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**DETERMINANTS OF WORKPLACE STRESS AMONG NURSES OF THE
TAMALE TEACHING HOSPITAL.**

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DEGREE.**

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DECLARATION

I, MANSURATA HARUNA hereby declare that apart from references to other people's works which have been duly acknowledged, this dissertation was a result of my own independent work. I further declare that this dissertation has not been submitted for any degree in this institution or any other elsewhere.



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DEDICATION

I dedicate this work to my parents, siblings and my kids for their love, support and encouragement.

ACKNOWLEDGEMENT

I am most grateful to God Almighty for giving me the strength and protection to carry out this study. My sincere gratitude goes to my supervisor, Dr. U'ri Selorm Markakpo of the Department of Biological, Environmental and Occupational Health Sciences, School of Public Health, Legon for his wide knowledge, invaluable support and encouragement which have been of great value in the execution of this task. His understanding, encouragement and guidance have provided a good basis and guidance for the success of this dissertation. I also want to acknowledge my Head of Department, Professor Julius Fobil for accepting me into the course as well as his encouragement. Dr. Arku Mensah for his approachable nature and support. I deeply want to thank my friend Balagra Kasim Sumabe for his great support and encouragement throughout the course. Also, I appreciate all the lecturers in the school for their enormous contribution. My warmest appreciation goes to all the staff of Tamale Teaching Hospital, including the CEO and the ward in-charges for their cooperation and assistance in the administration of my questionnaires. Finally, God richly blesses all those who have, in one way or the other, contributed to the successful write up of this dissertation.

ABSTRACT

Background:

The increasing complexity of work and life has resulted in stress among all groups of workers including nurses. Though an issue of interest, there is scant research on its effects on nurses. This study was thus carried out to assess the prevalence of stress among nurses, the sources of stress and the coping mechanisms adopted to reduce stress among nurses of the Tamale Teaching Hospital (TTH).

Aims and objectives

The study assessed the prevalence and determinants of workplace stress among nurses of TTH. It also assessed the coping mechanisms nurses use to manage stress.

Methods

A cross-sectional study that adopted a quantitative data collection approach using structured questionnaires was used. 260 nurses were selected from a total of 746 nurses using a simple random sampling method. Descriptive statistics such as frequencies and percentages were used in summarizing and presenting the findings. *Chi-square* tests were also used to test the associations between socio-demographic features of nurses and workplace stress.

Findings

The study observed a high prevalence of workplace stress among nurses of TTH. Regarding the determinants of workplace stress, it was established that job role, demand, support and control factors had significant effects on the experience of stress among nurses. General coping mechanisms adopted by nurses included reading books, relaxing during off-work hours, taking leave of absence, and spending time with family and friends. In terms of implication, the study makes significant contributions to nursing practice and hospital administration regarding effective stress management.

Conclusion

This study would contribute greatly to a policy to improve the working conditions of nurses in order to minimize stress among them. It would also help educate hospital administration on effective stress management among nurses as a whole.

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DEFINITIONS OF TERMS

Job roles – is the description of what a person does at the workplace

Workload- the amount of work to be performed by a worker within a period of time

Support- to give assistance to a person

Regulations- rules made and withheld by an authority

Workplace stress – is an employee's way of responding to any form of demand placed on it.

LIST OF ACRONYMS

NHIS	National Health Insurance Scheme
RGNs	Registered General Nurses
TTH	Tamale Teaching Hospital
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to study

Stress is a state of mental or emotional strain or tension resulting from demanding circumstances. This is as a result of either negative or positive experiences. In situations where a person finds it difficult to deal with stressors such as frustrating life situations, problems and goals, stress occurs (Videbeck,2007). The outcome of stress can be physical, emotional and cognitive. In the past years, stress has been categorised as a stimulus or response to a situation Lazarus and Folkman (1984) also coined out that a psychological view whereby stress is viewed as a kind relationship between a person and his or her surrounding which is perceived as demanding and exceeding the resources at disposure as well as capacity of a person to handle hence compromising one's health or well-being.

Over the last decade, workplace stress has become an issue of great concern to employers and policymakers, both locally and internationally. It is not surprising that stress at the workplace appears to be increasing, given the significance of work to society, the amount of time spent at work coupled with the conditions of work (Szymanski, 1999; Colligan and Higgins, 2006; Kendall, 2000). Owing to the fast-changing global economy, organizations have transitioned to a culture of competition, increased speed, and efficiency (Somaz & Tulgan, 2003). Accordingly, economic imperatives coupled with the need for organizations to maintain or improve on their competitive advantage, sometimes result in restructuring. For instance, reducing the number of workers within an organization, increasing work time and merging of smaller organizations to form competitive organizations are now common occurrences. This situation leads to staff redundancy which often creates uncertainty and associated stress among workers. Significantly, such changes contributed to the alarming rise in chronic stress cases at workplaces (Kendall, Murphy, O'Neill & Bursnall (2000). In the early 1950s, claims of stress

were often linked with traumatic or life-changing experiences such as injury or violence.

Consequently, occupations most at risk of these kinds of stressors were police and army officers, medical practitioners, and community health care workers.

Globally, the rising costs due to workplace stress show a rising trend of stress and anxiety among many developed countries. For instance, in the Americas, more than one-tenth of study participants felt they are being under stress or strain (between 12 to 16%), feeling sad or depressed (9 to 13 %), or losing sleep (13 to 19 %) as a result of concerns about their working conditions (First Central American Survey on Working Conditions and Health, 2012). In the According to a *Stress in America* survey conducted in 2015 in the United States, respondents reported their stress level as 4.9 on a 10-point scale with the most commonly reported sources of stress being work, money, the economy, personal health and family responsibilities (Anderson et al, 2015). In Canada, 57% of total respondents reported high perceived stress, representing an increase from 54% in 2001 and 44% in 1991 as reported in previous studies (Duxbury & Higgins, 2012).

likewise, in a stress and wellbeing survey conducted in Australia in 2014, 48% of the participants cited work demands in both the public and private sectors as a barrier to maintaining a healthy lifestyle (Saleh, Eltahlawy, & Amer, 2016). However, unlike in developed contexts, data on workplace stress in countries of the global south particularly in Africa is limited (Saleh, Eltahlawy, & Amer, 2016). Nonetheless, the absence of such data should not be considered an indication that workplace stress does not exist. More importantly, such an absence of statistics on stress communicates the need for studies that seek to determine the prevalence rate of occupational stress across both the public and private sectors. Where such studies exist, they have largely focused on factors associated with work stress (Mkumbo, 2014) and the impacts of work stress and burnout on job performance (Sikpa, 2011; Sai, 2014; Jaradat, 2017).

Workplace stress is not exclusive to a specific professional field. However healthcare professionals particularly nurses are highly susceptible to stress due to emotional stress arising from the management of patients and other stressful activities (Ministry of Health, 2012; Jaradat, 2017). Nurses, in particular, are often exposed to a range of psychological, emotional and social stressors such as long working hours, lack of resources and poor reward systems (Lim *et al.*, 2010). Crucially such working conditions, characterized by increasing pressure to bridge the health care service delivery gap among health workers have adverse effects on their health and general wellbeing.

Studies have determined that persistent exposure of nurses to psychological and social stressors could produce considerable levels of job stress, resulting in varying negative short and long-term health and job performance outcomes (Piko, 2006; Khamisa *et al.*, 2013). Among healthcare professionals, nurses have been reported to experience the highest levels of stress (Pikó, 2006). In Ghana, however, though some studies have explored the determinants of work stress among healthcare personnel particularly nurses, many of such studies fail to disclose clearly the category of nursing personnel that participated in those studies. This study thus hoped to address such a research gap by focusing solely on Registered General Nurses (RGN). In addition, not much scholarly evidence exists regarding possible gender variations in levels of workplace stress experienced by male and female RGNs. That is, do male and female nurses experience similar or varying levels of workplace stress? Moreover, a review of existing literature on workplace stress among nurses often highlights policy and interventions put in place by administrators of health centers to curb stress (Adams, Darko, & Accorsi, 2004; Abor, Abekah-Nkrumah, & Abor, 2008). However, not much is known regarding individual coping mechanisms adopted by nurses to deal with workplace stress. That is when faced with stress, what measures do individual nurses take to handle it.

This study, therefore, sought to add to the existing literature by assessing possible determinants of workplace stress, gender variations in stress levels experienced, and individual coping mechanisms adopted when faced with stress. The study would thus contribute to scholarly knowledge and policy formulation to minimize stress among nurses.

1.2 Problem Statement

Workplace (or occupational) stress is a major health concern at workplaces, as it can adversely affect the physical, psychological and emotional wellbeing of employees and contributes to low productivity as well. A high prevalence of workplace stress has consistently been reported among nurses in the health sector. Nursing is undoubtedly a stressful profession due to frequent and continuous exposure to patients in pain and the need to give attention and support to such individuals (Lambert & Lambert, 2008). Stress among nurses could also contribute to poor health care delivery that could result in the deaths of patients. This calls for the need for research to focus on exploring the causes of workplace stress among nurses and measures that should be put in place to minimize stress among nurses. In TTH, the job description of health workers is often cited as a major cause of excessive workload and stress. For instance, the Medical Superintendent, in addition to duties related to hospital administration, is also tasked with the treatment of patients as a core function. Likewise, nurses play multiple roles including but not limited to administering medication to patients, observing and monitoring patient conditions and maintaining patient health records which could contribute to stress that in turn could affect the health and job performance of nurses.

Although there are considerable indications of workplace stress particularly among nurses in Ghana, the indicators of work stress are not well defined by scholarly evidence.

Roman *et al* (2006) reported that professional nurses (registered general nurses) experience higher levels of stress than auxiliary nurses. Though some studies have explored the

determinants of stress among some health workers particularly, nurses in Ghana. These studies have, however, not defined the category of nurses that participated in the study.

In addition, not much scholarly evidence exists regarding possible gender variations in levels of workplace stress experienced by Registered General Nurses (RGN).

In fact, there remains some unpublished work on the subject in TTH. That is, although nurses in TTH may be experiencing work-related stress, the extent or level of stress however remains unknown. Moreover, what constitutes the most common stressors among nurses is also yet to be determined. This study, therefore, sought to find solutions to such research problems as highlighted above by assessing the determinants of workplace stress and stress coping mechanisms among RGNs in TTH.

1.3 Conceptual Framework

Figure 1 below summarized the conceptual framework for assessment of the determinants of workplace stress among nurses of the Tamale Teaching Hospital.

Miles and Huberman, 1994; cited by Gray, 2004, define a conceptual framework as a visual or written product, one that explains the main concepts and the relationship among them. This framework is used to explain the determinants of stress among nurses. The framework depicts the factors or combination of factors that influence workplace stress in nursing practice. Depending on the prevalence of one or a combination of these determinants the level of stress could be less, minimal or high. Independent variables such as demographic characteristics (age, sex, marital status, level of education and rank of nurses have direct influence on workplace stress. To them, in situations such as death and increased workload, married nurses were more likely to experience higher stress levels compared to nurses who were reportedly divorced or not married. Similarly, younger nurses or those at the early stages of their careers were also more likely to experience higher stress levels than older or more experienced ones (Cohen-Katz

et al., 2005). It, however, remains to be seen whether demographic factors of staff nurses in TTH, significantly influence workplace stress levels.

The work environment also can bring about stress, the kind of work environment nurses often work in such as prolong working hours, shift work as well, all contribute to stress (Cohen-Katz *et al.*, 2005).. Generally, the sources of workplace stress among health professionals are often associated with the nature of the profession. Likewise, in the work environment, sources of stress among nurses include new technology, extra workload, and ambiguous and conflicting work roles (Arnold, Cooper and Robertson, 1998; Jennings, 2008). It can be deduced from the above that workplace stressors are mostly within the work environment and not necessarily as a result of external factors.

In a different study, Rothmann, van der Colff and Rothmann (2006) identified severe workplace stressors to include watching patients suffer, discriminatory attitudes, and increased work demands, health risks associated with coming into contact with patients, lack of motivation, and time constraint to perform certain tasks. Indeed, such work-related issues can result in emotional exhaustion among nurses due to the physically and mentally demanding nature of job roles. Moreover, intra-professional (among nurses) and inter-professional (among nurses and physicians) conflicts often manifested in the form of bullying or disagreements over assigned work duties also continue to be an important source of stress among nurses (Bratt, Broome, Kelber & Lostocco, 2000)..

According to Karasek and Theorell (1990), a factor contributing to workplace stress among nurses is the imbalance between psychological demands and the level of control that nurses have over their work. That is, the greater work demand placed on individual nurses coupled with a low level of work control, the higher the risk that they become physically and/or psychologically stressed, resulting in adverse effects on the health of affected nurses. Correlating the above findings, a descriptive study on workplace stress among nurses in the

Greater Accra region of Ghana established that significant stressors among nurses included the lack of control overwork, and the death of patients (Dapaa, 2014; Dorcoo, 2016).

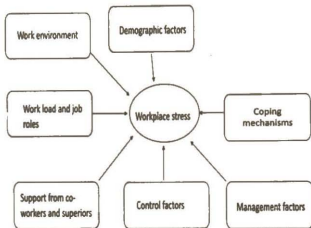


Figure 1. Conceptual framework

The conceptual framework above highlights the possible relationship between variables that affect workplace stress among health practitioners, particularly nurses.

Demographic factors

The demographic factors of nurses such as age, gender, marital status and nursing ranks have been reported to influence varying their experiences of workplace stress and the coping mechanisms adopted therein. According to Rothmann, van der Colff and Rothmann (2006), significant differences exist in nurses' perception of individual stressors in relation to their age.

marital status and educational level. Additionally, in situations of increased workload or death of patients, married nurses were more likely to experience higher stress levels compared to divorced or not married nurses (Sarafis *et al.*, 2016). Marriage and parenting are significant sources of stress. It is logical to assume that unmarried nurses are less likely to have that extra burden of stress coming from marriage and parenting.

Though men and women are exposed to same stress at workplace, women are reported to be exposed to other unique stress variables such as stereotyping. Hence, the role of gender in workplace stress varies

Work environment and nature of work

In nursing practice, nurses often find themselves in a stressful work environment characterized by long working hours, running shifts and working on holidays, all of which contribute to high-stress levels. In the same way, the nature of work, job roles and the workload assigned to nurses could have an effect on the level of workplace stress among nurses and to a large extent determines the effectiveness of coping mechanisms adopted by such nurses. The work environment is a significant source of stress in any workplace, particularly in the hospital environment. The type of furniture and lighting system used could adversely affect workers and lead to stress. The office space for instance if too small could lead to conflicts and thus increase the level of stress. Lack of or inadequate logistics such as stretchers, wheelchairs in a given facility could increase the level of stress for health workers. The emotions of patients and most often their relatives have to be managed by a nurse on a daily basis. The behavior of patients or their relatives is also a source of stress for health workers. There are situations where patients and/or their relatives were found insulting health workers. The prevalence of these in a given facility could lead to a high level of stress.

Working in a toxic work environment exposes employees to increased anxiety, extreme pressure and fear, hence increasing their stress levels. Management of any organisation should strive at eliminating such work environments (Macklem,2005; Karasek & Theorell, 1990)

Level of support

The level of support such as logistics and emotional or psychological support from colleagues and superiors has been associated with the level of workplace stress among nurses. Some studies indicate that professional nurses reportedly experienced more workplace stress due to disputes with colleague nurses and medical practitioners concerning patient intervention plan. Job demands such as heavy workload and work pressure increase tiredness and stress and can also lead to health complications (MacDonald, 2003).

A high level of support under normal circumstances should lead to a lower level of stress. Support from all levels of the organization is vital for effective stress management. Support, both soft and hard is critical. Soft support such as encouragement when things go bad, motivation, praises when necessary from colleagues and management are very important in stress management. Management should endeavour to make logistics available for health workers to do their job. The lack of or inadequate numbers could lead to internal conflicts which constitutes a major source of stress.

Management and control factors

Finally, studies have shown that management and control factors such as supervision and organizational chain of command could contribute to the level of stress among healthcare practitioners. According to Karasek and Theorell (1990), a factor contributing to workplace stress among nurses is the imbalance between psychological demands and the level of control that nurses have over their work. That is, the greater work demand placed on individual nurses

coupled with a low level of work control, the higher the risk that they become physically and/or psychologically stressed, resulting in adverse effects on the health of affected nurses (McNeely, 2005).

1.4 Justification

Tamale Teaching Hospital joined the Ghana National Health Insurance Scheme (NHIS) in 2003, and since then the number of cases attended to by nurses of the hospital keeps increasing. This posed a significant work demand on health practitioners particularly nurses of the hospital. The nurse-patient ratio is particularly a challenge in the health sector of Ghana, and the case of Tamale Teaching Hospital was no exception and constituted a major stressor among nurses. Moreover, there was also growing concern regarding the quality of service delivery provided by nurses due to the high workload placed on them (Offei & Quansah, 2009). While it is acknowledged that nurses play major roles in the provision of timely and quality services, the high levels of workplace stress among them tend to impact negatively on their performance. However, regarding TTH, no knowledge existed regarding the extent to which workplace stress affects the work performance of nurses. In addition, possible variations in workplace stress and coping mechanisms adopted by male and female nurses were yet to be ascertained prior to this study.

Studying the determinants of workplace stress among nurses of TTH could possibly result in sensitizing the Ministry of Health, their staff and all stakeholders of healthcare delivery on the need to implement policies that would address the issue of workplace future research in the area of workplace stress and its management among health workers in Ghana.

1.5 Research questions

The study answered the following research questions.

1. What are the determinants of workplace stress among nurses?
2. How similar or different are the levels of workplace stress among male and female nurses?
3. How do individual nurses in TTH cope with workplace stress?

1.6 Objectives

1.6.1 General objectives

To assess the determinants of workplace stress and coping mechanisms among nurses of TTH.

1.6.2 Specific objectives

2. To examine the factors that contribute to workplace stress among nurses
3. To assess the gender variations in workplace stressors among male and female nurses.
4. To ascertain the coping mechanisms adopted by individual nurses in dealing with workplace stress.

1.7 Organization of study

This study was organized in six (6) chapters. Chapter one gave an introduction to the study, capturing a background to the workplace among nurses. The chapter also contained the problem statement, research questions and objectives, conceptual framework and justification for the study. In chapter two, a detailed and critical review of pertinent literature on workplace stress among health professionals particularly nurses was discussed. Such a literature review indeed served as a guide to the study and subsequently informs the research methodology and the findings of the study. Chapter three of the study showed a description of the methodological approach to the study. It captured and explains the chosen research design, study location, study

variables, sample size and sampling techniques, data collection tools and analysis, issues of ethical concern among others. In chapter four, results and data analysis was conducted, informed by the research questions and theoretical underpinnings of the study. Chapter five provided a comprehensive discussion of the research results.

Chapter six (6) comprised of fitting conclusions and recommendations based on the findings of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, a critical and detailed review of pertinent literature on workplace stress among health professionals particularly nurses is conducted. The chapter begins with a review of various conceptual definitions of stress and workplace stress, stress among nurses, factors contributing to stress among nurses, and strategies adopted by nurses to cope up with workplace stress.

2.1.1 Definition of Stress

The definition of stress varies. For instance, it can be defined as an inappropriate response of one's body to a particular phenomenon (Spence *et al.*, 1999; World Health Organization, 2003). Similarly, stress can be defined as unfriendly physical, social and emotional body responses that occur when the body is subjected to workload more than its capability (Roohafza *et al.*, 2012), a common observance is that stress is mostly a consequence of task overload and results in negative emotional and physical effects to humans.

Moreover, according to the UK Health and Safety Executives (HSE) Management Standards (2010), stress is an external organization factor or stimulus that causes physical, emotional or mental discomfort for employees in an organization. However, it is worth indicating internal organizational factors could also result in stress. For instance, Yeboah *et al.* (2014) point out that the nature of the work environment, relationship with co-workers or superiors as well as resource capacity of an organization could constitute significant stressors. Besides, not only employees experience stress or discomfort but even employers or management as individuals also experience stress where specific job demands result in an overload.

2.1.2 Workplace stress

Workplace stress simply refers to stress pertaining to the specific conditions of the workplace. It is often described as unhealthy human physical and psychological reactions that occur when there is a mismatch between job requirements and the resources, abilities and the needs of employees of an organization. Moreover, workplace stress has been defined as an excessive, inappropriate, or uncontrollable response to workplace demands placed on employees (Roohafza *et al.*, 2012).

The Spielberger State-Trait (STP) model of occupational stress (Spielberger, Vagg & Wasala, 2003) views stress as a process comprising three main parts: (1) the source of stress within the work environment; (2) how stressors are perceived by employees; (3) emotional responses that stressors generate. The model places considerable focus on two major sources of workplace stressors which include the lack of support, and pressure from workplace demands. Assessment of job demands including the difficulty level of specific job tasks, the working environment and support received from colleagues and superiors or organizational features such as policies or procedures are the employee assumptions (Spielberger *et al.*, 2003).

2.1.2.1 Prevalence of Workplace stress among nurses

Stress became a known concept in nursing due to empirical evidence gathered that links stress with the health and job performance of health workers, particularly nurses. In a study conducted by Filha, Costa and Guilam (2013) on workplace stress among nurses in Campo Grande in Brazil, it was established that employees who were new at the workplace experienced higher work stress compared to those who had worked at a hospital or clinic for a longer period of time. Likewise, a significant association was found between nurses who did more on-call night duties, unspecified working hours extra on-call duties weekly, than nurses who did not. Moreover, nurses who reported being dissatisfied with their work and had less social support

had high strain at work. However, no significant difference was observed in relation to their satisfaction in life. In addition, no correlation was recorded between nurses with higher income and education and the level of workplace stress experienced.

In a different study on workplace stress among nurses in South Africa, Rothmann, van der Colff and Rothmann (2006) observed that severe workplace stressors included health risks associated with coming into contact with terminally ill patients, poor staff motivation, increasing demands from patients, lack of commitment to work by colleague nurses. Comparing differences between professional and auxiliary nurses, the findings showed that professional nurses experienced more stress due to the fear of making mistakes at the workplace that could result in the death of a patient.

Furthermore, professional nurses reportedly experienced more workplace stress due to disputes with colleague nurses and other health care workers concerning patient intervention plan (Rothmann, van der Colff and Rothmann, 2006). However, in a separate analysis, it was revealed that significant differences exist in how nurses perceive individual stressors in relation to their age, marital status and educational level. Also, in situations of increased workload or death of patients, married nurses were more likely to experience higher stress levels than divorce or single nurses. Additionally, younger nurses also recorded higher stress levels in comparison with older nurses (Rothmann, van der Colff and Rothmann, 2006).

In a different study, Rodrigues and Ferreira (2011) investigated stressors among nurses working in intensive care units across hospitals in Portugal. It was established that higher stress levels were noticed among nurses within the early stages of their career, with poor physical work structures also found to contribute to high stress among nurses. According to Rodrigues and Ferreira (2011), poor interpersonal relations among nurses or management staff of hospitals escalated stress levels among nurses. Particularly, nurses who reportedly experienced bad interpersonal relationships with their superiors in the wards resulted in higher stress levels.

2.2 Factors contributing to stress among nurses

Generally, the sources of workplace stress among health professionals are often associated with the nature of the profession. In nursing practice, the intense work environment nurses often find themselves in, long working hours, running shifts as well as working on holidays all contribute to high-stress levels (Cohen-Katz *et al*, 2005). Likewise, in the work environment, sources of stress among nurses include new technology, extra workload, and ambiguous and conflicting work roles (Arnold, Cooper and Robertson, 1998; Jennings, 2008). It can be deduced from the above that workplace stressors are mostly within the work environment and not necessarily as a result of external factors.

In a different study, Rothmann, van der Colff and Rothmann (2006) identified severe workplace stressors to include watching patients suffer, discriminatory attitudes, and increased work demands, health risks associated with coming into contact with patients, lack of motivation, and time constraint to perform certain tasks. Indeed, such work-related issues can result in emotional exhaustion among nurses due to the physically and mentally demanding nature of job roles. Moreover, intra-professional (among nurses) and inter-professional (among nurses and physicians) conflicts often manifested in the form of bullying or disagreements over assigned work duties also continue to be an important source of stress among nurses (Bratt, Broome, Kelber & Lostocco, 2000).

In another study, Milutinovic *et al* (2012) suggest individual demographic characteristics such as marital status, age, gender and level of education of nurses constitute significant determinants of stress levels experienced by nurses. To them, in situations such as death and increased workload, married nurses were more likely to experience higher stress levels compared to nurses who were reportedly divorced or not married. Similarly, younger nurses or those at the early stages of their careers were also more likely to experience higher stress levels than older

or more experienced ones (Cohen-Katz *et al.*, 2005). It, however, remains to be seen whether demographic factors of staff nurses in TTH, significantly influence workplace stress levels. According to Karasek and Theorell (1990), a factor contributing to workplace stress among nurses is the imbalance between psychological demands and the level of control that nurses have over their work. That is, the greater work demand placed on individual nurses coupled with a low level of work control, the higher the risk that they become physically and/or psychologically stressed, resulting in adverse effects on the health of affected nurses. Correlating the above findings, a descriptive study on workplace stress among nurses in the Greater Accra region of Ghana established that significant stressors among nurses included the lack of control overwork, and the death of patients (Dapaa, 2014; Dorcoo, 2016).

2.3 Determinants of workplace stress

2.3.1 Demographic factors

As indicated in the framework above, the demographic factors of nurses such as their age, gender, marital status and nursing ranks influenced varying their experiences of workplace stress and the coping mechanisms adopted therein. According to Rothmann, van der Colff and Rothmann (2006), significant differences exist in nurses' perception of individual stressors in relation to their age, marital status and educational level. Also, in situations of increased workload or death of patients, married nurses were more likely to experience higher stress levels compared to divorced or not married nurses. Marriage and parenting are significant sources of stress. It is logical to assume that unmarried nurses are less likely to have that extra burden of stress coming from marriage and parenting. It could be argued though that not being married could be a source of stress if this category of nurses actually desires to marry and have made marriage a priority. Being unmarried could, in fact, be a source of stress.

The age of a nurse can influence the level of stress of the nurse. The physiology tends to change as an individual grows older, this comes along with weakening of the immune system and the body in general. Old age is suggested to be associated with prevalence of stress at workplace (Götz, 2018).

Though men and women are exposed to the same stress at the workplace, women are reported to be exposed to other unique stress variables such as stereotyping. Hence, the role of gender in workplace stress varies depending on the type of stressors being considered in the study. Due to gender differences in the physiology and genetic makeup, differences in stress levels between men and women has been reported (Taylor *et al.*, 2000).

Shift work particularly night shift has been found to be one of the factors that greatly increase stress levels among workers. Night shift contributes to increase in workplace stress by disturbing the normal psychophysiological activities of the brain, deteriorating the employee's health through abnormal sleep and eating patterns which can further lead to complications such as gastrointestinal, cardiovascular and neuropsychiatric disorders (Costa, 1996).

An educational level could influence one's stress management and coping abilities and invariably affect his/her stress level. It must be noted that the ability to manage stress has a direct impact on the level of stress in any given context. For instance, the level of stress that a given stimulus or situation will exert on Mr. A might be different from its impact on Mr. B. because of the experiences or age of Mr. B. It may be more stressful if a patient dies in the hands or under the care of Mr. A if that occurrence was the first time Mr. A is experiencing the death of a patient under his care. The effect might be different in the hands of Mr. B if he had gone through such experiences in the past. The educational level of people exposes them to many things and prepares them for life. All things being equal, a highly learned nurse should better manage stress than a nurse with a lower qualification. The adage that knowledge is power clearly depicts this phenomenon. The conceptual framework, therefore, conceptualizes that age,

marital status, gender and educational qualification of a nurse can influence the level of stress of the nurse.

2.3.2 Work environment and nature of work

In nursing practice, the intense work environment nurses often find themselves in, long working hours, running shifts as well as working on holidays all contribute to high-stress levels. In the same way, the nature of work, job roles and the workload assigned to nurses in TTH had an effect on the level of workplace stress among nurses and to a large extent determined the effectiveness of coping mechanisms adopted by such nurses. The work environment is a significant source of stress in any workplace, particularly in the hospital environment. The type of chairs, tables and lightening could affect workers and lead to stress. The office space for instance if too small could lead to conflicts and thus increase the level of stress. Nurses are sometimes compelled to rest on benches. Lack of or inadequate logistics such as stretchers, wheelchairs in a given facility could increase the level of stress for health workers.

Admittedly, nursing is intensive and unique in the sense that human beings are involved. The emotions of patients and most often their relatives have to be managed by a nurse on daily basis. The behaviour of patients or their relatives is a source of stress to health workers. We have situations where patients and/or their relatives insulting health workers. The prevalence of these in a given facility could lead to high level of stress.

Working in a toxic work environment exposes employees to increased anxiety, extreme pressure and fear, hence increasing their stress levels. Management of any organization should strive at eliminating such work environments (Macklem, 2005; Karasek & Theorell, 1990).

2.3.3 Level of support

Furthermore, the level of support such as logistics and emotional or psychological support from colleagues and superiors influences the level of workplace stress among nurses. Other studies indicate that professional nurses reportedly experienced more workplace stress due to disputes with colleague nurses and medical practitioners concerning patient intervention plan. Job demands such as heavy workload and work pressure increase tiredness and stress and can also lead to health complications (MacDonald, 2003).

A high level of support under normal circumstances should lead to a lower level of stress. Support from all levels of the organization is vital for effective stress management. Support, both soft and hard is critical. Soft support such as encouragement when things go bad, motivation, praises when necessary from colleagues and management are very important in stress management. Management should endeavour to make logistics available for health workers to do their job. The lack of or inadequate numbers could lead to internal conflicts which constitute a major source of stress.

2.3.4 Management and control factors

Finally, studies have shown that management and control factors including supervision and organizational chain of command could contribute to the level of stress among healthcare practitioners. According to Karasek and Theorell (1990), a factor contributing to workplace stress among nurses is the imbalance between psychological demands and the extent of control nurses have over their work. That is, the greater work demand placed on individual nurses coupled with a low level of work control, the higher the risk that they become physically and/or psychologically stressed, resulting in adverse effects on the health of affected nurses.

2.3.5 Workload and job roles

Employees often face stressful demands such as heavy workload and work pressure (Anderson & Pulich, 2001). Employers often expect employees to work for specific hours, at a certain pace and give a particular work output. This in combination with the busy working environment, heavy workload and work pressure can negatively impact the wellbeing and health of employees (Costa, 1996; MacDonald, 2003).

2.4 Stress coping strategies

Stress coping strategies are very important factors that help individuals to physically, psychologically and socially adapt successfully to everyday stressors. The way an individual responds to a stressful event is as important as the stress itself. Moreover, stress coping strategies can be described as positive or negative, reactive or active. However, according to Shields (2001), active or reactive ways of dealing with stress could either be positive or negative and is largely dependent on the peculiar nature of the stress situation and the response to the environmental stressor. Indeed, the literature on stress coping strategies shows that individuals often adopt more than one approach to managing or curbing stress.

Regarding stress coping strategies, Spielberger and Vagg (1999) opine that the successful identification of the main sources of workplace stress among nurses provides two-way benefits for both employees and management. To begin with, it helps identify the needed changes at the workplace that will reduce stress levels among workers and increase productivity. Moreover, a successful appraisal of the sources of stress is key to planning and developing effective interventions required to reduce the negative effects often associated with workplace stress, particularly in the nursing profession (Spielberger and Vagg, 1999).

There is nothing like a stress-free working environment, hence employees must take it as a responsibility to adopt certain positive mechanisms in order to cope up with stress. Stress coping

strategies are often directed towards emotional distress or problem causing distress (Lazarus and Folkman, 1984; Help Guide, 2007).

In the nursing field, positive coping strategies include venting to, giving and receiving social support (Callaghan, Tak-Ying & Wyatt, 2000). They also identified certain negative coping strategies adopted such as smoking, excessive use of drugs, consumption of alcohol, and absence from work. In a different study, some nurses resorted to eating food to cope with workplace stress (Hope, Kelleher & O'Connor, 1998). Likewise, Sullivan (1993) identified stress coping strategies adopted by nurses to include problem-solving techniques, accepting responsibility, positive thoughts about work and life, and avoiding stressful situations.

Several coping strategies people often adopt in dealing with stress including seeking social support, problem-solving, exercising self-control and accepting responsibility have been described (Lazarus and Folkman, 1984; Lambert *et al.* 2004). These coping strategies, however, tend to vary geographically and among people (Lambert *et al.* 2007).

Laal and Aliramaie (2010) assessed how Iranian nurses cope with stress found that having positive thoughts about work situations as well as buying books constituted effective stress coping mechanisms among nurses. Furthermore, taking part in group games, participating in conferences, attending film or music concerts, excursions to the park, praying or meditating, and chatting with friends or family about work issues all constitute workplace stress relievers (Timby, 2008). However, it is worth reiterating that stress coping strategies adopted in a particular situation depend more on individual differences among nurses, past experiences or the nature of the situation.

2.5 Summary

From the literature reviewed above, it is established that workplace stress among healthcare professionals particularly nurses is indeed high. However, there are varying degrees of workplace stress experienced by nurses depending on individual differences among nurses, past experiences of stress, work demands, and organizational structures in dealing with stress. Despite this, just a few studies have been carried out in Ghana on workplace stress determinants and management among nurses.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter gives a detailed description and explanation of the methodology that will be adopted for the study. It captures the research design, study location, study variables, sample size and sampling techniques, data collection tools and analysis, issues of ethics among others. The chapter sets the tone for the rest of the study, particularly the research outcome and the subsequent interpretation of such an outcome.

3.2 Research design

A cross-sectional quantitative design was adopted for this study. The study establishes the determinants of workplace stress among nurses in TTH, using administered questionnaires.

3.3 Study location

This study was carried out in TTH. TTH is a regional hospital in the regional capital of the Northern region of Ghana, Tamale. This city is located along latitude 9.4034° N, and longitude 0.8424° W. TTH was established in 1974 and was formerly known as the Tamale Regional Hospital. The main aim of its establishment was to provide various healthcare services to the people of Northern Ghana. Its status was upgraded to a teaching hospital in 2005 by the Northern Regional Coordinating Council in collaboration with the Ghana Health Service. As a result, it became the third teaching hospital in Ghana after the Korle Bu Teaching Hospital and the Komfo Anokye Teaching Hospital.

TTH serves as the main referral hospital for the northern part of Ghana. The hospital functions in three core areas; it provides clinical health services, supports the training of both undergraduate and postgraduate students in health and medical sciences and it also carries out

health research for improved healthcare delivery. It is a 380-bed capacity hospital which provides both general and specialist services in the following areas. Obstetrics and Gynaecological care, General Surgery, Internal medicine, Paediatrics, Public Health, ENT (ear, nose and throat), Chest Clinic, an aesthetic clinic, diabetic clinic and intensive care unit. Psychiatric unit dental clinic and an eye unit.

In addition, TTH has the following support services; Laboratory/ Blood Bank, Radiology/Ultrasound scan, Electrocardiogram (ECG), Pharmacy, Physiotherapy and Pharmacy Other facilities are Mortuary, Catering, Laundry/Tailoring, Stores and supplies CSSD (Central Sterilisation Supply Department). It has a staff strength of 2,232 of which 746 are registered general nurses. The location of the TTH in the Tamale Metropolis is shown in figure 2 (the map) below.

Co-ordinates: 9.4034° N, and longitude 0.8424° W



Figure 2. A map of Tamale metropolis showing the location of TTH.

3.4 Study variables

The independent and dependent variables that influence development stress among participants are as follows.

3.4.1 Independent variables

- Socio-demographic features of nurses (age, gender, marital status, rank, level of education)
- Job roles.
- Workload.
- Support from co-workers and superiors.
- Organization policy and regulations on workplace stress.
- Coping strategies

3.4.2 Dependent variables

- Workplace stress

3.5 Sampling Procedure

A simple random sampling technique was used to select study participants. There are 39 units in the hospital that registered nurses work in. Each ward has an average of 19 nurses. With a sample size of 260 nurses, a total of 7 nurses were chosen from each ward using the lottery technique, registered nurses were randomly selected, while carefully ensuring that no nurse is sampled twice. The choice of this technique was to ensure that all registered nurses in the various wards of TTH had an equal chance of being selected for the study. The wards in which the study population was recruited are: Aseptic ward, Plastic, Urology, Neurology, Medical, Accident and Emergency, Ear, nose and throat ward, eye clinic, main theatre

3.6 Inclusion and exclusion criteria

The population under study comprised all full-time Registered General Nurses of TTH. The total established nurse population of the hospital is 746, spread across 39 units. Out of this population, a representative sample size was drawn to elicit their views concerning workplace stress and possible coping mechanisms adopted by nurses. Other hospital staff such as Medical Doctors and Hospital Administrators were not considered for the study because they do not spend extended time with patients compared to nurses. As such, their experience of workplace stress may be different or less than that of nurses.

3.7 Sample size calculation

The sample size was calculated using Yamane's formula (Yamane, 1973):

$$n = \frac{N}{1 + Ne^2}$$

Where, n = corrected sample size

N = Population size

e = Margin of error (0.05)

From my study population,

N = 746

e = 0.05

$$\text{Corrected sample size, } n = \frac{746}{1 + (746) \times (0.05)^2}$$

n = 260

Therefore, a total of 260 nurses across all wards were included in the study.

3.8 Data collection tools

Semi-structured questionnaires, containing both open and close-ended questions were used to collect the data. The questionnaire had four sections (A-D). Section A consists of demographic

characteristics of respondents (sex, age, rank, educational level, marital status, ward, number of years in nursing and shift-type). Section B consist of the prevalence of stress with 19 items ranging from 0-3. Section C consists of Factors contributing to workplace stress with 5 rankings (Never, Rarely, Sometimes, Often and Always). Lastly, Section D has a rating scale of 4 (Never true, Occasionally true, Often true and Always true).

3.9 Data collection procedure

The objectives and purpose of the study were explained to the participants. Questionnaires were then administered to the study participants to fill.

3.10 Data processing and analysis

Data collected were analysed using SPSS (version 16). Quantitative data gathered was initially coded, with variables defined in accordance with research questions to generate descriptive statistical results. Such descriptive statistics were subsequently transformed into tables that highlight the major findings of the study. For instance, stress levels were analysed descriptively with frequencies and percentages. Likewise, the *chi-square* test was used to test for association between stress levels of nurses and their demographic characteristics using a P-value of ≤ 0.05 to determine the significance of the association.

3.11 Pre-testing

The questionnaires were pre-tested at the Tamale Central Hospital. It was carried out on 15 nurses, the purpose of conducting a pre-test was to evaluate the reliability, consistency, coherence and clarity of the questions before the real data collection process.

3.12 Quality control

To improve the quality of the study, my research supervisor and colleague students reviewed the sampling approach and the data collection tool to determine their suitability for the study. The questionnaire was revised based on the information gathered from the pretesting exercise carried out at the Tamale Central Hospital where registered nurses work.

3.13 Ethical clearance

Approval for the study was obtained from the Ethical Review Committee of the Ghana Health Service (GHS-ERC). Permission was also sought from the Management of TTH. Finally, consent was also sought from the participants before conducting the study.

3.13.1 Access and Approval of study area

The principal investigator visited the study area personally to notify the management of TTH about the intention to conduct the study. An introductory letter was also obtained from the Head of Department School of Public Health, College of Health Science and the University of Ghana, and sent to the hospital for permission to conduct the study. Subsequently, a copy of the approval letter from the Ghana Health Service Ethical Review Committee was also sent to the respective authorities.

3.13.2 Privacy and Confidentiality

In order to ensure privacy and confidentiality, the questionnaire was coded, and the names of respondents were not required in filling out the questionnaire. Participants' names were also not mentioned in the study report and information gathered on participants was kept strictly confidential between the principal investigator and the study participants.

3.13.3 Compensation

Regarding compensation, recruited respondents who decided to participate in the study were not given any monetary compensation. However, the findings of the study will be made available to the management and staff of TTH to be used as a source of reference regarding stress management of staff. Significantly, recommendations made by this study could be used to formulate institutional and national policies regarding workplace stress.

3.13.4 Risks and Benefits

The study did not pose any major risks to participants apart from the time spent in answering questions and some questions about their personality such as age which they might not be comfortable in answering. In line with maintaining moral principles during the research process, considerable efforts were made to clearly explain the purpose and objective of the study to the participants, and their consent sought before filling the questionnaires. In light of this, study participants were provided with a detailed explanation of the purpose of the research and the research process in a clear and concise manner.

3.13.5 Voluntary withdrawal

Participation in the study was entirely voluntary and participants had the right to choose not to answer any individual question or all the questions. Participants were at liberty to withdraw from the study at any point in time. However, participants were encouraged to fully participate to ensure that findings from the study were a true reflection of the factors being investigated in the study area. In the event of any withdrawal by a participant, all data gathered on the participant were deleted or destroyed as required.

3.13.6 Informed Consent and Consenting process

Consent was obtained from participants before the commencement of the study. In line with maintaining moral principles during the research process, considerable efforts were made to clearly explain the purpose and objective of the study to the informants, and their consent sought before the commencement of any interview. In light of this, study participants were provided with a detailed explanation of the purpose of the research and the research process in a clear and concise manner. In addition, respondents were made to sign a written consent form after a detailed explanation of the study.

3.14 Data storage and usage

Data collected in this study was strictly for research purposes. The data was subsequently stored with passwords on electronic media and safely locked boxes. Anonymity was ensured in the dissemination of findings from this study since participants were not identified by names.

3.15 Declaration of conflict of interest

I hereby declare no conflict of interest.

3.16 Funding for the study

This study was self-sponsored by the principal investigator.

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings and discussions from field data collected on the determinants of workplace stress and coping mechanisms adopted by nurses of TTH. The chapter begins with a presentation and analysis of the socio-demographic features of study participants, the prevalence of workplace stress, the determinants of workplace stress, as well as the coping mechanism adopted therein. The chapter is organized in the following sub-sections.

4.2 Socio-Demographic Characteristics of Respondents

Table 4.1 below, shows the socio-demographic features of the study participants. As shown, a total of 260 participants were recruited in the study, of which 61% were males and 39% females. The majority (40%) were aged between 21-30 years old. Again Majority are Senior Nurses comprising 61%. With regard to marital status, 52% were married. Lastly, the majority (48%) were assigned to morning duty.

Table 4.1 Socio-demographic Characteristics of Respondents (n=260)

Demographic Factor	Frequency	%
Gender		
Male	94	38.6
Female	166	61.4
Age group		
21-30 years	103	39.6
31-40 years	80	30.8
41-50 years	58	22.3
51-60 years	19	7.3
Rank		
Senior Nurse	160	61.5
Junior Nurse	100	38.5
Marital status		
Single	87	33.5
Married	137	52.7
Divorced/separated	36	13.8
Work shift		
Morning	127	48.85
Afternoon	71	27.31
Night	62	23.85

n: frequency, %: percentage

4.3.3 Prevalence of Stress among Participants

The study further sought to establish the level of stress among nurses of TTH and the results have been summarized in Table 4.2 below. Significantly, the level of stress could give an indication of whether nurses are stretched beyond normal capacity in performing their duties. Likewise, where a high level of stress is found among nurses, it could communicate the need for management policies to effectively curb workplace stress, and in the process, improve job performance and satisfaction of nurses. In the questionnaire, D.N.A (Does not apply), A.S.D (Applies sometimes), A.C.D (Applies to a considerable degree) and A.A (Applies always) were the indicators used to assess the stress levels. During the analysis D.N.A was referred to as

(NO). Nurses who responded to the stress variables with A.S.D, ACD and AA were grouped as A (Applied) and referred to as Stress (YES).

As summarized in the table below, respondents generally agreed that workplace stress levels were generally high among nurses of TTH. Significantly, when stressed, 94% of nurses found it most difficult to relax, 84% were upset over trivial things; 79% overreact to situations at work, 73% used a lot of nervous energy; 75% got offended rather easily and 75% were increasingly irritable. This indicates that the factors highlighted above offer the highest possible explanations of the level of stress among nurses of TTH sampled for this study.

Averagely 73% of the nurses indicated the stress variables applied to them, suggesting the majority of them were stressed. "Nothing about the future to be hopeful about" and "Found it hard to wind down" may not be good stress indicators as a majority of the participants (61% and 53% respectively) indicated these variables were not applied to them.

Table 4.2 Prevalence of stress among participants

Variable	Yes n (%)	No n (%)
Upset over trivial things	219(84.30)	41(15.70)
Overacts to situations at work	204(78.60)	56(21.40)
Found it difficult to relax	243(93.60)	17(6.40)
Upset rather easily	208(80.00)	52(20.00)
Using a lot of nervous energy	189(72.80)	70(27.20)
Offended rather easily	194(74.60)	66(25.40)
Found it hard to wind down	122(47.10)	138(52.90)
Very irritable	195(75.00)	65(25.00)
Found it hard to calm down after being upset	212(81.60)	48(18.40)
Found it difficult to tolerate interruptions at work	191(73.60)	69(26.40)
Nothing about the future to be hopeful about	102(39.40)	158(60.70)
Average	189(72.53)	71(27.47)

n: frequency. %: percentage

4.3.2 Association between Demographic Features and Perceived Stress Prevalence

As part of efforts to establish the determinants of workplace stress among nurses, it was necessary to assess possible associations between perceived stress prevalence and the socio-demographic characteristics of study participants using a *chi-square* test. The socio-demographic variables in focus are age, gender, education, nursing rank and marital status. The findings are summarized in table 4.3 below. As shown, chi-square statistics were used to test the relationship between demographic factors such as age, gender, marital status and nursing rank categories and perceived prevalence of stress among nurses sampled for the study. Crucially, the *chi-square* test shows that there is a statistically significant relationship between the age category of study participants and their perceived prevalence of stress. Younger nurses people were more stressed than older ones, ($p = 0.003$). This indicates that the perceived prevalence of stress among nurses was influenced by the age category in which they belong.

The data showed that nurses experienced stress regardless of the type of shift under which they work. However, the type of shift do not have any influence in stress ($P = 0.166$).

Additionally, the *chi-square* test also showed that there is a statistically significant relationship between the gender category of respondents and their perceived prevalence of stress Female nurses were more stressed (97%) than their male colleagues (63%) ($P = 0.000$).

Marital status was found to be another factor that influences workplace stress in TTH. Though all nurses under this category indicated they experienced stress, Married couples were more stressed (91%) when compared to stress experienced by the single (71%) and divorced/separated (78%) individuals ($P = 0.024$). This could be due to the roles they play in their marital homes.

Finally, the perceived prevalence of stress among nurses was also compared with their professional rank. Though both junior and senior nurses experienced stress, participants within

the junior nurse category were more stressed (89%) when compared to participants within the senior nurse rank (66%) ($P = 0.000$).

Table 4.3 Association between demographic features and perceived stress prevalence

Demographic characteristics	Stress level		Chi	p-value
	Normal n (%)	Presence of stress n (%)		
Gender			53.99	0.000
Male	35(37.23)	59(62.77)		
Female	5(3.01)	161(96.99)		
Age group			14.21	0.003
20-30 years	40(38.83)	63(61.17)		
31-40 years	17(21.25)	63(78.75)		
41-50 years	10(17.24)	48(82.76)		
51-60 years	2(10.53)	17(89.47)		
Marital status			7.48	0.024
Single	25(28.74)	62(71.26)		
Married	19(13.76)	118(86.24)		
Divorced/separated	8(22.22)	28(77.78)		
Rank			17.75	0.000
Senior Nurse	55(34.38)	105(65.62)		
Junior Nurse	11(11.00)	89(89.00)		
Shift type			3.59	0.166
Morning	57(44.78)	70(55.22)		
Afternoon	30(41.67)	41(58.33)		
Night	19(30.47)	43(69.53)		

n: frequency, %: percentage

4.4 Factors contributing to workplace stress

Factors contributing to workplace stress among nurses of TTH were assessed and the level of significance of association of these stressors with prevalence of stress among the nurses were determined with findings as summarized in table 4.4 below. As shown, the respondents generally intimated that demand factors, support factors, relationship factors, job roles, and

control factors constitute the main factors determining workplace stress among nurses of TTH.

Majority (82%) and (62%) of participants agreed that heavy workload and high workload pressure respectively were demand factors that significantly contribute to workplace stress.

Lack of management encouragement and lack of work resource material were identified as the major support factors contributing to workplace stress in TTH. Unsatisfactory salary and lack of supervision at work were not identified as determinants of workplace stress.

About 79% of respondents agreed that uncertainty about job roles and conflicting job roles were significant contributors to workplace stress.

Table 4.4 Determinants of workplace stress present among participants

Variable	Yes n (%)	No n (%)
Demand factors		
Heavy workload	180(69.23)	80(30.77)
Workload pressure is high	213(81.92)	47(18.08)
Support Factors		
Lack of mgt. encouragement	173(66.54)	87(33.46)
Lack of work resources & materials	181(69.62)	79(30.38)
Salary is not satisfactory	86(33.08)	174(66.92)
Lack of supervision at work	89(44.23)	171(65.77)
Relationship factors		
Poor relationship with superiors	93(35.77)	167(64.23)
Conflict with colleague nurses	106(40.77)	154(59.23)
Job role		
Uncertainty about job role	204(78.46)	56(21.54)
Conflicting Job role	206(79.23)	54(20.77)
Control factors		
Not recognized as important	208(80.00)	52(20.00)
Not allowed to make decisions	114(43.85)	146(56.15)
Not involved in decision makings	88(33.85)	172(66.15)

n. frequency, %: percentage

4.5 Assessment of practice of stress coping mechanisms by participants

This study assessed the influence of practice of stress coping strategies on prevalence of stress among the participants and the results have been summarized in table 4.5 below. As shown, respondents generally asserted that recreational activities, social support, and self-cognition constitute important workplace stress coping mechanisms adopted by nurses of TTH. Majority (81%, 77%) of participants indicated that being “able to take leave off” and “able to relax at a free time” respectively, are the main recreational coping strategies they adopt to counter workplace stress.

The majority of the participants (90%) indicated that they spend time with family and friends in order to cope up with workplace stress.

None of the self-cognition coping mechanisms were being adopted by the participants. This indicates that nurses of TTH often neglect themselves without paying attention to setting priorities, sticking to set priorities, regular health check-ups, and regular physical exercise

Table 4.5 Assessment of practice of stress coping mechanisms by participants

Variables	Practice	
	Yes n (%)	No n (%)
Recreation		
Able to take leave off work	211(81.15)	49(18.85)
Being able to relax at free time	199(76.54)	61(23.46)
Read books to relax	72(27.69)	188(72.31)
Engage in outdoor sports	111(42.69)	149(57.31)
Social support		
Spend time with family & friends	233(89.62)	27(10.38)
Approach co-workers for support	99(38.92)	161(61.92)
Friendly work environment	96(36.92)	164(63.08)
Self-cognition		
Self-priorities for use of work time	88(33.85)	172(66.15)
Able to stick to set work priorities	90(34.62)	170(65.38)
Regular physical check-up	78(30.00)	182(70.00)
Regular exercise	98(37.69)	162(62.31)

n: frequency, %: percentage

DISCUSSION OF RESULTS

5.1 Introduction

This section discusses the findings summarized in chapter four of the study. Significantly, discussions in this chapter are grounded in existing empirical and theoretical works on workplace stress, determinants of workplace stress and coping mechanisms adopted in dealing with stress at the workplace. The chapter proceeds in the following sub-sections.

5.2 Demographic Data

A total of 260 nurses of TTH took part in this study covering a period of two (3) weeks of data collection. 40% of them were young nurses (between the ages of 21-30 years). This is consistent with the average age of nurses in Ghana which is estimated to range between 25 to 35 years (Ghana Health Service, 2013). Significantly, nurses within the above age categories are usually active and involved in multiple tasks that may place some level of stress on them. The findings of this study are consistent with Filha *et al* (2013) who find that younger staff particularly nurses below 35 years at healthcare centres often experience a higher work strain.

Moreover, the findings suggest that females continue to dominate (61%) the nursing profession in Northern Ghana, particularly of TTH. These findings corroborate that of Meadus and Twoney (2011) which points out that although some appreciable numbers of men are gradually becoming nurses, the increase in the percentage of men has not been significant. Additionally, the gender imbalance in nursing could be the result of the exit of male nurses from the nursing profession compared to females. However, this constitutes a tentative argument, without scientific backing.

Furthermore, the findings show that the majority of nurses in TTH enter the nursing profession at the diploma level of education, with few others entering or upgrading to a degree or master's

level of education. The higher percentage of diploma nurses could simply be attributed to the fact that nursing training colleges in Ghana award diploma certificates. However, nursing study programs at the university level award degree certificates, partly accounting for the presence of degree nurses in TTH. The few nurses with a master's degree in education possibly imply that an increasing number of nurses are motivated to progress in their careers.

Regarding the marital status of nurses, the findings reveal that the marriage and family institution is held in high regard by nurses. Significantly, about 53% of nurses sampled for this study were married. More tellingly, those not married had aspirations of getting married someday. According to Parker and Arthur (2004), another key source of work stress arises at the interface between work and family life. Among married folk, the responsibilities of child-care and household chores often resulted in significant stress among working couples. This proved the case among nurses sampled for this study. The findings highlight a statistically significant association between the marital status category and level of stress among nurses of TTH.

5.3 Prevalence of Workplace Stress among Nurses

Various studies have established that the healthcare sector, particularly the nursing profession, is characterized by a variety of stressful situation that makes nursing a stressful occupation (Lambert & Lambert, 2008; Offei & Quansah, 2009). Shield and Wilkins (2006) intimate that workplace stress is often associated with the day-to-day duties of nurses. In this study, the prevalence of workplace stress among nurses was 73%, with different percentages at various levels. This is indicative of the stressful nature of the nursing profession among study participants. In other words, the findings suggest that the nursing profession is filled with difficult and challenging situations that could pose significant threats to the physical, cognitive and emotional well-being of nurses. According to Zaghoul (2008), continuous exposure to high

levels of stress makes nurses susceptible to burnout. In the case of this study, this means that nurses are increasingly prone to risk of burnout and low job performance in TTH.

In addition, the study established a significant association between the socio-demographic factors such as age, gender, marital status and professional rank of nurses and the prevalence of stress in the study area. Similarly, a study by Milutinovic *et al* (2012) suggests significant associations in the prevalence of workplace stress and socio-demographic factors such as age, marital status and educational level of nurses. Age of nurse can influence the level of stress of the nurse. The physiology tends to change as an individual grows older, this comes along with weakening of immune system and the body in general. Old age is suggested to be therefore suggested to be associated with prevalence of stress at workplace (Gotz, 2018). In spite of this, Filha *et al* (2013) found no statistically significant difference in the perceived prevalence of stress based on marital status and educational level of nurses. Nonetheless, the findings of this present study are important based on the peculiar experiences of workplace stress among nurses, also because the study focuses on all categories of permanent registered general nurses of TTH. Moreover, the study found a high level of stress among nurses reflected in feelings of nurses finding it difficult to relax, using a lot of nervous energy, difficulty in tolerating interruptions at work, being upset over trivial things, taking offense rather easily, overreacting to situations, and increasingly being irritable. Crucially, the high level of workplace stress among study participants calls for multidimensional and concerted efforts to help nurses effectively cope with workplace stress. According to Offei and Quansah (2009), although the Ghana Ministry of Health may be aware of the high level of workplace stress in healthcare centers, study participants reported that attempts to provide resources to help nurses effectively cope with workplace stress had not been forthcoming. As a result, there is a need for hospital administrators and registered general nurses in TTH to take active steps to manage stress and increase the overall performance of nurses on the job.

5.4 Determinants of Workplace Stress among Nurses

Previous studies on workplace stress among healthcare professionals highlight the fact that they are confronted with a variety of stressors. This study categorized such stressors as; demands at the workplace, level of control, support, interpersonal relationships, and role at work. Significantly, this variety of stressors could be linked to sources of stress encountered in the work environment as indicated by Spielberger *et al* (2003) in the STP model of occupational stress.

Generally, the findings show that the main contributor to workplace stress among nurses in TTH was high workload pressure (83%). This may be an indication that nurses, particularly younger ones and those with less experience on the job are yet to get used to the stressful routine at work. It could also be an indication of a heavy workload possibly due to understaffing at the hospital. The above findings are consistent with that of Ruggiero (2003) who found that workplace stress among nurses could be attributed to work that is physically and mentally demanding. Put differently, the greater the work demands placed on nurses, the higher the risk of them becoming physically or psychologically stressed.

Secondly, the level of control defines the level of autonomy that an individual has over some aspects of the work environment. This also includes how employees perceive they are recognized and have input in decision-making processes. The study's findings reveal that control factors such as not being recognized as important contribute greatly to workplace stress. Significantly, the lack of control among nurses at the workplace could make them unwilling to take initiative and possibly result in feelings of not being important at the workplace. In a study by Dapaa (2014), it was found that nurses generally lack control at the workplace, contributing to workplace stress, although it was not the main source of workplace stress among nurses. The findings of this study are therefore consistent with such earlier studies, considering the lack of

control among nurses does not equally constitute the main source of stress among nurses at TTH.

Furthermore, the findings show that job roles such as uncertainty about the job (78%) and conflicting job roles (79%) pose a significant source of workplace stress among nurses at TTH sampled for this study. Study participants considered their job role to include nurses' level of understanding about their role at a healthcare facility as well as how the facility makes sure there are no conflicting roles among staff. Specifically, respondents reported having poorly defined roles and role conflicting job roles with other nurses. This possibly resulted in significant strain in terms of not knowing who is in charge of what work tasks at a given time.

According to Lambert *et al* (2004), in the event of incongruity between expected job roles and actual roles being carried out by nurses, role stress could develop. Significantly, there is a need for management and/or hospital administrators to institute the needed management skills in assigning roles to nurses in various grades and categories in order to avoid role strain (Dapaa, 2014). However, in TTH, although job roles were assigned according to various grades and categories of nursing, role strain occurred within the various grades in which case there were no sub-divided roles for nurses.

In addition, the study's findings show that support factors such as lack of management encouragement recorded (67%) and lack of work resources and materials, (70%). Support could involve the provision of adequate resources necessary for work to be conducted easily and comfortably. It also involves assistance from management in terms of commensurate remuneration and supervision to ensure effective productivity.

In TTH, lack of support in terms of encouragement from management, resources, remuneration and supervision increased the level of stress among nurses. This finding confirms Sanders (2013) that adequate workplace resources and tools are required not only to ensure effectiveness

and efficiency in nursing practice but also to make work comfortable thus reducing the possibility of workplace stress among nurses. Likewise, Filha *et al* (2013) intimate that effective supervision constitutes a key factor that could lower stress levels among health workers particularly nurses.

Finally, the study found that relationship factors do not contribute to workplace stress in TTH. That is, interpersonal relationships between colleague nurses and management are not significant contributors to stress among nurses of TTH. Contrary, Bratt *et al* (2000) found that interpersonal and intra-personal conflict though marginal remains an important source of stress among nurses. Likewise, Rodrigues and Ferreira (2011) noticed that as the interpersonal relationship between nurses got worse, stress levels among nurses rose to higher levels. In TTH, though interpersonal relationship and conflict between colleague nurses and management did not constitute the most significant determinant of workplace stress, there is however the need to forge a work environment that promotes mutual co-existence devoid of conflict to ensure productivity and low stress.

5.5 Coping Strategies to Curb Workplace Stress

Regarding stress coping mechanisms, the study found that nurses often resort to a number of different coping strategies rather than just one in curbing workplace stress. Among the coping strategies adopted by the sampled nurses in dealing with work stress in TTH are recreation, social support, and cognition TTH. According to Sveindottir *et al* (2006), the extent to which nurses cope with workplace stress is an indicator of occupational stress in nursing. However, Kallaith and Morris (2002) posit the existence of an imbalance between the provision of high-quality care and the ways nurses cope with stressful working conditions.

In this study, nurses reportedly engaged in recreational activities predominantly taking leave of absence from work and relaxing at home during time off work. Spending time with family and

friends is the major social support mechanism adopted by the majority of the study participants (90%). This finding resonates with Callaghan *et al* (2000) who found social support was the most frequently used coping strategy adopted by nurses in dealing with workplace stress. Likewise, Laal and Aliramaie (2010) asserted that positive workplace stress coping strategies among nurses included but not limited to recreational activities and seeking social support from friends and family.

However, the Majority of the nurses do not adopt self-recognition strategies, which include setting priorities for use of work time, being able to stick to set work priorities, going for regular health check-ups, as well as regular physical exercise. Regarding why self-cognition is the least adopted stress coping mechanism adopted among nurses, further probing by the researcher revealed that due to the hectic nature of work at the hospital, there was considerably less time available for nurses these self-recognition strategies. In effect, this means that nurses often neglect themselves without paying significant attention to their own health or well-being.

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter concludes the study. It provides a summary of the major findings that answer the research questions. It goes further to provide the implications of the study's findings for policy, education, research and practice. Also included in the chapter are the limitations and recommendations based on the findings of the study.

6.2 Conclusion

Primarily, the study sought to establish the determinants of workplace stress among nurses of TTH. It further sought to establish the prevalence rate and/or level of stress among nurses, as well as the coping strategies adopted in dealing with workplace stress. Regarding the prevalence of workplace stress among nurses sampled, it was established that nurses of TTH sampled for the study experience varying levels of stress ranging from mild stress, moderate stress, severe stress and extreme stress. *Chi-square* tests further highlighted statistically significant relationships between the prevalence of workplace stress and demographic factors including age, gender, marital status and nurses' ranks.

Moreover, the study found that the stress levels were generally high among nurses of TTH. Significantly, when stressed, nurses found it most difficult to relax, calm down after being upset, upset over trivial things, used a lot of nervous energy, found it difficult to tolerate interruptions at work, got offended rather easily and were increasingly irritable. These variables can be used by the management of TTH to assess the stress levels of their nurses.

Regarding the sources of workplace stress, study participants generally agreed that demand factors, support factors, job role, and control factors, based on Spielberger *et al.* (2003) STP

model of occupational stress, constitute the main factors determining workplace stress among nurses of TTH. Specifically, the results show that demand factors had the highest aggregate mean score. This indicates that comparatively, factors such as workload and pressure on the job constituted the highest contributing factors to stress among nurses.

General coping mechanisms adopted by nurses included recreational activities such as taking leave off work and being able to relax at free time and social support activities such as spending time with family and friends.

However, nurses in TTH generally do not engage in other important stress coping mechanisms such as engaging in outdoor activities, physical exercise, medical check-ups and setting or sticking to priorities.

6.3 Implications of the study

The findings of this study have implications with regards to the occupational health and safety of nurses as well as healthcare management in general. Significantly, the study has policy, practice, research and educational implications. These are highlighted and discussed in the following sub-sections.

6.3.1 Policy Implications

The study has significant implications regarding the health of nurses and health workers in general. The high prevalence of workplace stress among nurses indicates that while nurses may be aware that there is a high workload on them in TTH, it may be beyond their capacity to bring down stress levels by reducing workload, among other work-related stressors.

Likewise, regarding stress coping mechanisms, poor self-cognition meant that nurses seldom take up physical exercise or go for medical check-ups which only results in high strain at the

workplace. Consequently, nurses at the hospital are likely to suffer from workplace stress-related chronic health conditions that may result in poor work output or productivity. This highlights the need for health policy that stipulates periodic assessment of conditions in TTH that could result in workplace stress, as well as putting in place the necessary measures to curb stress among nurses.

6.3.2 Implications for Management

The study also established control factors as a significant source of stress among nurses of TTH. Specifically, nurses felt underappreciated, not recognized and had little input in decision-making processes. Significantly, the lack of control among nurses at the workplace could make them lose their sense of initiative and possibly result in feelings of unimportance which can be stressful.

Moreover, nurses intimated having poorly defined job roles as well as conflicting job roles, which could result in significant strain in terms of not knowing who is in charge of what work tasks at a given time. The findings provide an indication of the need for management reforms in terms of adopting an inclusive and participatory approach to decision-making particularly on issues that concern the welfare and health of nurses and healthcare workers in general. Likewise, there is a need for management to have in place well-defined job roles to avoid role conflict in the future.

Lastly, management should reduce the workload of junior nurses since it is a major determinant of the increase in stress levels.

6.3.3 Implications for Education and Research

From the findings, it can be concluded that nursing is a highly stressful profession. This highlights the need for training of nurses in hospitals, as well as nursing students at training colleges and universities on workplace stress and effective stress management strategies. Indeed, the nursing curriculum at the tertiary level of education should include stress management as a major subject. It is hoped that such strategies outlined above would contribute to curbing workplace stress among nurses due to the increased awareness and knowledge concerning the sources and triggers of stress, as well as effective stress management strategies.

Regarding the research implications of this study, the findings related to the determinants of workplace stress among nurses of TTH is an indication of poor nursing management/leadership practices. In this regard, understanding more about leadership styles and management practices could significantly contribute to lowering stress levels among nurses. Future studies could, therefore, explore the leadership-workplace stress nexus.

6.4 Limitations of Study

Empirical studies in general often seek to present findings that are replicable across contexts. However, no study can provide findings that can be universally generalized. That applies to this study. This study was conducted among nurses of the Tamale Teaching Hospital to determine the prevalence of workplace stress, factors contributing to stress, as well as a stress coping mechanisms. As a result, the findings apply to nurses in the study area only and cannot be extended to cover other healthcare professionals such as medical officers and laboratory technicians.

Besides, the findings of this study do not necessarily represent a holistic situation of workplace stress among nurses in Ghana. Moreover, the study used a small sample size (260 out of 746

registered general nurses in TTH). However, steps were taken to ensure that the sample was representative of nurses of TTH.

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APPENDICES

Appendix A: Informed Consent Form

Research Title: Determinants of workplace stress among nurses of the Tamale Teaching Hospital

Name and Address of Principal Investigator

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Introduction

My name is Mansurata Haruna and I am a student pursuing a Master in Occupational Hygiene the School of Public Health, University of Ghana, Legon. I am the principal investigator and together with my research assistants, we are conducting a study on workplace stress among nurses of the Tamale Teaching Hospital.

Background

In Ghana, workplace stress is not limited to a particular profession. Specifically, healthcare professionals are highly vulnerable to stress and possible burnout due to the high levels of emotional strain, given the stressful working environment, worsened by the need to manage and care for patients (Ministry of Health, 2012). Nurses are among the most vulnerable group to stress in the hospital setting. To help solve this problem, this study seeks to examine the factors that contribute to workplace stress among nurses. The study also seeks to assess the gender variations in workplace stress among male and female nurses. Finally, the study seeks to ascertain the coping mechanisms adopted by individual nurses in dealing with workplace stress. For these reasons, it will be very much appreciated if you could grant us a few minutes of your time to answer these questions. It will take about 15-20 minutes to complete. It is for academic

purposes only and all your responses will be treated confidential and private as much as possible. Also, your name will not be put on the questionnaire. Furthermore, we want to stress that your participation is voluntary and you can decide not to respond to any question that you are not sure of or do not understand. You may not have a direct benefit from participating in this study, however, the information obtained would help in coming out with solutions to this problem.

Confidentiality

Every single information you provide will be held in absolute confidence and data collected in this study are strictly for research purposes and will be stored with passwords on electronic media, and the hard/printed copies in safely locked boxes. Access to the data will be limited strictly to the researcher and supervisor. Anonymity will be ensured in the dissemination of findings from this study since you will not be identified by your names.

Right to Withdraw

You have the right to withdraw from the study at any time. Your withdrawal may not cause you any harm, let you lose any privileges or services due to you or interfere with any relationship you have with health care providers.

Ethical Approval

This study will be reviewed and approved by the Ghana Health Service Ethical Review Committee (GH-ERC). This committee is there to ensure that you are protected from harm and your rights are respected during participation in the research.

Participant's Consent Form

I declare that the purpose, procedures and all other information of the study have been read by me and all questions and clarifications have been sought and answered. I, therefore, give my consent to participate in the study.

Signature of participant..... Date.....

Statement of the researcher

I have provided all the information, explanations, and clarifications about the study to the participant as well as answering any questions concerning the study. I agree to answer all questions that may arise in the course of the study and stick to approved study protocols.

Signature of the researcher.....Date...../...../.....

Appendix B: Questionnaire

Dear Sir/Madam

This questionnaire sought answers to a study on the determinants of workplace stress and the coping strategies adopted among general nurses of the Tamale Teaching Hospital. I will be grateful if you could spend a little of your time to complete this questionnaire. Any information provided is private and confidential. This study is solely for academic purposes. Your participation in this study is entirely voluntary. Please feel free to answer the questions below.

Section A: Demographic data

1. Sex: a) Male [] b) Female []
2. Age: a) 20-30 years [] b) 31-40 years [] c) 41-50 years [] d) 51-60 years []
3. Rank: a) SN [] b) SSN [] c) NO [] d) SNO [] e) PNO []
f) DDNS []
4. Educational level: a) Diploma [] b) Degree [] c) Masters [] d) PhD []
5. Marital status: a) Single [] b) Married [] c) Divorced/separated []
6. Ward/Unit:
7. Number of years in nursing:
8. Shift type: a) morning [] b) afternoon [] c) Night []

Section B: Level of stress

Please read each statement and circle a number, 0, 1, 2 or 3, to indicate how much the statement applied to you over the past week. There are no right or wrong answers. Do not

spend too much time on any statement. The rating scale is as follows: 0- Did not apply to me at all; 1- Applied to me to some degree, or some of the time; 2- Applied to me to a considerable degree, or a good part of time; 3- Applied to me very much, or most of the time.

	Stress	0	1	2	3
9	I found myself getting upset by quite trivial things	0	1	2	3
10	I tended to overreact to situations at work	0	1	2	3
11	I found it difficult to relax	0	1	2	3
12	I found myself getting upset rather easily	0	1	2	3
13	I felt that I was using a lot of nervous energy	0	1	2	3
14	I felt that I was rather easily offended	0	1	2	3
15	I found it hard to wind down	0	1	2	3
16	I found that I was very irritable	0	1	2	3
17	I found it hard to calm down after being upset	0	1	2	3
18	I found it difficult to tolerate interruptions at work	0	1	2	3
19	I could see nothing in the future to be hopeful about	0	1	2	3

Section C: Factors contributing to workplace stress

In the table below, please indicate how often you experience the following stressors at your workplace. Please read the statements carefully and tick the answer from the corresponding box that best describes your choice of response. The rating scale is as follows: 1- Never, 2- Rarely, 3-Sometimes, 4-Often, 5-Always.

Sources of stress	5	4	3	2	1
Demand factors					
19. The workload is too much					
20. There is too much pressure at work					
Support factors					
21. There is a lack of encouragement from management					
22. I lack the resources and materials needed to work effectively					
23. My salary is not satisfactory					
24. There is a lack of supervision at work					
Relationship factors					
25. Poor relationship with superiors or management					
26. Conflict with colleagues and other health team members					
Job role					
27. I am certain about what my role is at work					
28. I have conflicting job roles with colleague nurses at work					
Control factors					
29. I am recognized as important at work					
30. I am allowed to make decisions on my own at work					
31. I am not involved in decision-making at work					

32. What constitutes the most significant source of stress as a nurse at TTH?

- a) Demand factors []
- b) Support factors []
- c) Relationship factors []
- d) Job roles []
- e) Control factors []

Section D: Coping with workplace stress

Please indicate in the table below what you do to manage workplace stress as a nurse at the Tamale Teaching Hospital. Please read the statements carefully and tick the answer from the corresponding box that best describes your choice of response. The rating scale is as follows:

1- Never true, 2-Occasionally true, 3-Often true, 4-Always true.

Coping strategies	1	2	3	4
Recreation				
33. When I need to leave from work, I take one				
34. I am not able to do what I want in my free time				
35. I read a book or watch a movie to relax after work				
36. I engage in outdoor sports to relax				
Social support				
37. I spend time with family and friends away from work				
38. Anytime I need help at work, I am able to approach my colleagues or superiors				
39. My colleagues at work/work environment are friendly				
Self-cognition				
40. I am able to set priorities for the use of my time at work				
41. Once they are set, I am able to stick to them				
42. I go for regular physical check-ups				
43. I am always thinking about work				
44. I exercise regularly (at least 3 times a week)				

45. What coping strategy do you mostly adopt in dealing with workplace stress?

- a) Recreation []
- b) Social support []
- c) Self-cognition []
- d) None []

46. Does the management of TTH have in place strategies for coping with workplace stress?

- a) Yes []
- b) No []

47. If yes, what strategies have been instituted to effectively cope with workplace stress?

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Meeting of the Health Service Ethics Review Committee
17th April 2019

Mansurata Haruna
University of Ghana
School of Public Health
Legon

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	GHS-ERC 039/03/19
Project Title	Determinants of Workplace Stress among Nurses of the Tamale Teaching Hospital
Approval Date	8 th April, 2019
Expiry Date	7 th April, 2020
GHS-ERC Decision	Approved

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval of the study lasts for more than 12 months.
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings
- Please note that any modification of the study without ERC approval of the amendment is invalid

The ERC may observe or cause to be observed procedures and records of the study during and after implementation

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED:
DR CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

C. O. Director, Research & Development Division, Ghana Health Service, Accra

