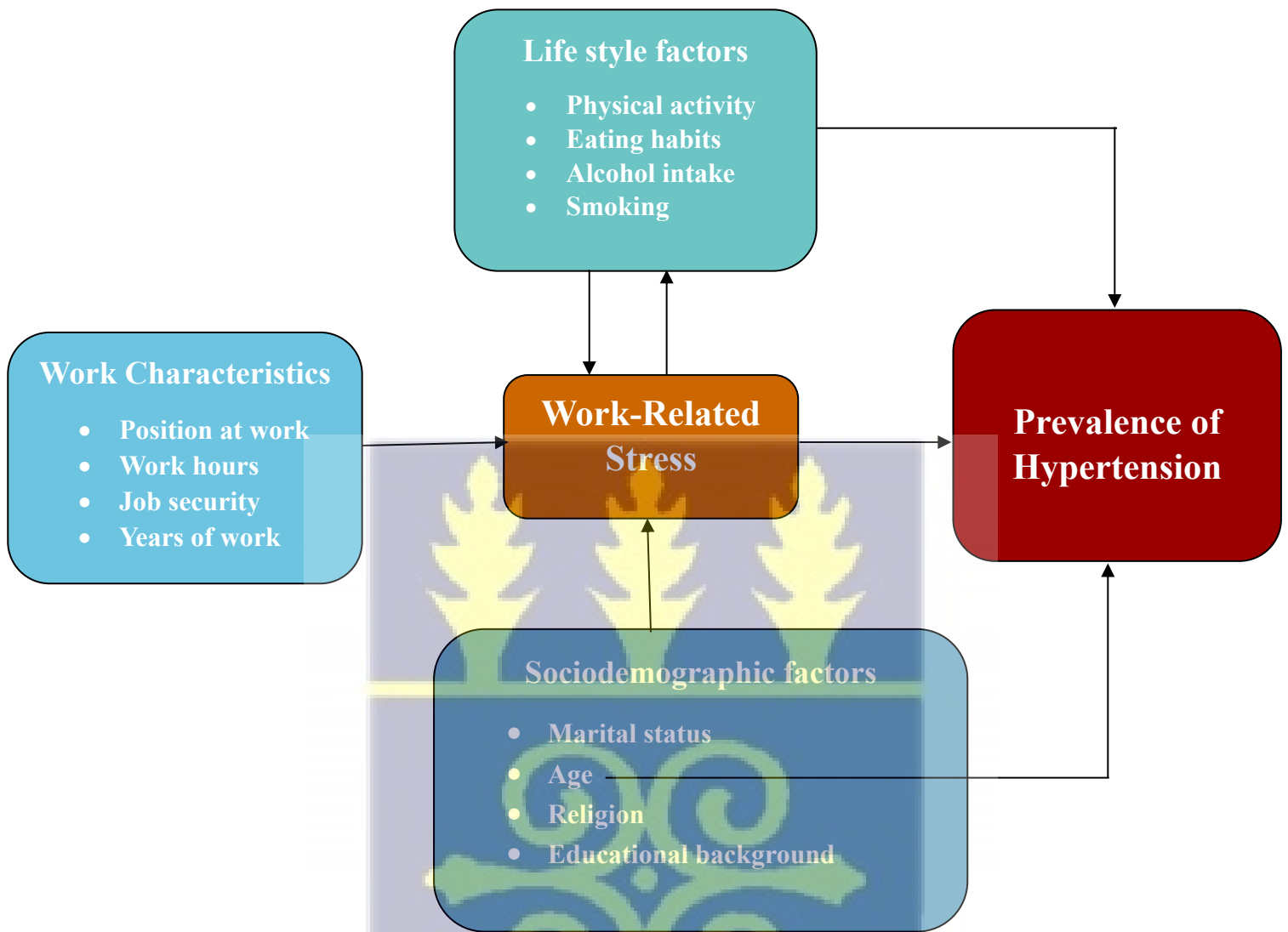


Figure 1: Conceptual framework

1.5 Research Questions

1. What is the prevalence of work-related stress among females working in selected foreign banks in Accra?

2. What are the risk factors associated with work-related stress among females working in foreign banks?
3. What is the prevalence of hypertension among females working in selected foreign banks in Accra?
4. What is the relationship between work-related stress and the prevalence of hypertension among female employees of foreign banks in Ghana?

1.6 Objectives

1.6.1 General Objective

To investigate the relationship between work-related stress and the prevalence of hypertension among females in selected foreign banks in Accra, Ghana.

1.6.2 Specific Objectives

- To assess the prevalence of work-related stress and identify the major Management Standard Indicators among females working in selected foreign banks in Accra.
- To determine factors associated with work-related stress among females working in selected foreign banks in Accra.
- To measure the prevalence of hypertension among females working in selected foreign banks in Accra.
- To investigate the association between work-related stress and hypertension among females working in selected foreign banks in Accra.

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter examines existing literature on work-related stress and its potential relationship with hypertension. This chapter specifically reviewed previous studies on stress and hypertension among the working population with a specific focus on females, the prevalence of hypertension within this group, and the key factors contributing to work-related stress. Additionally, the chapter explored the implications of these stressors on employee well-being and identified gaps in the existing studies.

2.1 PREVALENCE OF WORK-RELATED STRESS

Work-related stress is a type of chronic stress that arises when the demands of the job exceed the individual's resources or abilities to cope with them (Chiang & Liu, 2017). Existing studies indicate a substantial prevalence of work-related stress among women working in the banking sector worldwide. According to a 2021 report by the International Monetary Fund (IMF), female financial services professionals experience elevated stress levels compared to those in other industries, with 40% reporting anxiety and 25% experiencing depression. These findings align with earlier research highlighting the demanding work environment within the banking industry, characterized by extended work hours, heavy workloads, and performance expectations (Evans et al., 2018; Liu et al., 2017). Work-related stress can have a significant impact on employee performance and productivity (Segbenya & Hatsu, 2022). However, in developing countries like Ghana, the issue of work-related stress among bankers is not well-defined by evidence (Gyan & Baffoe, 2014). While precise prevalence rates among female bankers in Accra are not available, Various studies in Ghana's banking sector have documented high levels of occupational stress among bank

employees, including those in Accra and surrounding regions (Gyan & Baffoe, 2017; Segbenya & Hatsu, 2022).

2.1.1 Effects of work-related stress

Work-related stress has wide-ranging effects on health and productivity. Physiologically, chronic stress activates the hypothalamic–pituitary–adrenal (HPA) axis and triggers sustained release of cortisol and adrenaline, raising blood pressure, heart rate, and cardiovascular risk (Gianaros & Manuck, 2013). In high demand banking roles, chronic activation of the HPA axis may manifest as anxiety, depression, burnout, and impaired cognitive function such as poor memory and concentration (McEwen & Gianaros, 2011; Maslach et al., 2020). Behaviorally, employees under stress often adopt unhealthy coping strategies, including poor diet, smoking, alcohol use, and physical inactivity, while also experiencing sleep disturbances (Gede, 2019).

These mechanisms not only endanger individual well-being but also affect organizations through absenteeism, reduced productivity, strained workplace relationships, and higher turnover (Chung et al., 2017; Dartey-Baah et al., 2020). Among women in particular, stress may spill over into family and social life, amplifying the burden of balancing professional and domestic responsibilities (Darko-Asumadu et al., 2018).

2.2 FACTORS ASSOCIATED WITH WORK-RELATED STRESS IN FOREIGN BANKS

Work-related stress is driven by multiple organizational and individual-level factors. Researchers have identified context-specific factors that play a crucial role in shaping employees' stress experiences.

In organizational research, particularly under the UK Health and Safety Executive (HSE) framework, “management standard indicators” are used to assess workplace stress. These stress indicators are demands, control, managerial support, peer support, relationships, role clarity, and change which translate into measurable outcomes such as absenteeism, staff turnover, reduced productivity, and employee disengagement (Brookes et al., 2013). In the banking context, these indicators are particularly relevant because stress often manifests as long working hours, high staff attrition, and reduced service quality, which directly affect both employee health and organizational performance (Addai et al., 2022). Defining these indicators in advance provides a clearer framework for understanding the determinants of stress among female bankers in Ghana.

2.2.1 Workload and long hours

Workload is a significant factor contributing to work-related stress. Studies by Karasek (1979) indicate that high job demands, and excessive work hours can lead to increased stress levels among employees and this was also affirmed by Khalid et al., (2022), who found a positive correlation between long working hours and hypertension, indicating that work-related stress is a primary risk factor for hypertension. Long working hours have been linked to negative health consequences, including physical burnout; however, one important variable that may mitigate this relationship is the perceived workload (Chang, 2023). Kissi-Abrokwah et al. (2015) found that female bankers in Accra often experience stress from sitting for very long hours per day. The possible effects of extended work hours on health and safety are highlighted by the cumulative rise in the probability of accidents linked to shifts longer than 8 hours, such as those lasting 12 hours (Ose et al., 2019). Increased cardiac workload and oxygen demand are two physiological reactions to high exertion and long hours that have an impact on cardiovascular function and exacerbate hypertension (Lay-Flurrie et al., 2020).

Additionally in the banking sector, lack of sufficient staff to handle customer demands adds to the heavy workload (Kissi-Abrokwah et al., 2015). This, combined with organizational culture has an impact on employee performance (Olivia, 2023).

Other authors have also documented the effects of extended work hours and a heavy workload on stress levels, which can affect blood pressure management and cardiovascular health, perhaps resulting in hypertension (Dai et al., 2022; Cheng et al., 2021).

2.2.2 Work-life balance

Work-life balance is attained when people believe they can combine their professional duties with their personal lives or other responsibilities (Omar, 2017). This equilibrium enables people to give equal weight to their personal and professional lives, making sure that neither takes precedence over the other (Sari et al., 2017). Work-life balance among employees has been found to be influenced by factors such as workload, company culture, and working hours (Ford & Collinson, 2011). Negative outcomes including stress, tiredness, and health issues have been linked to poor work-life balance, which can be caused by long working hours, a heavy workload, and a lack of time for personal activities (Young, 2016).

Achieving work-life balance remains a significant hurdle for many women, particularly in societies with well-defined gender roles (Buame, 2018). Although foreign banks adhere to international standards, their adaptation to local cultural norms regarding work hours and childcare availability varies. In Ghana, female employees face heightened work-life balance challenges compared to men, due to cultural expectations that assign them greater childcare and domestic responsibilities (Darko-Asumadu et al., 2018). Work-life balance is therefore a major stressor for females in the foreign banks (Kissi-Abrokwah et al., 2015).

Reconciling the demands of work and personal life to guarantee that each receives the proper attention and priority is necessary to achieve work-life balance (Kalliath & Brough, 2008) and to assist workers in juggling their obligations in their personal and professional lives, flexible work schedules and work-life balance programs have to be put into place (Rosnani, 2023).

2.2.3 Gender Bias

Discrimination and gender bias are pervasive problems that profoundly affect many facets of society. According to research, victims of gender discrimination frequently fail to report their experiences because they fear retaliation, do not want the offender to face consequences, or are unaware of the impact of the prejudice (Sexton et al., 2021). Gender bias takes various forms in the workplace. Professional psychology trainees have acknowledged occasions in which they personally discriminated against clients based on gender, as well as cases in which they were objectified, sexualized, or subjected to discrimination on that basis (Bertsch et al., 2014). Despite shattering the glass ceiling, female leaders in Ghana continue to face significant workplace challenges (Amakye et al., 2021). These obstacles lead to feelings of isolation, frustration, and diminished job satisfaction, ultimately contributing to stress (Triana et al., 2018). Research has demonstrated links between gender bias and unhealthy coping strategies, with those who perceive more gender discrimination having greater chances of using drugs (Ro & Choi, 2010). Women's usage of illicit drugs has been linked to gender bias (Carliner et al., 2016). Furthermore, societal expectations related to women's reproductive roles limit their opportunities for education and training, hindering their access to leadership positions (Boateng, 2018). These expectations and misconceptions frequently lead to prejudiced attitudes about female leaders, which in turn result in unfair treatment and limited prospects for women in the workplace (Eagly and Heilman, 2016).

2.2.4 Performance pressure and role ambiguity

The banking sector is well-known for its demanding environment. Expectations are high, deadlines are short, and the pressure to excel is relentless (Nikolić, 2023). Employees in the banking industry frequently deal with competing demands and intense pressure while attempting to accomplish their goals, according to a survey done among Assamese bank executives (Kejriwal, 2019). However, the presence of ambiguous or conflicting responsibilities can also add to the stress experienced by employees. Studies have indicated that role ambiguity has a direct and detrimental impact on job satisfaction, which lowers employee morale and satisfaction levels. (Yousef, 2002; Malik et al., 2010; George & Zakkariya, 2015). Results from research indicate that role ambiguity is significantly associated with job stress (Segbenya, 2019), as it contributes to more than 15% of employee stress (Rizwan et al., 2014).

2.2.5 Social support

Social support, both within and outside the workplace, plays a vital role in mitigating work-related stress. Strong support networks can provide emotional and practical assistance, helping individuals cope with stress (House, 1981). As indicated in instances of significant organizational transformations, such as the 2008 Icelandic financial crisis, social support plays a critical role in assisting staff members in managing demanding circumstances and surmounting obstacles (Snorradóttir et al., 2016). Supportive workplaces, including effective leadership and coworker support, can improve employee resilience in high-pressure performance situations like the banking industry (Cooke et al., 2019; Takalu et al., 2021). For females in foreign banks in Accra, limited social support from colleagues and management can increase feelings of isolation and stress. Adverse effects of workplace stressors on banking personnel's work performance can be mitigated

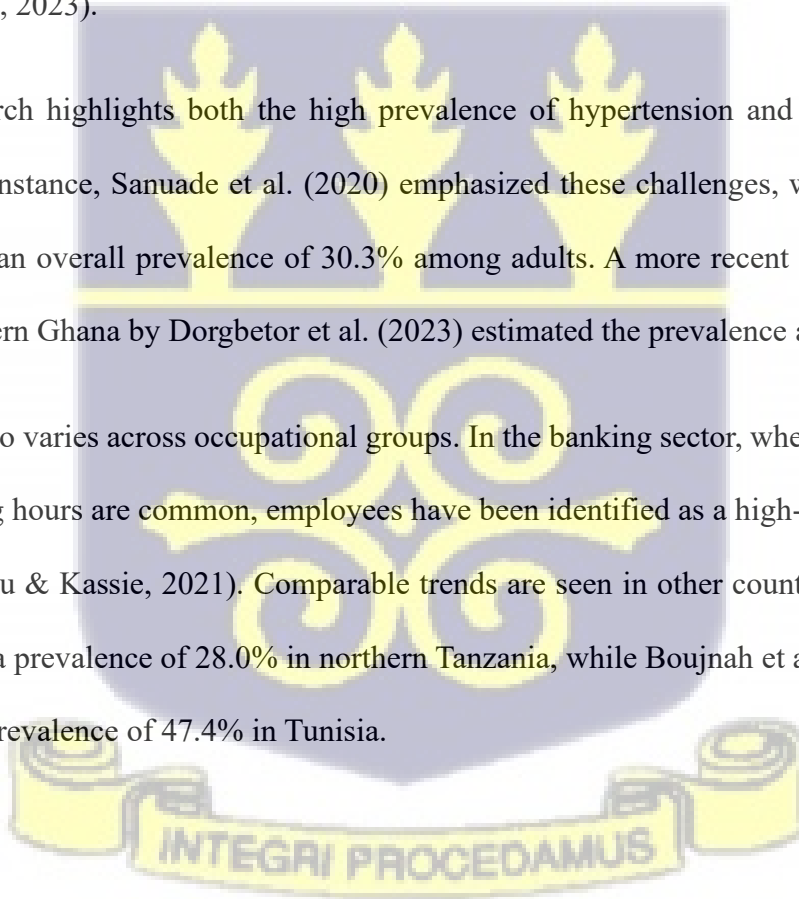
by appropriate social support, highlighting its significance in reducing stress and improving performance (Ivan, 2023).

2.3 PREVALENCE OF HYPERTENSION

Hypertension, or high blood pressure, occurs when the pressure in the blood vessels is persistently elevated at 140/90 mmHg or above. It is a major global health concern, contributing significantly to the risk of cardiovascular diseases, stroke, and chronic kidney disease. Globally, an estimated 1.28 billion adults aged 30–79 years live with hypertension, yet about 46% are unaware of their condition (WHO, 2023).

In Ghana, research highlights both the high prevalence of hypertension and the low levels of awareness. For instance, Sanuade et al. (2020) emphasized these challenges, while Atibila et al. (2021) reported an overall prevalence of 30.3% among adults. A more recent study focusing on women in southern Ghana by Dorgbetor et al. (2023) estimated the prevalence at 16%.

Hypertension also varies across occupational groups. In the banking sector, where sedentary work patterns and long hours are common, employees have been identified as a high-risk group (Ismail et al., 2013; Shitu & Kassie, 2021). Comparable trends are seen in other countries: Galson et al. (2017) reported a prevalence of 28.0% in northern Tanzania, while Boujnah et al. (2018) reported an even higher prevalence of 47.4% in Tunisia.



2.3.1 Risk factors for hypertension

2.3.1.1 Socio-economic status (SES)

Many studies in Ghana have highlighted the relationship between socioeconomic status (SES) and hypertension. Individuals with high SES show a higher prevalence of hypertension, which can be attributed to psychosocial stress associated with high wealth status and living in urban areas (Nyarko, 2016, Sanuade et al. 2018). These findings contrast with those of Leng et al. (2015), who showed that individuals with lower SES tend to have higher blood pressure, with educational attainment being a particularly strong predictor of this association. This suggests that education may play a crucial role in understanding and addressing health disparities related to blood pressure. Both studies align with the broader literature, that suggests SES can impact individuals' lifestyles, potentially increasing their risk of hypertension (Nakagomi et al., 2022). Several studies have examined the correlation between socioeconomic status (SES) and the incidence, treatment, and related variables of hypertension. For instance, Grotto et al. (2008) emphasized the impact of SES on hypertension by highlighting the link between lower socioeconomic status and higher blood pressure levels. Siven et al. (2015) discovered that older people with poorer SES and unfavorable lifestyles have a higher prevalence of hypertension. Rajadoss et al. (2018) shed light on the incidence of metabolic syndrome among hypertensive persons and its interaction with SES by examining the relationship between metabolic syndrome and hypertension in people of different SES.

2.3.1.2 Unhealthy lifestyle habits

Stressful work environments such as those in the banking sector, can lead to unhealthy coping mechanisms, including increased consumption of alcohol, caffeine, and processed foods, which

are linked to hypertension (WHO,2023). High intake of salt and fat from processed foods has been associated with an increased prevalence of hypertension in urban areas in Sub-Saharan Africa (Addo et al., 2015). Female bankers in Accra may choose convenience foods due to time constraints, contributing to the high prevalence of hypertension.

Scholarly investigations have examined the effects of unhealthy lifestyle choices on diverse health outcomes. Holmberg (2024) highlighted the role that unhealthy lifestyle choices including smoking, alcohol drinking, poor food, and physical inactivity play in the development of disorders such as obsessive-compulsive disorder. Kaur (2024) linked obesity and bad lifestyle choices to socioeconomic class, suggesting a possible connection between SES and lifestyle-related health problems. Mandelli et al. (2022) investigated the impact of poor lifestyle habits on biological stress response systems and emphasized their role in raising biological stress levels.

2.3.1.3 Sedentary lifestyles

A lack of regular physical exercise increases the risk of hypertension (Shitu et al., 2021). Working in banks is typically characterized by prolonged sitting and minimal physical activity during work hours, which predisposes employees to the risk of developing hypertension (Oyekale, 2019). High levels of mental stress, combined with the sedentary nature of female banking work increase the risk of hypertension (Montazerifar et al., 2019; Brahmankar & Prabhu, 2017; Salaudeen et al., 2014).



2.3.1.4 Non-modifiable factors

Certain factors non-modifiable factors can significantly influence hypertension risk. These include age, family history of hypertension, and underlying conditions such as diabetes (WHO, 2023). The importance of genetic variables in the incidence of hypertension is shown by the consistent association of family history with an elevated risk of the condition (Ajayi et al., 2018; Liu et al., 2014). Individuals with a family history of hypertension have a higher likelihood of developing the condition (Ehret & Caulfield, 2013; Ajayi et al., 2018). Those with a family history of hypertension are also more likely to be obese and have higher cholesterol levels, suggesting a shared pathway for the development of diabetes, obesity, and hypertension (Liu et al., 2014). Age plays a significant role in the development of hypertension as it has been found to be a non-modifiable risk factor for the illness (Cohen, Curhan, & Forman, 2012).

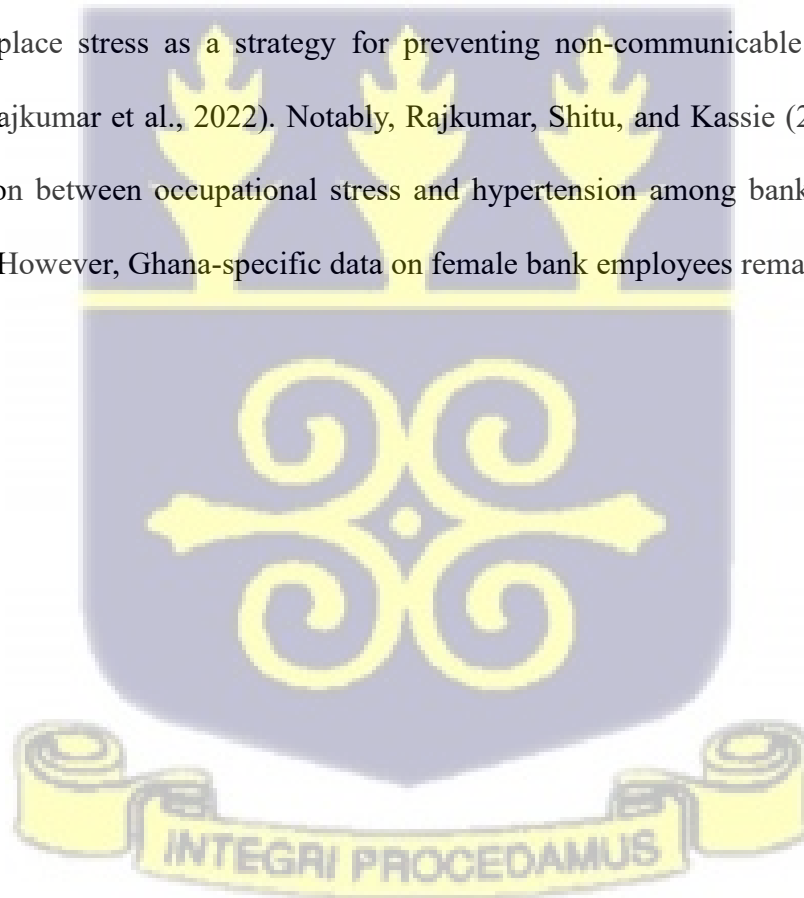
For females working in foreign banks in Accra, genetic predisposition combined with work-related stress and lifestyle factors can significantly increase the risk of hypertension.

2.4 ASSOCIATION BETWEEN WORK-RELATED STRESS AND HYPERTENSION AMONG FEMALE EMPLOYEES IN FOREIGN BANKS

A strong association between work-related stress and hypertension has been documented in several international studies (Rengganis et al., 2020; Ismail et al., 2013; Kamal et al., 2021), although relatively few have focused specifically on female bank employees. A meta-analysis of observational studies in different occupational groups reported a positive link between work stress and hypertension (Babu et al., 2014). This finding is consistent with Shitu et al. (2021), who observed a significant prevalence of hypertension within the banking workforce. Research further suggests that female white-collar workers who work long hours face a greater risk of developing hypertension (Nakanishi et al., 2001). Other studies reinforced this, demonstrating that workplace

stress, extended work hours, and high job demands significantly increase the incidence of hypertension among female employees (Li et al., 2016; Khalid et al., 2022). Karelius et al. (2023) observed that greater reductions in blood pressure from weekdays to weekends were associated with job strain and demanding work conditions.

Collectively, this evidence indicates that bank workers are more vulnerable to hypertension compared to the general population, largely due to the demanding nature of their jobs. In addition to occupational stress, behavioral and sociodemographic factors also contribute to the burden of hypertension among bank employees (Shitu & Kassie, 2021). The frequent occurrence of hypertension and related risk factors among female bank workers underscores the importance of managing workplace stress as a strategy for preventing non-communicable diseases such as hypertension (Rajkumar et al., 2022). Notably, Rajkumar, Shitu, and Kassie (2022) confirmed a strong association between occupational stress and hypertension among bank workers in Sub-Saharan Africa. However, Ghana-specific data on female bank employees remain limited.



CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

This study employed a quantitative, cross-sectional design to examine the association between work-related stress and the prevalence of hypertension among female employees in selected foreign banks located within the Greater Accra Region, Ghana.

3.2 Study area

The study was conducted in selected foreign banks in the Greater Accra Region, specifically Standard Chartered Bank and Access Bank Ghana. Standard Chartered Bank, established in Ghana in 1896, is one of the largest and oldest international financial institutions in Ghana, with its Accra branch located in the bustling financial district. It plays a vital role in providing financial services, supporting trade, and enhancing investment in both the private and corporate sectors. The bank employs hundreds of staff across its branches, contributing significantly to the national employment rate and economy. Standard Chartered has a particular focus on corporate social responsibility initiatives, frequently engaging in community projects. Access Bank Ghana, also located in Accra, is a subsidiary of Access Bank Plc, a leading African bank. It entered the Ghanaian market in 2009, and its Accra headquarters is known for providing a range of banking solutions to individuals, SMEs, and large corporations. Like Standard Chartered, Access Bank also has a prominent presence in Ghana's financial landscape, contributing to job creation and economic development. It engages in programs that foster financial inclusion and community development, supporting Ghana's vision for economic growth.

Both banks play a critical role in the banking sector, contributing significantly to Ghana's GDP through employment and business services. Their presence in Accra, a hub for financial activity, further cements their role as major contributors to the local and national economy.

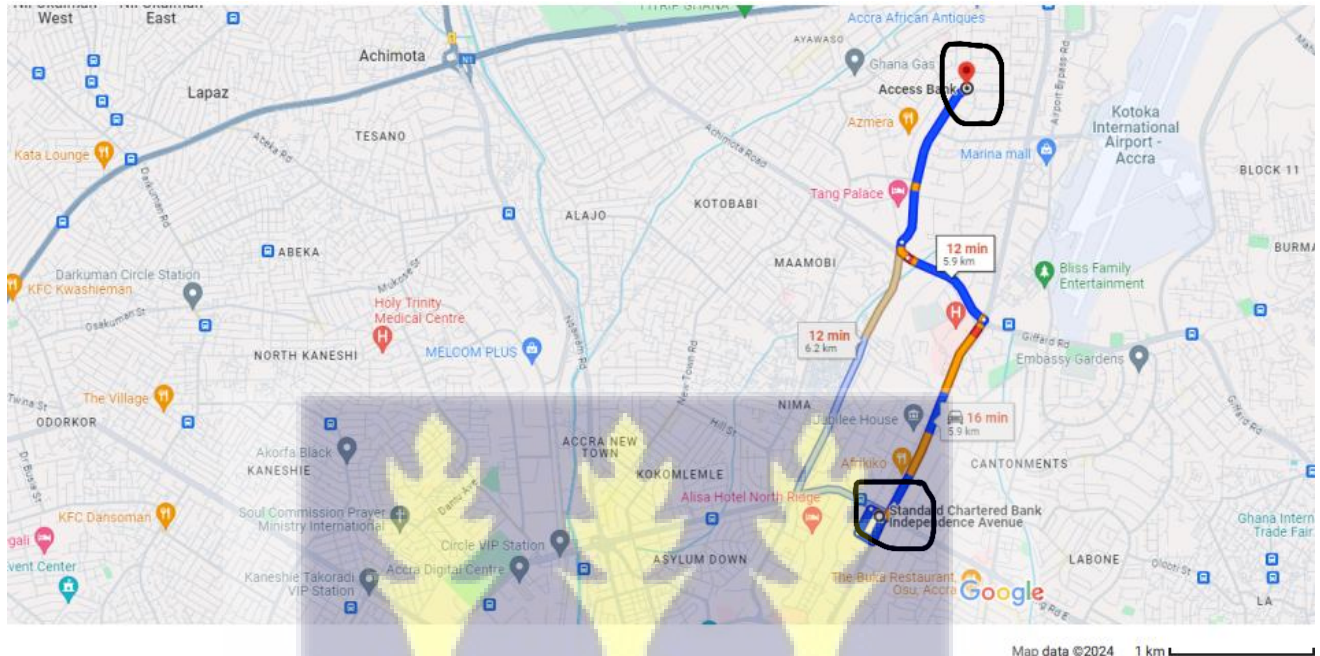


Figure 2: Map of the study areas (Google, 2024)

3.3 Study population

This study comprised all female employees of Standard Chartered Bank and Access Bank operating within the Greater Accra Region of Ghana.

3.4 Eligibility criteria

3.4.1 Inclusion criteria

The study included female employees aged between 24 and 60 years, currently employed in either Standard Chartered Bank or Access Bank in Accra, and willing to participate in the study.

3.4.2 Exclusion criteria

1. Female employees with a history of major medical conditions were excluded from the study as such conditions can affect stress levels and blood pressure.
2. Female employees who were unavailable during the data collection period or who refused to take part in the study were excluded from the study.

3.5 Sampling procedure and technique

3.5.1 Sample size.

The required sample size for this study was determined using the single population proportion formula. This study used an estimated prevalence of hypertension of 16% from Dorgbetor et al., 2023, a study conducted on women in Southern Ghana, a 5% margin of error, a 95% confidence interval, and 10% non-response rate.

Since data specific to foreign bank employees in the Accra, Ghana is unavailable, the 16% prevalence of hypertension from southern Ghanaian women was used as an initial estimate. This approach acknowledges the potential of generalizability due to similarities in sociodemographic factors between these populations but also emphasizes the need for future research to obtain a more precise prevalence estimate for this specific population group.

$$n = Z^2 \times P(1-P) / e^2$$

Where n is the sample size, P is prevalence (proportion) of hypertension from literature,

d = margin of error

Z = standard score corresponds to 1.96.

Therefore, the total sample size will be determined using the above formula

P = 16 %

$$Z = 1.96 \text{ at } 95\%CI$$

$$d = 5\% (0.05)$$

$$n = (1.96)^2 \times 0.16(1 - 0.16) / (0.05)^2$$
$$= 207$$

By considering a 10% non-response rate the final sample size for the study was

$$n = (0.10 \times 207) + 207$$

$$n = 228$$

Standard Chartered Bank has 341 female employees and Access has 450 female employees.

Using a sampling frame of 791 and a sample size of 228.

Table 3.5.1: Breakdown of employees targeted for study

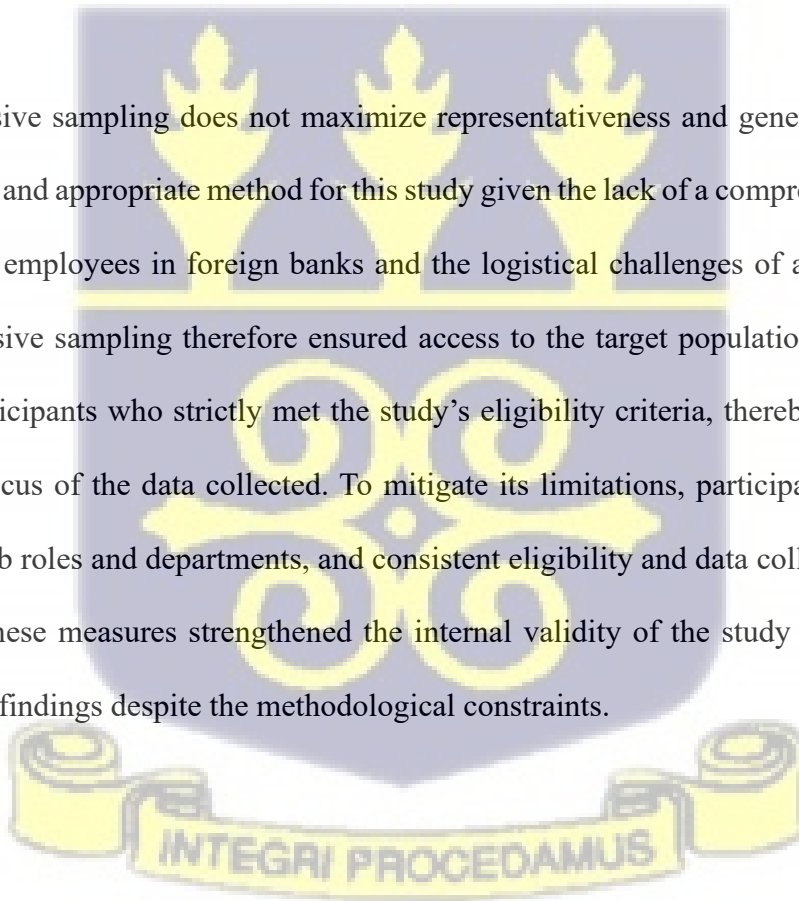
SELECTED FOREIGN BANKS		SAMPLE SIZE
Standard Chartered Bank	$(341/791) * 228$	98
Access Bank	$(450/791) * 228$	130

3.5.2 Sampling procedure

The selected banks were Standard Chartered Bank and Access bank. A purposive sampling approach was adopted. This involved identifying eligible participants directly through professional network and department heads ensuring diverse representation across job roles and department. Participants were approached directly by the research team to ensure independence and confidentiality. However, introductory assistance was sought from HR departments to disseminate information about the study, while ensuring voluntary participation without HR's direct involvement in recruitment to avoid bias or perceived pressure.

Finally, the data was collected randomly from female bank workers who consent to participate in the study.

Although purposive sampling does not maximize representativeness and generalizability, it was the most feasible and appropriate method for this study given the lack of a comprehensive sampling frame of female employees in foreign banks and the logistical challenges of accessing multiple branches. Purposive sampling therefore ensured access to the target population and enabled the inclusion of participants who strictly met the study's eligibility criteria, thereby maintaining the relevance and focus of the data collected. To mitigate its limitations, participants were selected from different job roles and departments, and consistent eligibility and data collection procedures were applied. These measures strengthened the internal validity of the study and enhanced the reliability of the findings despite the methodological constraints.



3.6 Study variables

3.6.1 Dependent variable

- Prevalence of Hypertension

3.6.2 Independent variable

- Sociodemographic factors (age, religion, marital status, educational background)
- Lifestyle factors (dietary habits, alcohol consumption, physical activity, smoking)
- Work / occupational characteristics (work hours/duration, years of work, job security, position at work)
- Work-related stress.

3.7 Data collection

Self-administered semi-structured questionnaire was used to collect data from participants. The questionnaire was coded onto KoboCollect app which is a data collection tool. KoboCollect is user-friendly and efficient because there is no need to transcribe from paper to computer before analysis. This also completely eliminates transcribing errors making it more accurate.

The questionnaire consisted of five sections.

- **Section A** was used to assess sociodemographic characteristics (age, marital status, religion, educational background).
- **Section B** assessed participant's work characteristics.
- **Section C** employed HSE management standard indicator tool to evaluate work-related stress. The HSE Management Standards Indicator Tool is a validated questionnaire

developed by the UK's Health and Safety Executive (HSE) to assess work-related stress. It evaluates employee perceptions of seven key workplace stressors—demands, control, manager support, peer support, relationships, role clarity, and change management—against established benchmarks. This tool enables organizations to identify stress risks, prioritize interventions, and enhance employee well-being.

- **Section D** delved into participant's health and hypertension status. Participants' hypertension status was assessed based on self-reported data. They were asked whether they had been diagnosed with hypertension by a healthcare professional, and their responses were recorded accordingly.
- **Section E** consisted of questions on Lifestyle habits (physical activity, eating habits, smoking, alcohol consumption).

3.8 Quality control

Precaution was taken to ensure the reliability and validity of the data. The questions were clear and understandable and the questionnaire was reviewed by the study supervisor for completeness, errors, and omissions prior to uploading onto the KoboCollect app.

3.9 Data analysis

All 228 participants submitted their questionnaires, resulting in a 100% response rate. All data were analyzed using STATA version 18 software, employing both descriptive and inferential statistical methods to examine the hypertension prevalence, stress levels, and their associations with various demographic and occupational factors. Descriptive statistics, including percentages, frequencies, standard deviations and means, were used to summarize demographic characteristics, prevalence of hypertension, and lifestyle factors such as physical activity, diet, and alcohol

consumption. The proportion of participants diagnosed with hypertension was computed based on self-reported data, along with an analysis of the duration of hypertension diagnosis and medication adherence among hypertensive respondents. Work-related stress was assessed using the Health and Safety Executive (HSE) Management Standards Indicator Tool, which evaluates stress across seven key domains: demands, control, managerial support, peer support, relationships, role clarity, and change. Each domain was assessed using multiple Likert-scale items ranging from 1-5. To calculate the composite stress score for each participant, responses to all 22 questions were summed, with the total score reflecting the participant's overall stress level. The median composite stress score (69.0) was used as the cutoff point to classify participants into low and high stress levels. Scores higher than the median were categorized as high stress levels, while scores below the median were classified as low stress levels. Based on this established cut-off point, the final stress scores were grouped into low and high stress levels. To investigate the association between hypertension and stress, a logistic regression analysis was performed to generate both crude and adjusted odds ratios with 95% confidence intervals and p-values. The analysis controlled for potential confounders, including age, marital status, education level, religious affiliation, job position, years of experience, and weekly work hours. A p-value less than 0.05 was considered statistically significant. Additionally, independent t-tests and ANOVA were conducted to assess variations in stress scores across different demographic groups. All findings were presented using tables, graphs, and charts, accompanied by appropriate interpretations to enhance clarity.

3.10 Ethical consideration

Ethical approval was granted by the Noguchi Memorial Institute for Medical Research with certificate number 041/24-25. In addition, permission was sought from the management of Standard Chartered Bank and Access Bank prior to data collection. Consent was also sought from

each study participant after explaining the purpose and benefits of the study. Participation in this study remained voluntary at every stage and participants were made aware of their ability to withdraw from the study at any point without any fear or coercion. Also, participants were informed that nonparticipation would not affect employment status or performance appraisals. Participants were made aware of the confidentiality of every information provided. Personal and professional details of participants remained anonymous throughout the study. Recruitment and consent processes were conducted independently by the research team, not by the employer or HR. Anonymity and confidentiality of responses was strictly maintained.



CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the findings of the study. It focuses on four specific objectives under which data were gathered and analyzed. The findings in this chapter reflect participants' characteristics, factors contributing to work-related stress, the prevalence of work-related stress, the prevalence of hypertension, the association between prevalence of hypertension and work-related stress and other relevant variables.

This study had a 100% response rate.

4.1 Sociodemographic characteristics of respondents

For age, the majority, (32%) of participants fell within the 35-39 years group followed by the 30-34 years (25%) and 25-29 years (17%). Together, these three groups constitute 74% of the workforce, indicating that most female employees in this sector are in their early- to mid-career stages. The 40-44 years group represents 16%, while 45-49 years accounts for 8%. The smallest age group is 50-60 years, comprising only 2.19% of the workforce.

Out of the 228 participants, 124 (54%) were married, 72 (32%) were single, 27 (12%) were either divorced or separated, and 5 (2%) were widowed (Table 4.1).

Regarding educational level, the results show that majority 148 (64.91%) of the respondents had a bachelor's degree, 79 (34.65%) had a master's degree, while only one person representing 0.44% had a PhD (Table 4.1).

The results show that 101 respondents (44%) were tellers, 11 (5%) were secretaries, and 41 (18%) were customer representatives. Additionally, 25 (11%) were managers, while 11 (5%) held other positions (Table 4.1).

Regarding work experience, 72 respondents (31.58%) had 4–6 years, 54 (23.68%) had 7–10 years, and 45 (19.74%) had more than 10 years of experience. Additionally, 43 (18.86%) had 1–3 years of experience, while 14 (6.14%) had less than one year (Table 4.1).

For religious affiliation, 192 respondents (84%) were Christians, 34 (15%) were Muslims, and 2 (1%) were traditionalists (Table 4.1).

Analysis of work hours showed that 165 respondents (72%) worked more than 40 hours per week, while 63 (28%) worked 31–40 hours (Table 4.1).

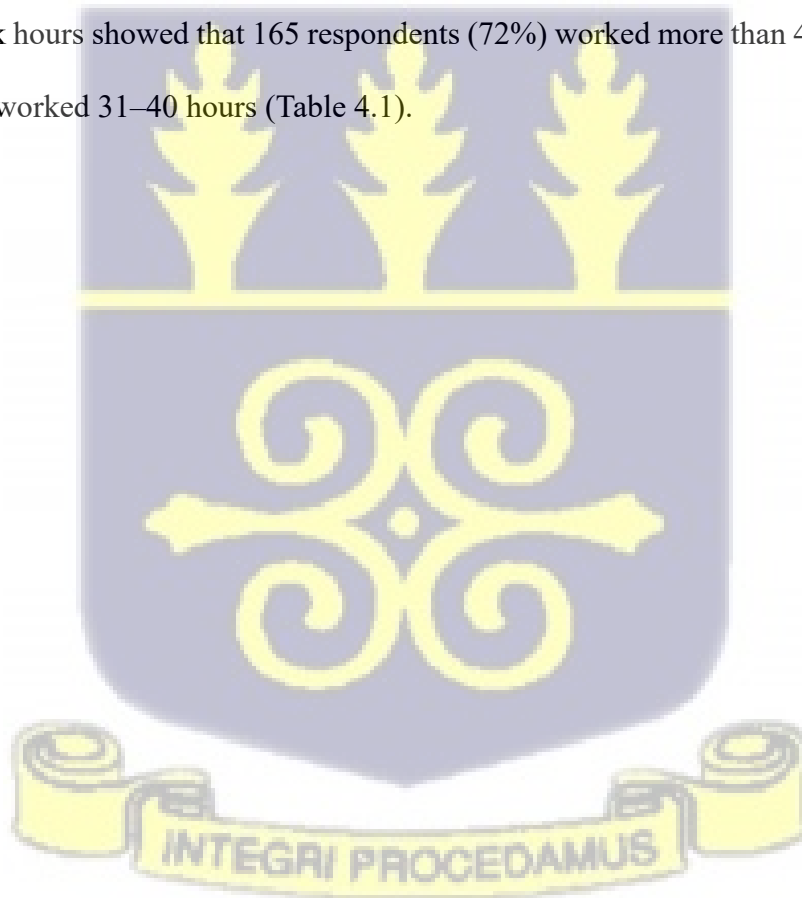


Table 4.1 Sociodemographic characteristics of respondents (n = 228)

Variable	Category	Frequency	Percentage
Age Group	25 – 29	39	17
	30 – 34	56	25
	35 – 39	73	32
	40 – 44	36	16
	45 – 49	19	8
	50 – 60	5	2
Marital Status	Single	72	32
	Married	124	54
	Divorced/Separated	27	12
	Widowed	5	2
Education	Bachelor's Degree	148	64.91
	Master's Degree	79	34.65
	PhD	1	0.44
Job Position	Teller	101	44
	Manager	25	11
	Customer Representative	41	18
	Secretary	11	5
	Other	50	22
Years of Work	Less than 1 year	14	6.14
	1-3 years	43	18.86
	4-6 years	72	31.58
	7-10 years	54	23.68
	10+ years	45	19.74
Religion	Christian	192	84
	Muslim	34	15
	Traditionalist	2	1
Hours/Week	31-40 hours	63	28
	More than 40 hours	165	72

4.1.1 Health and lifestyle factors

One hundred and eleven of the respondents (49%) had good health. Fifty-nine (26%) had fair health, 53 (23%) reported excellent health, while 3 (1%) and 2 (1%) reported poor and very poor health respectively (Table 4.1.1). With regards to physical exercise, 111 (49%) sometimes

exercised. 13 (6%) never exercised and only 9 (4%) of the respondents always exercised (Table 4.1.1).

Regarding diet, 101 respondents (44%) described their diet as healthy, 95 (42%) as balanced, 18 (8%) as very healthy, 9 (4%) as unhealthy, and 3 (1%) as very unhealthy (Table 4.1.1).

Meal frequency data showed that 156 respondents (68.42%) ate three meals daily, 58 (25.44%) ate two meals, and 14 (6.14%) ate more than three meals (Table 4.1.1).

Fast food consumption analysis revealed that 94 (41%) ate fast food 3–4 times a week, 20 (9%) did five or more times weekly, and only 8 (4%) never ate out (Table 4.1.1).

Alcohol consumption was reported by 92 respondents (40%): 79 (86%) drank occasionally while 13 (14%) consumed alcohol weekly (Table 4.1.1).

Sleep duration results indicated that 178 respondents (78%) slept 6–8 hours per night, 41 (18%) slept 4–6 hours, 7 (3%) slept more than 8 hours, and 2 (1%) slept fewer than 4 hours per night (Table 4.1.1).

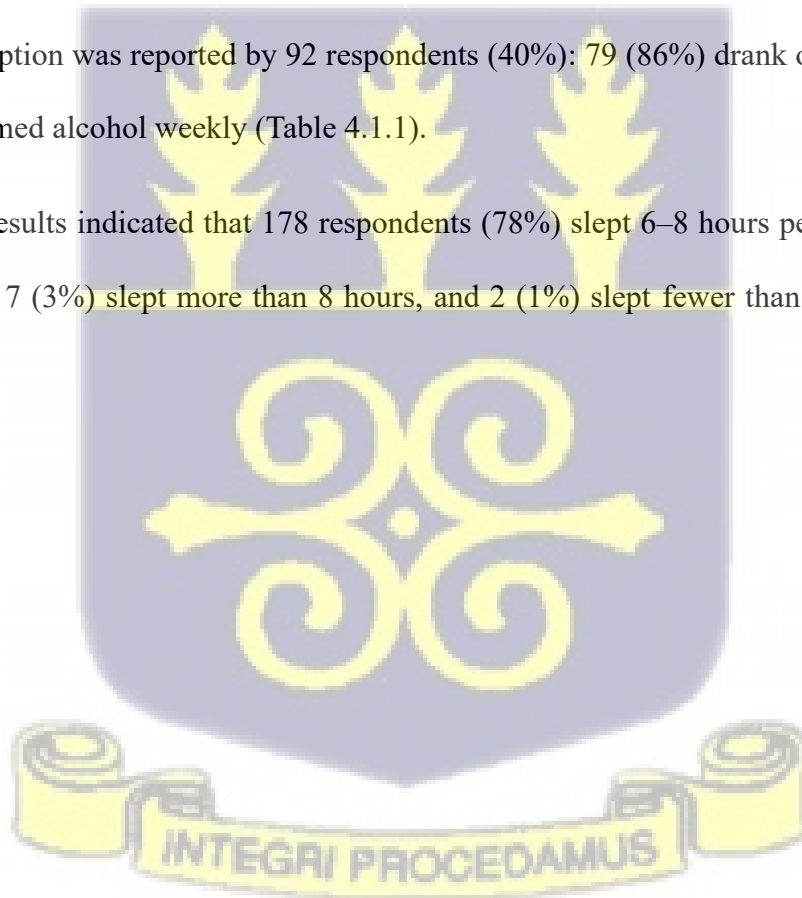


Table 4.1.1 Health and lifestyle factors (n = 228)

Category	Subcategory	Frequency	Percentage
Smoking	Yes	2	1
	No	226	99
Overall Health	Very Poor	2	1
	Poor	3	1
	Fair	59	26
	Good	111	49
	Excellent	53	23
Physical Exercise	Never	13	6
	Rarely	69	30
	Sometimes	111	49
	Frequently	26	11
	Always	9	4
Diet	Very Unhealthy	3	1
	Unhealthy	11	5
	Balanced	95	42
	Healthy	101	44
	Very Healthy	18	8
Meals per Day	2 Meals	58	25.44
	3 Meals	156	68.42
	More than 3 Meals	14	6.14
Fast Food per Week	Never	8	4
	1-2 Times	106	46
	3-4 Times	94	41
	5 or More Times	20	9
Vegetables per Week	Never	20	8.77
	1-2 Times	120	52.63
	3-4 Times	61	26.75
	5 or More Times	27	11.85
Alcohol Consumption	Yes	92	40
	No	136	60
	Total	228	100
Alcohol Frequency	Weekly	13	14
	Occasionally	79	86
Hours of Sleep/Night	Less than 4 Hours	2	1
	4-6 Hours	41	18
	6-8 Hours	178	78
	More than 8 Hours	7	3

4.2 Prevalence of work-related stress

A five-point Likert scale was used to measure respondents' stress levels. Each participant's total stress score was calculated by summing their responses across all questions, resulting in composite scores ranging from 54 to 99, with a midpoint of 69. These scores were then categorized and analyzed based on the number of individuals in each category. The distribution of stress scores shows that most respondents (145) scored between 62 and 78, suggesting that moderate stress levels were common. In addition, 104 participants scored above the median of 69, highlighting a significant proportion experiencing high stress levels, while 124 individuals scored 69 or below, indicating low stress levels (Figure 3). Overall, 54.4% of respondents reported low stress, whereas 45.6% experienced high stress, making the prevalence of stress in the study population 45.6% (Figure 4).

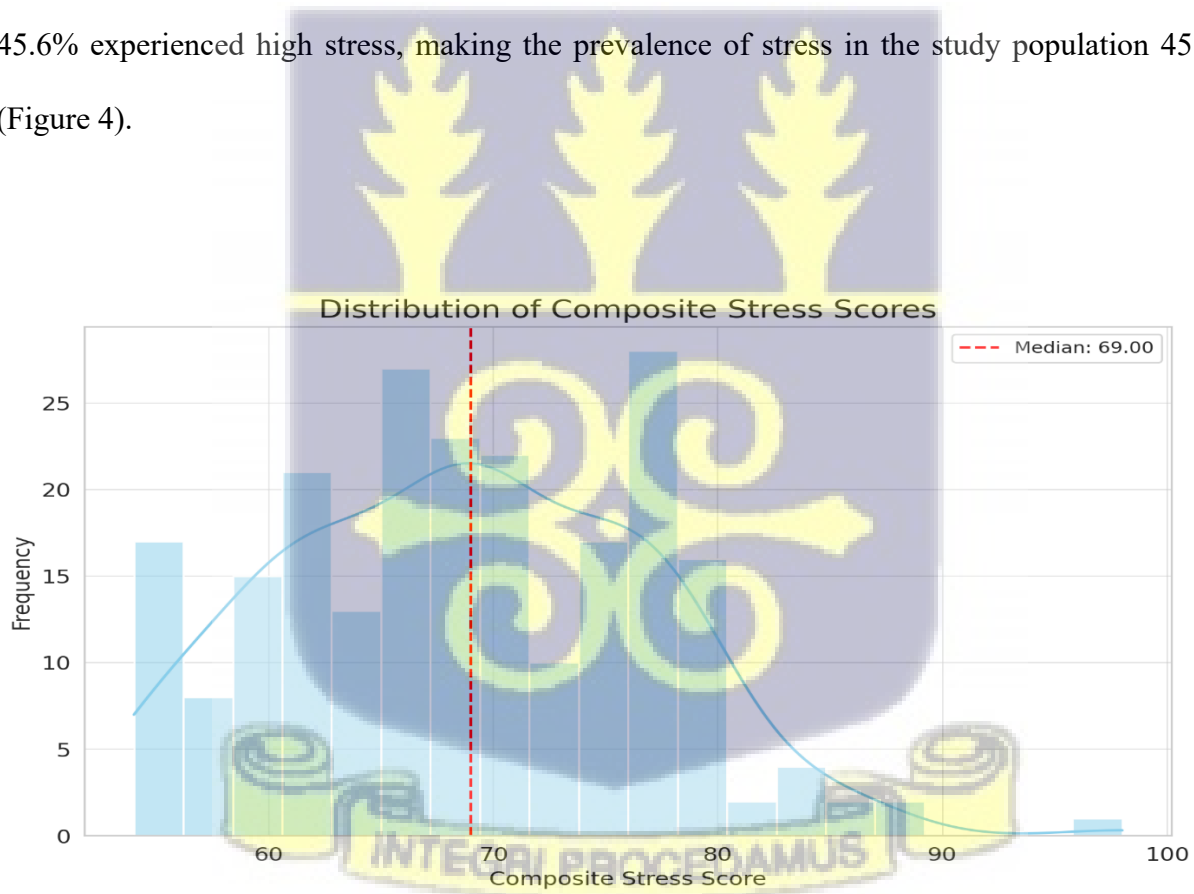


Figure 3: Distribution of composite stress score

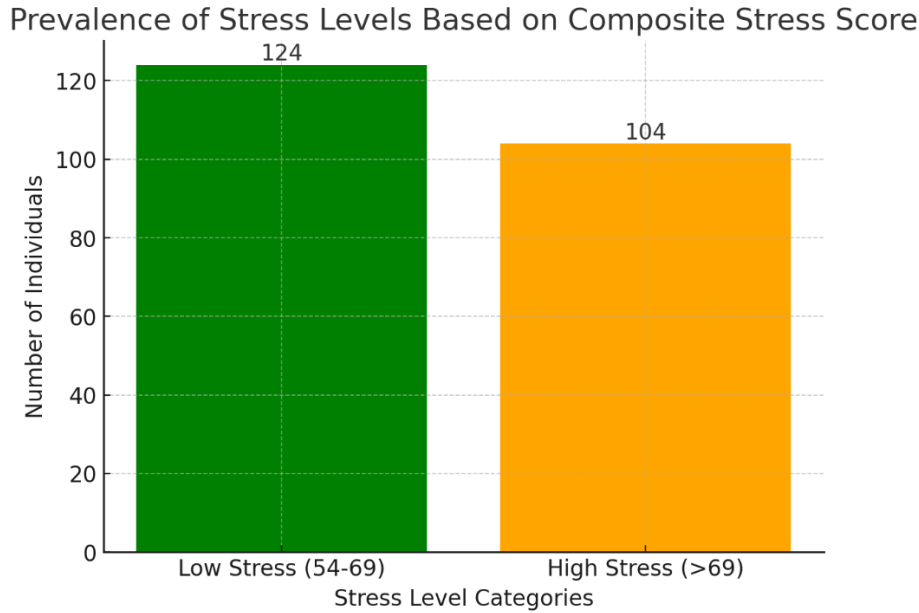


Figure 4: Prevalence of stress based on composite stress score

4.3 Assessment of workplace stressors using HSE management standards

The mean scores and standard deviations (SD) for various HSE Management Standards categories, along with their appropriate benchmark classification and interpretation are presented. The categories are demand, control, manager support, peer support, relationships, role and change (Table 4.3.1).

Demands, which assesses workload, deadlines, and work pressures, has a mean score of 3.48 (SD = 1.12). Based on the HSE benchmark classification, this score falls in the ≥ 3.29 category (≥ 80 th percentile), meaning the organization is performing very well in managing workload-related stressors contributing to a healthier work environment. The "Control" factor, which examines how much influence employees have over their work, received a mean score of 2.56 (SD = 1.09). This falls below the 3.22 benchmark (< 20 th percentile), indicating urgent action is needed.

Managerial support, also measures how well managers provide guidance and address employee concerns. This has a mean score of 3.35 (SD = 1.02). This score places it in the ≥ 3.27 and < 3.46 range (20th–50th percentile), indicating a clear need for improvement. With a mean score of 3.38 (SD = 0.89), the "Peer Support" category falls below 3.62 (< 20 th percentile), signifying that urgent action is needed to improve it.

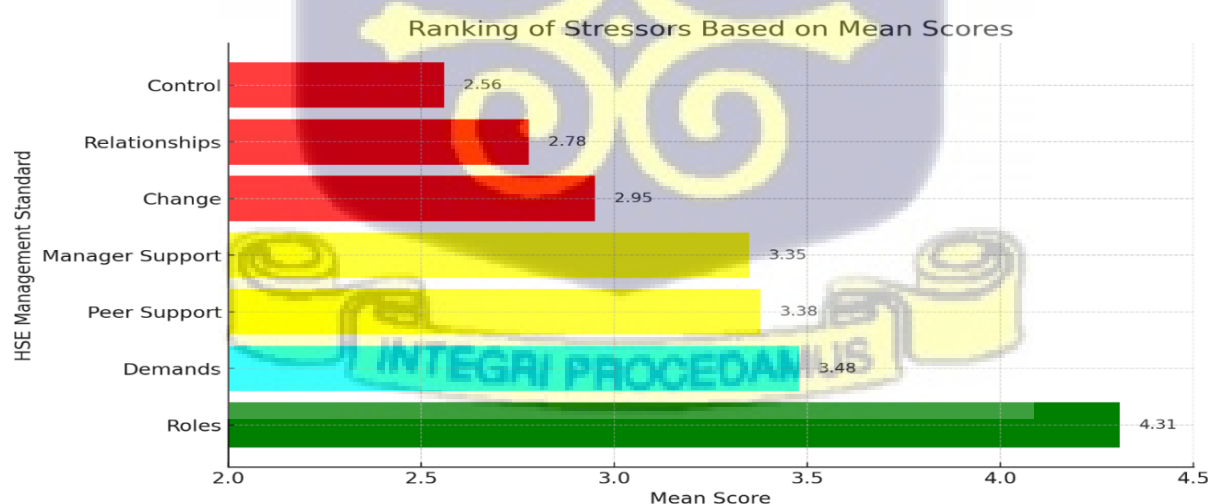
"Relationships" in the workplace, which include aspects such as conflicts, and interpersonal interactions, have a mean score of 2.78 (SD = 0.94). This score falls below 3.61 (< 20 th percentile), classifying it as an area where urgent action is needed. The "Roles" category assesses role clarity and whether employees understand their job expectations. With a mean score of 4.31 (SD = 0.79), this dimension falls in the ≥ 4.31 category (≥ 80 th percentile), indicating that the organization is performing exceptionally well in ensuring employees have a clear understanding of their responsibilities.

The "Change" category, which measures how well organizational change is managed and communicated, has a mean score of 2.95 (SD = 1.10). This falls in the ≥ 2.79 and < 3.04 category (20th–50th percentile), indicating a clear need for improvement.

The ranking of stressors based on their mean scores shows that lack of control is the greatest contributing factor to stress, with the lowest mean score of 2.56, indicating the most urgent need for intervention. The second highest stressor is relationship issues, with a mean score of 2.78, followed closely by change, which has a mean score of 2.95. Manager support ranks fourth with a mean score of 3.35, while peer support follows in fifth place with a mean score of 3.38. Demand is ranked sixth, with a mean score of 3.48, while roles is the least contributing factor to stress, with the highest mean score of 4.31 (Figure 5).

Table 4.3.1 HSE Management Standards Indicator Tool Summary

Standards	Mean (SD)	Benchmark Range	Indication
Demands	3.48 (1.12)	≥ 3.29 (≥ 80 th percentile)	Doing Very Well (Need to Maintain Performance)
Control	2.56 (1.09)	< 3.22 (< 20 th percentile)	Urgent Action Needed
Manager Support	3.35 (1.02)	≥ 3.27 and < 3.46 (≥ 20 th and < 50 th percentile)	Clear Need for Improvement
Peer Support	3.38 (0.89)	< 3.62 (< 20 th percentile)	Urgent Action Needed
Relationships	2.78 (0.94)	< 3.61 (< 20 th percentile)	Urgent Action Needed
Roles	4.31 (0.79)	≥ 4.31 (≥ 80 th percentile)	Doing Very Well (Need to Maintain Performance)
Change	2.95 (1.10)	≥ 2.79 and < 3.04 (≥ 20 th and < 50 th percentile)	Clear Need for Improvement


Figure 5: Ranks of stressors based on their mean score.

4.3.1 Factors associated with stress indicators

The table presents an analysis of the association between various sociodemographic factors and the key stress-related categories measured by the Health and Safety Executive (HSE) Management Standards Indicator Tool are presented. The findings are presented as mean ($\pm$ SD) scores for different groups within each sociodemographic factor, alongside the corresponding p-values.

Regarding marital status, both single and married employees show similar scores across most categories. However, married individuals report slightly higher scores in control (3.5 ± 1.1 vs. 3.3 ± 1.0), manager support (3.5 ± 1.3 vs. 3.4 ± 1.2), peer support (4.1 ± 1.0 vs. 3.9 ± 1.1), and relationships (3.9 ± 1.1 vs. 3.8 ± 1.2). Notably, there is a statistically significant difference in role clarity ($p = 0.005$) and change ($p = 0.029$), indicating that married employees perceive their roles as more clearly defined and experience fewer uncertainties regarding organizational change than single employees (Table 4.3.2).

When examining educational levels, employees with a Bachelor's or Master's degree report relatively similar stress levels, with no statistically significant differences in most categories. However, employees with a PhD reported the lowest scores across almost all domains, particularly in demands (2.9 ± 0.7), control (2.7 ± 1.1), peer support (3.1 ± 1.1), relationships (2.9 ± 0.6), and roles (2.6 ± 1.2). These findings suggest that employees with Ph.D. qualifications might face more job-related challenges. Interestingly, peer support ($p = 0.035$) and relationships ($p = 0.032$) show statistically significant differences across education levels, indicating that individuals with lower educational qualifications perceive stronger social support at work compared to those with doctoral degrees (Table 4.3.2).

All other demographic variables, including age, religion, and years of work experience, did not show any statistically significant differences across job stress factors, as indicated by p-values greater than 0.05 (Table 4.3.2).

Table 4.3.2 Mean (SD) scores for each standard based on sociodemographic characteristics

Characteristic	Demands	Control	Manager Support	Peer Support	Relationships	Roles	Change
Age							
24–29	3.7 (1.2)	3.8 (0.9)	4.0 (0.7)	4.5 (0.7)	4.4 (0.7)	3.8 (0.9)	4.7 (0.7)
30–35	3.4 (1.1)	3.2 (1.2)	3.0 (1.4)	3.7 (1.0)	3.7 (1.2)	3.1 (1.5)	3.7 (1.1)
36–45	3.4 (0.9)	3.3 (1.2)	3.5 (1.0)	3.8 (1.2)	3.6 (1.1)	3.3 (1.4)	3.9 (1.1)
>45	3.7 (0.8)	3.9 (1.7)	3.7 (0.9)	4.2 (1.3)	4.5 (1.0)	4.1 (1.5)	4.1 (1.5)
p-value	0.895	0.511	0.238	0.340	0.381	0.505	0.213
Marital Status							
Single	3.5 (1.1)	3.3 (1.0)	3.4 (1.2)	3.9 (1.1)	3.8 (1.2)	3.4 (1.3)	3.8 (1.2)
Married	3.6 (1.0)	3.5 (1.1)	3.5 (1.3)	4.1 (1.0)	3.9 (1.1)	3.6 (1.2)	4.0 (1.1)
p-value	0.703	0.144	0.246	0.064	0.975	0.005	0.029
Education							
Bachelor	3.8 (0.9)	3.4 (1.0)	3.3 (1.2)	3.8 (1.1)	4.0 (1.0)	3.4 (1.4)	3.9 (1.1)
Masters	3.4 (1.1)	3.3 (1.2)	3.3 (1.4)	4.0 (0.9)	3.9 (1.3)	3.3 (1.5)	3.7 (1.2)
PHD	2.9 (0.7)	2.7 (1.1)	3.0 (1.0)	3.1 (1.1)	2.9 (0.6)	2.6 (1.2)	3.6 (0.7)
p-value	0.092	0.293	0.805	0.035	0.032	0.373	0.824
Religion							
Christianity	3.6 (1.0)	3.4 (1.1)	3.4 (1.2)	4.0 (1.0)	3.9 (1.1)	3.5 (1.3)	3.9 (1.2)
Islam	3.4 (1.1)	3.2 (1.2)	3.2 (1.3)	3.7 (1.1)	3.8 (1.2)	3.3 (1.4)	3.7 (1.3)
p-value	0.648	0.321	0.267	0.150	0.420	0.217	0.280
Years of Work							
0–5 y	3.5 (1.1)	3.3 (1.2)	3.3 (1.4)	4.1 (0.9)	3.9 (1.2)	3.3 (1.5)	3.8 (1.2)
6–10 y	3.1 (1.2)	2.7 (1.3)	2.9 (1.2)	3.0 (1.2)	3.6 (1.0)	2.4 (1.4)	3.7 (1.0)
>10 y	3.4 (0.8)	3.5 (0.9)	3.4 (1.0)	3.8 (1.0)	3.6 (1.2)	3.5 (1.2)	3.9 (1.0)
p-value	0.512	0.221	0.336	0.401	0.389	0.192	0.365

4.4 Prevalence of Hypertension

The results revealed that 168 (73.7%) respondents reported no history of hypertension, while 60 (26.3%) had been diagnosed with the condition (Figure 6).

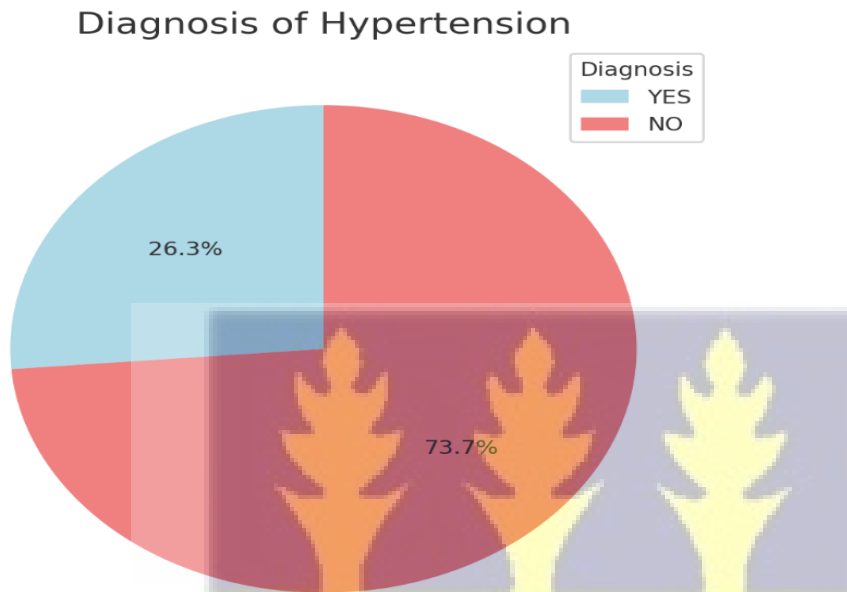


Figure 6: Prevalence of hypertension

Follow up analysis on the duration of hypertension revealed that 46.67% were diagnosed less than a year ago, 40% within 1–3 years, 11.67% within 4–6 years, and 1.66% over six years ago. Regarding medication use, 58.33% of those diagnosed do not take medication, while 41.67% do. Family history of hypertension was reported by 127 respondents (56%), while 66 (29%) had no family history, and 35 (15%) were uncertain (table 4.4.1).

Table 4.4.1 Duration of hypertension, family history, and medication use Among participants (n = 228)

Category	Response	Frequency	Percentage
Years of Hypertension	Less than 1 year	28	46.67
	1-3 years	24	40.00
	4-6 years	7	11.67
	More than 6 years	1	1.66
Medication Use	Yes	25	41.67
	No	35	58.33
Family History of Hypertension	Yes	127	56
	No	66	29
	Unsure	35	15

4.5 Association Between Work-Related Stress and Hypertension

Table 4.5.1 presents the results of a logistic regression analysis examining the association between stress levels and hypertension, while controlling for potential confounders such as age, marital status, religion, education level, job position, years of work, and hours worked per week. The analysis provides both crude odds ratios (OR) and adjusted odds ratios (AOR), along with their 95% confidence intervals (CI) and p-values.

Individuals experiencing high stress levels were 2.8 times more likely to develop hypertension compared to those with low stress (OR = 2.80, 95% CI: 1.45–5.40). After adjusting for other variables in the model, the association remained significant but the crude odds ratio was slightly attenuated, with an adjusted OR of 2.10 (95% CI: 1.02–4.32) and a p-value of = 0.043. This indicates that stress, even after controlling for other factors, is a statistically significant contributing factor for hypertension.

For each one-year increase in age, the odds of hypertension increased by 4% in the crude model (OR = 1.04, 95% CI: 1.01–1.08) and the odds of hypertension increased by 5% in the adjusted model (AOR = 1.05, 95% CI: 1.01–1.10, $p = 0.021$). This suggests a statistically significant positive association between age and hypertension.

Finally, only the category of ">10 years" of work showed a statistically significant association with hypertension. Individuals in this category are 1.4 times more likely to develop hypertension compared to those with <1 year of experience (AOR = 1.40, 95% CI: 0.80–2.45, $p = 0.040$).

Individuals working >40 hours per week showed a statistically significant association with hypertension (AOR = 1.60, 95% CI: 1.05–2.45, $p = 0.029$) and are 1.6 times more likely to have hypertension compared to those working 31–40 hours per week (Table 4.5.1).

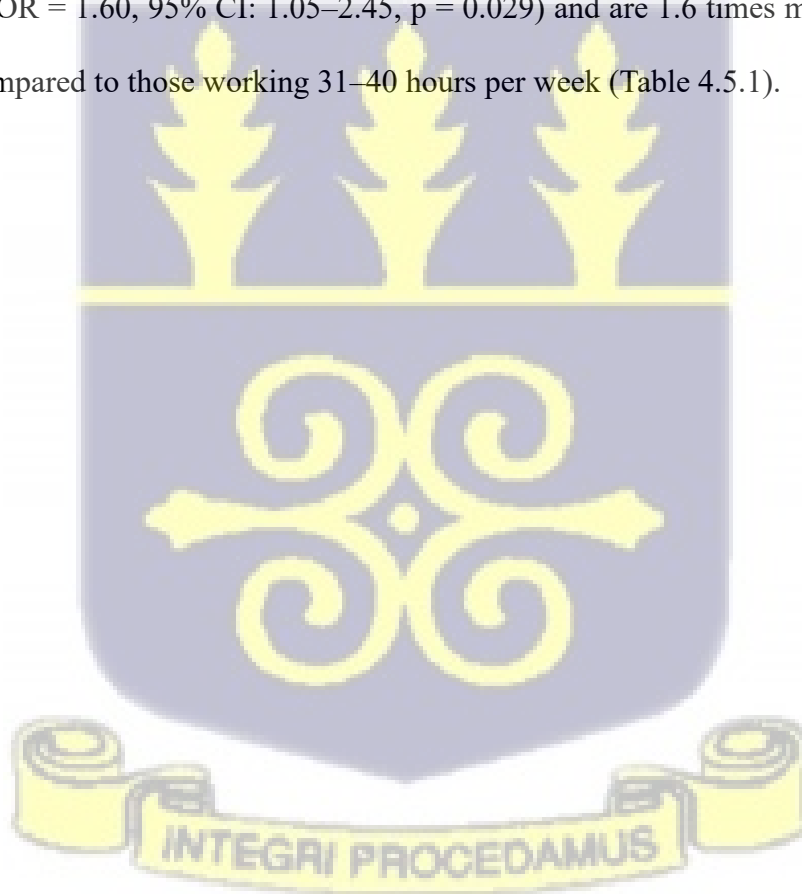


Table 4.5.1. Association between sociodemographic characteristics, work-related stress, and hypertension.**Logistic Regression**

Variable	Subgroup	Crude OR (95% CI)	Adjusted OR (95% CI)	P-value
Stress Level	Low (Reference)	1.00	1.00	-
	High	2.80 (1.45–5.40)	2.10 (1.02–4.32)	0.043
Age	Per 1-year increase	1.04 (1.01–1.08)	1.05 (1.01–1.10)	0.021
Marital Status	Single (Reference)	1.00	1.00	-
	Married	0.90 (0.50–1.60)	0.85 (0.45–1.60)	0.620
	Divorced/Separated	1.10 (0.60–2.00)	1.00 (0.50–2.00)	0.990
	Widowed	1.40 (0.70–2.80)	1.30 (0.60–2.80)	0.490
Religion	Christian (Reference)	1.00	1.00	-
	Muslim	0.90 (0.50–1.60)	0.95 (0.50–1.80)	0.870
	Traditionalist	1.20 (0.40–3.60)	1.10 (0.35–3.50)	0.860
Education	Bachelor's (Reference)	1.00	1.00	-
	Master's	1.10 (0.70–1.70)	0.90 (0.55–1.47)	0.670
	PhD	1.30 (0.50–3.40)	1.10 (0.40–3.10)	0.850
Job Position	Customer Rep (Reference)	1.00	1.00	-
	Teller	1.10 (0.60–2.00)	1.05 (0.55–2.00)	0.880
	Manager	1.40 (0.80–2.50)	1.30 (0.75–2.25)	0.350
	Other Roles	1.20 (0.70–2.10)	1.10 (0.60–2.00)	0.750
Years of Work	<1 year (Reference)	1.00	1.00	-
	1–3 years	1.20 (0.60–2.40)	1.10 (0.50–2.40)	0.800
	4–6 years	1.30 (0.70–2.50)	1.20 (0.60–2.40)	0.600
	7–10 years	1.40 (0.75–2.60)	1.30 (0.65–2.60)	0.450
	>10 years	1.60 (0.85–3.00)	1.40 (0.80–2.45)	0.040
Hours of Work per Week	31–40 (Reference)	1.00	1.00	-
	>40	1.70 (1.10–2.60)	1.60 (1.05–2.45)	0.029

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses the study findings in relation to existing literature and their implications for public health interventions. The discussion is structured to address the findings corresponding to each research objective.

5.1 Prevalence of Work-Related Stress

The first objective of this study was to examine the prevalence of work-related stress among female employees in selected foreign banks in Accra. The analysis of stress scores among employees revealed that 45.6% of female employees in selected foreign banks in Accra reported experiencing high levels of work-related stress. This finding is comparable to studies that highlight banking as a high-stress profession (Munira et al., 2023; Khalid et al., 2022). Studies conducted locally have also shown considerable stress among bankers. For instance, Kissi-Abrokwah et al. (2015) observed that Ghanaian bankers frequently report stress due to workload and lack of work-life balance. Similarly, Darko-Asumadu et al. (2018) found that employees in Ghana's service sector, particularly women, experience stress linked to both organizational pressures and cultural expectations. Also, Li et al. (2016) reported that stress and hypertension are prevalent health concerns among female employees in corporate organizations. These studies suggest that the prevalence of high stress observed in the current study is consistent with broader trends in employee well-being.

The substantial proportion of employees experiencing high stress underscores the critical need for organizational interventions to address workplace stressors. Implementing strategies such as

workload redistribution, flexible work schedules, and mental health support programs could help reduce work-related stress. The presence of a small subset of employees experiencing severe stress further emphasizes the importance of targeted interventions to prevent burnout and promote overall well-being within the organization.

5.2 Factors Associated with Work-Related Stress

The analysis of workplace stressors revealed that the highest contributor to stress among employees was a lack of control over their work, with a mean score of 2.56 (SD = 1.09), which falls below the 20th percentile of the Health and Safety Executive (HSE) benchmark. This highlights an urgent need for intervention, as low job control has consistently been associated with psychological distress, burnout, and an increased risk of hypertension (Spector, 2021; Theorell et al., 2020). According to the Job Demand-Control Model (Karasek, 1979), high demands combined with limited autonomy create conditions that elevate stress and blood pressure, underscoring the relevance of this finding for cardiovascular health.

The second most significant stressor was workplace relationships, followed by change management, both of which also scored below the 20th percentile, again indicating the need for immediate action. Poor workplace relationships and ineffective change management can heighten stress and indirectly contribute to hypertension through the chronic activation of the stress-response system (De Witte et al., 2021). Managerial and peer support ranked fourth and fifth, respectively, suggesting that employees perceive gaps in workplace social support. This is critical, as inadequate support has been linked to absenteeism, diminished job performance, and heightened stress-related health risks (Halbesleben et al., 2020).

Interestingly, the demand factor—workload and deadlines—scored relatively well ($M = 3.48$, ≥ 80 th percentile), indicating that employees perceived workload as manageable. Similarly, role clarity emerged as the least concerning stressor, suggesting that employees understand their responsibilities. These results suggest that while role expectations are clear and workloads are structured, the lack of control, poor relationships, and insufficient support remain central drivers of stress. Previous research also confirms that well-defined roles and structured job demands act as protective factors against stress and its health consequences (Bakker & Demerouti, 2022). However, without adequate autonomy and support, these protective elements may be insufficient to buffer against the physiological risks of hypertension.

The observed variation compared to other studies may reflect organizational culture and management practices. Workplaces that promote participatory decision-making and effective communication often report lower stress (Crawford et al., 2021). In contrast, employees who feel powerless, experience interpersonal conflict, or lack clarity during organizational transitions are more prone to both stress and adverse cardiovascular outcomes. Addressing these concerns will, therefore, require structural interventions such as employee involvement in decision-making, conflict-resolution mechanisms, and improved change-management strategies.

The analysis of stress across sociodemographic factors showed no statistically significant differences, but several trends were evident. Younger employees (24–29 years) reported higher scores in peer support, relationships, and change management, indicating greater workplace support, possibly due to mentoring opportunities (Tewari et al., 2021). Older employees (>45 years) also reported higher scores, likely reflecting accumulated experience and resilience (Ng & Feldman, 2022). In contrast, mid-career employees (30–45 years) recorded lower scores in managerial support, relationships, and role clarity, suggesting greater vulnerability to stress. This

group often faces career-advancement pressures, family responsibilities, and financial commitments, which may intensify work stress and elevate hypertension risk (Ahmad & Rana, 2020; Ongori & Agolla, 2021).

Married employees reported better role clarity and lower uncertainty regarding organizational change compared to single employees, consistent with studies showing that marital stability provides emotional and financial support that buffer against stress (Smith et al., 2023). Education level, however, revealed an interesting pattern: employees with Ph.D reported the lowest scores in demands, control, and peer support, suggesting greater job-related challenges and potential social isolation. Lower-educated employees, conversely, reported stronger peer support, echoing findings that highly educated employees often face higher performance expectations and complex responsibilities, which increase stress and cardiovascular strain (Siu, 2020).

Work experience also influenced stress levels. Employees with 6–10 years of experience reported the highest stress, aligning with evidence that mid-career employees face the greatest role ambiguity and workload strain (Brough et al., 2021). Those with over 10 years of experience reported stress levels similar to new employees, possibly due to improved coping strategies or adaptation over time. These findings suggest the need for tailored support programs for mid-career employees, including leadership training, career coaching, and structured wellness programs.

Finally, religious affiliation did not significantly impact stress, supporting the argument that workplace stress is shaped more by organizational culture than by religious identity (Goretz & Ulrich, 2022). This reinforces the importance of organizational reforms—such as enhancing social-support networks, training managers in supportive leadership, and improving communication—to address stress and prevent its escalation into hypertension.

5.3 Prevalence of Hypertension

The study found that 26.3% of respondents had been diagnosed with hypertension. This is slightly lower than the national female adult prevalence of approximately 30.1% reported by Atibila et al. (2021) and Bosu & Bosu (2021), but it is still concerning given the relatively young and economically active population studied. Notably, nearly half (46.67%) of those diagnosed had received their diagnosis within the past year, suggesting a recent increase in cases.

These findings align with existing research indicating a rising trend of hypertension among working populations, particularly women in high-stress occupations. For instance, similar studies in occupational settings have reported high rates of stress-related hypertension among banking professionals (Agyemang et al., 2022; Ofori et al., 2021). Hypertension is more prevalent among professionals in demanding jobs, such as banking (Addo et al., 2018). However, the prevalence observed in this study, which is slightly lower than Ghana's national rate, may be attributed to the unique nature of the participants' occupation (Kumbu et al., 2023) unlike the general population.

These findings underscore the increasing burden of hypertension in high-stress professions and highlight the need for targeted workplace health interventions. The high proportion of recently diagnosed cases suggests not only an emerging hypertension concern within this population, influenced by workplace stressors (Mensah et al., 2020; Babu et al., 2020), but also increased awareness and detection, potentially due to routine health screenings at workplaces. Addressing this issue requires the implementation of workplace wellness programs, stress management initiatives, and improved access to healthcare to reduce hypertension risk among women in banking.

5.4 Association Between Work-Related Stress and Hypertension

The study found a significant association between high stress levels and hypertension, even after adjusting for confounders. Age, longer job tenure, and working more than 40 hours per week were also identified as risk factors.

The strong link between stress and hypertension observed in this study resonates with the Ghanaian context, where stressful working conditions in the banking sector have been linked to poor cardiovascular outcomes (Kissi-Abrokwah et al., 2015). Kivimäki and Steptoe (2018) identified chronic stress as a major contributor to the development and progression of hypertension, emphasizing the physiological pathways through which stress triggers sustained increases in blood pressure.

This result is also consistent with research conducted in other regions, including a study by Zhou et al. (2021) in China, which found that job-related stress is a key predictor of hypertension among professionals. Similarly, a systematic review by Kumbu and Mensah (2023) concluded that job stress is a primary factor influencing hypertension rates in Sub-Saharan Africa, with the banking and financial sectors being particularly affected. Work-related stress, particularly in high-demand professions, has been widely studied in relation to hypertension. Agyemang et al. (2022) and Ofori et al. (2021) reported comparable findings in their studies on banking professionals in Ghana, where stress from heavy workloads, long hours, and high job expectations were associated with an increased prevalence of hypertension.

However, some studies have explored the relationship between stress and hypertension, with some findings indicating a weak or inconclusive association. For instance, a study by Sparrenberger et al., 2009 concluded that acute stress is unlikely to be a contributing factor to hypertension.

The results of this study reinforce the growing body of evidence linking stress to hypertension, particularly in high-pressure work environments, and therefore emphasize the urgent need for targeted occupational interventions.

The positive association between age and hypertension is well-documented in epidemiological studies, as blood pressure tends to increase with age due to vascular changes and cumulative exposure to risk factors (Franklin et al., 2020). Moreover, stress often contributes to unhealthy coping mechanisms, such as poor dietary habits, physical inactivity, and increased alcohol or tobacco consumption, further exacerbating hypertension risk.

The findings highlight the importance of targeted interventions, particularly for individuals in high-stress occupations. Routine blood pressure screenings, stress management initiatives, and workplace wellness programs can play a crucial role in reducing hypertension risk among professionals. Given the increasing prevalence of hypertension in working populations, further research is needed to explore the long-term effects of work-related stress and effective intervention strategies. The association between extended work hours and hypertension also underscores the need for workplace policies that prioritize employee well-being. Previous studies have shown that implementing stress reduction programs, flexible work schedules, and promoting work-life balance can significantly mitigate the impact of work-related stress on hypertension (Mensah & Babu, 2020).

5.5 Sociodemographic Characteristics and Stress/Hypertension

sociodemographic factors such as marital status, religion, education, and job position showed no significant effect. This finding diverges from several studies that have reported that education and religion are predictors of stress and hypertension. For example, higher educational attainment has been linked to increased stress, due to greater job responsibilities, and lower stress, owing to

enhanced coping resources (Schoger, 2023). Similarly, religious affiliation and participation have been shown, in some contexts, to provide psychosocial support that buffers against stress and reduces hypertension risk (Koenig, 2015; Clark, 2023).

The absence of such associations in this study may be explained by the relatively homogeneous characteristics of female bankers in Accra. Most participants share similar workplace demands, organizational cultures, and urban living conditions, which may override individual differences in education or religion. Banking roles in foreign banks are highly standardized, with performance targets, strict timelines, and structured hierarchies that expose employees to comparable levels of occupational stress regardless of background. This occupational uniformity could mask the potential influence of personal characteristics. Furthermore, in Ghana's urban banking context, religious practice may not substantially alter workplace stress experiences, as organizational pressures remain the dominant stressors.

These findings suggest that, in high-demand professional sectors, structural work conditions may exert a stronger influence on stress and hypertension than individual sociodemographic factors. This emphasizes the importance of organizational-level interventions—such as workload management, autonomy enhancement, and supportive leadership—rather than focusing solely on personal characteristics, in mitigating stress and preventing hypertension among female bankers.

5.6 Strengths of the Study

This study has several strengths that enhance its reliability as well as its overall contribution to the existing body of knowledge.

Firstly, this study focuses on female employees in foreign banks, a specific demographic group that is often underrepresented in occupational health research. By examining this population, the

study provides valuable insights into gender-specific stressors and their potential impact on hypertension, contributing to both academic literature and workplace health policy.

Another key strength of the study is its use of a validated stress assessment tool (HSE Management Standard Indicator Tool) to measure workplace stressors. The adoption of standardized instruments ensures that the results are both reliable and comparable to findings from other studies in occupational health research. This enhances the credibility of the study's conclusions, reducing potential biases associated with subjective self-reporting of stress.

Furthermore, the study examined various workplace stressors, including job demands, control, manager support, peer support, workplace relationships, role clarity, and change adaptation. This comprehensive approach provides a holistic understanding of work-related stress and its potential links to hypertension, offering valuable insights for policymakers, employers, and occupational health researchers.

5.7 Limitations of the Study

One limitation of this study is its cross-sectional design, which limits the ability to establish causal relationships between stress and hypertension, as it only captures associations at a single point in time. Additionally, the use of self-reported data may introduce bias due to respondents' subjective perceptions and potential recall inaccuracies.

Also, the study focused on two selected foreign banks in Accra, limiting its generalizability to all banking or financial institutions in Accra, Ghana.

Finally, some factors, such as genetic predisposition to hypertension and other lifestyle variables, were not extensively controlled, which may affect the study's conclusions.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

6.0 Introduction

This study investigated work-related stress and the prevalence of hypertension among females working in selected foreign banks in Accra, Ghana. This chapter presents a summary of the findings, which form the foundation for making conclusions and recommendations.

6.1 Summary

This study investigated the relationship between work-related stress and hypertension among female employees working in selected foreign banks in Accra, Ghana. Using a cross-sectional quantitative approach with a sample size of 228, the study examined the prevalence of work-related stress, its associated factors, the prevalence of hypertension, and the relationship between stress and hypertension. The findings revealed a high prevalence of work-related stress, with 45.6% of respondents experiencing high stress levels. Major stressors identified included limited decision-making autonomy, conflicts at work, and organizational change. Furthermore, 26% of respondents had been diagnosed with hypertension, exceeding the WHO national prevalence rate of 21.7% for Ghana, suggesting that high-stress banking jobs may elevate the risk of hypertension. The study established a significant association between work-related stress and hypertension, with additional influences from age, years of work experience, and lifestyle behaviors such as diet, physical activity, and alcohol consumption.

6.2 Conclusion

The study concludes that work-related stress is prevalent among female employees in foreign banks in Accra, and that it has a significant impact on their risk of developing hypertension. The high prevalence of stress among respondents reflects the demanding nature of employment in foreign banks in Ghana, which may contribute to adverse health outcomes, as evidenced by the 26% prevalence of hypertension among participants. Additionally, lifestyle factors such as poor diet, physical inactivity, and alcohol consumption contribute to hypertension, reinforcing the importance of holistic health promotion strategies for employees in high-stress industries.

The findings highlight the critical need for effective stress management strategies and workplace interventions to enhance employee well-being. Therefore, addressing work-related stress through organizational policies, employee wellness programs, and better work-life balance practices could help mitigate the risks associated with prolonged stress and hypertension.

6.3 Recommendations

Interventions should include:

1. Management of banks should implement stress management programs, including stress management workshops, physical activity programs, counseling services, and mental health awareness campaigns to promote employee well-being.
2. Public health practitioners can get involved in awareness campaigns on healthy eating habits and the dangers of physical inactivity and excessive alcohol consumption among employees to help mitigate hypertension risks.
3. Management of banks should implement routine health screenings for hypertension and stress-related conditions to facilitate early detection and intervention.

4. Management of banks should implement policies that promote adaptable work hours, remote work options, and sufficient time off to assist employees in maintaining a healthy balance between professional and personal obligations.
5. Healthy eating should be encouraged by providing nutritious meals at work and organizing educational sessions on balanced diets. This helps to foster a healthier lifestyle of workers.

6.4 Areas for Future Study

1. Future research should employ longitudinal designs to more effectively determine causal relationships between work-related stress and hypertension over time.
2. Research should compare stress levels and the prevalence of hypertension among employees in foreign banks with those in local banks and other high-stress industries.



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APPENDIX I: PARTICIPANT' S INFORMATION SHEET

Title of Research: Work-related stress and prevalence of hypertension among females in selected foreign banks in the Greater Accra Region, Ghana

Principal Investigator: Faith Baah

Address: Department of Biological, Environmental and Occupational Health - School of Public Health, University of Ghana-Legon.

General Information About Research

Hypertension is significantly becoming an alarming public health concern especially among the working class who face high job demand and work pressure. Work stress has been researched to be a contributing factor in increased prevalence of hypertension among this population. Women, are known to be more susceptible to hypertension and are therefore the focus of this study. This research seeks to bring to bear the association and interconnection of workplace stressors and prevalence of hypertension among females who are exposed to demanding working environment like the foreign banks in Accra, Ghana.

Possible Risks and Discomforts

There is no expected risk or discomfort associated with this study.

Possible Benefits

This study will be of benefit to employers and appropriate policy makers in providing strategies in controlling stress in the workplace hence reducing risk of hypertension among female employees.

Outcome and Feedback

Findings from this study will be made available to the management body of Access Bank and Standard Chartered Bank in Accra. Results may also be made available to the public by publishing in peer reviewed journals.

Funding Information

The study would be self-funded by the Principal Investigator.

Confidentiality

Respondent's information and responses will be kept strictly confidential throughout the process of data collection, analysis and final report.

Compensation: Study participants will receive thank you messages upon completion of research questionnaire.

Voluntary Participation and Right to Leave the Research

Participation in every stage of this study is voluntary. Participants can willingly withdraw at any point without fear or coercion.

Contacts for Additional Information

For further information and clarity with respect to this study, study participants can freely reach out to the following individuals.

Faith Baah (School of Public Health)

Phone: 0596605633

Dr. Ibrahim Issah (Lecturer, School of Public Health)

Phone: 054323753

APPENDIX II: CONSENT FORM

Study Title: work-related stress and prevalence of hypertension among females working in selected foreign banks in the Greater Accra Region, Ghana

PARTICIPANT'S STATEMENT

I acknowledge that I have read the contents of the Participants' Information Sheet and I am satisfied with the explanations. I completely understand the contents as well as my right to withdraw from the research at any point even after I sign this form.

I willingly agree to be part of this study.

Name of Participant.....

Participants' Signature

Date:.....



INVESTIGATOR'S STATEMENT AND SIGNATURE

I acknowledge that all relevant information and clarifications about this study has been made known to the participant. The participant has read and understood the content and purpose of this research.

Researcher's name.....

Signature

Date.....

To contact for further information

Researcher: Call: 0596605633 Email: faithnomen@gmail.com or FOEhimhuan@st.ug.edu.gh

Noguchi Institutional Review Board: Call: 233302916438 Email: nirb@noguchi.ug.edu.gh



APPENDIX III: RESEARCH QUESTIONNAIRE

I am a graduate student of the School of Public Health, University of Ghana, Legon. This questionnaire is designed for the data collection on work-related stress and prevalence of hypertension among females working in selected foreign banks in the Greater Accra Region, Ghana. You have been selected to participate in the study by taking out time to fill this questionnaire. For this study, your personal and business details will be anonymous and your responses will be kept confidential.

SECTION A: Socio-Demographic Characteristics of Respondents

1) Age:

.....31..... years

2) Marital Status:

☐ Single ☐ Married ☐ Divorced/Separated ☐ Widowed

3) Highest Level of Education:

☐ High School ☐ Bachelor's Degree ☐ Master's Degree ☐ PhD

4) Job Position:

☐ Teller ☐ Manager ☐ Customer Representative ☐ Secretary

☐ Other (please specify).....

5) Years of Work:

☐ Less than 1 year ☐ 1-3 years ☐ 4-6 years ☐ 7-10 years ☐ 10+ years

6) Religion:

☐ Christian ☐ Muslim ☐ Traditionalist ☐ Other(Please specify).....

7) Hours of Work per Week:

☐ Less than 20 hours ☐ 20-30 hours ☐ 31-40 hours ☐ More than 40 hours

SECTION B: Work Characteristics

8) I am satisfied with the number of hours I work each day .

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

9) My job provides opportunities for career growth and development.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

10) My workload is manageable and does not cause me stress.

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

11) My physical work environment is comfortable and conducive for productivity

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree



SECTION C: Work-Related Stress (HSE management standard indicator tool)

Statement	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
12) I have unachievable deadlines.					
13) I have to neglect some tasks because I have too much to do.					
14) I am pressured to work long hours.					
15) I have a say in my own work speed.					
16) I have a choice in deciding what I do at work.					
17) I have a choice in deciding how I do my work.					
18) I can take breaks when I want.					
19) My supervisor encourages me at work.					
20) I can rely on my supervisor to help me with a work problem.					
21) My supervisor shows appreciation for the work I do.					

Statement	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
22) I receive the information I need to do my job properly.					
23) If work gets difficult, my colleagues will help me.					
24) My colleagues are willing to listen to my work-related problems.					
25) There is friction between colleagues.					
26) Relationships at work are strained.					
27) I know how to go about getting my job done.					
28) I am clear about my duties and responsibilities.					
29) I understand how my work fits into the overall aim of the organization.					
30) I have sufficient opportunities to question managers about change at work.					
31) Staff are always consulted about change at work.					
32) When changes are made at work, I am clear about how they will work out in practice					
33) I am worried about my job security					

SECTION D: Hypertension and Health Status

34) Have you been diagnosed with hypertension (high blood pressure) by a healthcare professional?

☐ Yes ☐ No

35) If yes, how long have you been diagnosed with hypertension?

☐ Less than 1 year ☐ 1-3 years ☐ 4-6 years ☐ More than 6 years

36) Do you take medication for hypertension?

☐ Yes ☐ No

37) Do you have a family history of hypertension?

☐ Yes ☐ No ☐ Unsure

38) How would you rate your overall stress level at work?

☐ Very low ☐ Low ☐ Moderate ☐ High ☐ Very high

39) How would you rate your overall health?

☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Excellent

SECTION E: Lifestyle habits

40) How often do you engage in physical exercise?

☐ Never ☐ Rarely ☐ Sometimes ☐ Frequently ☐ Always

41) How would you describe your diet?

☐ Very unhealthy ☐ Unhealthy ☐ Balanced ☐ Healthy ☐ Very healthy

42) How many meals do you typically eat in a day?

☐ 1 meal ☐ 2 meals ☐ 3 meals ☐ More than 3 meals

43) How often do you eat out or consume fast food in a week?

☐ Never ☐ 1-2 times ☐ 3-4 times ☐ 5 or more times

44) How often do you consume vegetables in a week?

☐ Never ☐ 1-2 times ☐ 3-4 times ☐ 5 or more times

45) How often do you consume processed or salty snacks (e.g., chips, pretzels)?

☐ Never ☐ 1-2 times a week ☐ 3-4 times a week ☐ Daily

46) Do you smoke?

☐ Yes ☐ No

47) If yes, how many cigarettes or tobacco products do you use per day?

☐ Less than 5 ☐ 5-10 ☐ 11-20 ☐ More than 20

48) Do you drink alcohol?

☐ Yes ☐ No

49) If yes, how often do you consume alcoholic beverages?

☐ Never ☐ Occasionally ☐ Weekly ☐ Frequently

50) how many bottles do you consume weekly?

☐ 2 - 3 ☐ 4 - 6 ☐ 7 - 8 ☐ 9 - 10

51) How many hours of sleep do you get on average per night?

☐ Less than 4 hours

☐ 4-6 hours

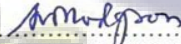
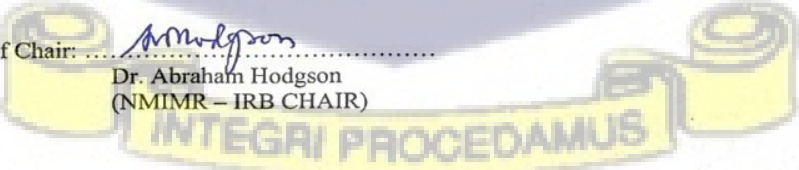
☐ 6-8 hours

☐ More than 8 hours

Thank you for your participation.



APPENDIX IV: ETHICS APPROVAL LETTER

 UNIVERSITY OF GHANA	NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH (NMIMR) COLLEGE OF HEALTH SCIENCES INSTITUTIONAL REVIEW BOARD
6th November 2024	
ETHICAL CLEARANCE	
FEDERALWIDE ASSURANCE FWA 00001824	IRB 00001276
NMIMR-IRB CPN 041/24-25	IORG 0000908
On 6th November 2024, the Noguchi Memorial Institute for Medical Research (NMIMR) Institutional Review Board (IRB) at a full board meeting review and approved your protocol titled:	
TITLE OF PROTOCOL :	Work-related stress and prevalence of hypertension among Females working in selected foreign banks in the Greater Accra Region, Ghana
PRINCIPAL INVESTIGATOR :	Baah Faith
Please note that a final review report must be submitted to the Board at the completion of the study. Your research records may be audited at any time during or after the implementation. Any modification of this research project must be submitted to the IRB for review and approval prior to implementation. Please report all serious adverse events related to this study to NMIMR-IRB within seven days verbally and fourteen days in writing. This certificate is valid till 5th November 2025. You are to submit annual reports for continuing review.	
Signature of Chair: ..... Dr. Abraham Hodgson (NMIMR – IRB CHAIR) 	
P. O. Box LG 581, Legon, Accra, Ghana Tel: +233 (0) 302-2916438 Email: nirb@noguchi.ug.edu.gh www.noguchimedres.org www.ug.edu.gh	
	