SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

ASSESSMENT OF OCCUPATIONAL STRESS AMONG HEALTHCARE WORKERS IN ST. JOSEPH ORTHOPAEDIC HOSPITAL, KOFORIDUA-GHANA

BY

GRACE ANSAH

(ID NO-10104571)

THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE IN APPLIED HEALTH SOCIAL SCIENCE DEGREE

JULY, 2018

DECLARATION

I, Grace Ansah, hereby declare that apart from references to other people's work which have been duly acknowledged, this dissertation is as a result of my own independent efforts. I further declare that this dissertation has not been submitted for the award of any degree in this institution and other universities elsewhere.

…… Date ……

Grace Ansah

(Student)

……. Date ……

Dr Phyllis Dako-Gyeke

(Supervisor)

DEDICATION

I dedicate this work to the men in my life. Philip, Leslie and Jaden, this is for you. Our hard work has paid off. I love you all so much.

ACKNOWLEDGEMENT

Almighty God I thank you for your Grace, favour, wisdom and strength that enabled me to carry out this project successfully. May your name be praised.

My sincere appreciation goes to my supervisor, Dr Phyllis Dako-Gyeke for her immense support, guidance and contributions towards the success of this work. I have been extremely lucky to have a supervisor who cared so much about my work. Your prompt response to mails is next to none.

I also wish to express my profound gratitude to the lecturers and other non-teaching staff of the Department of Behavioural and Social Science for their tremendous assistance throughout the one-year period. You are the best amongst all.

The hospital and medical director, matron, various heads of department as well as the entire staff of St. Joseph orthopaedic hospital, Koforidua, especially Sarah, words cannot describe my gratitude to you. A special thanks goes to you, Mr Valentine Bruku, for your assistance throughout the period of this research. I am so grateful to you. Thank you for your support and May God richly bless you.

Not forgetting my family, friends and colleagues who, in one way or the other made my one year of schooling a smooth one. Philip, you played the role of mum and dad during my absence and the children did not miss me that much. You are a rare gem. Kuukua Amankwah Ansah, I owe you a lot of gratitude. Because of your help, I've made it. God bless you.

ABSTRACT

Occupational stress is on the rise, cutting across all professions and it is even severe in the healthcare profession. Since these workers take care of the sick, any change in their physical and mental well-being is likely to affect the care given to patients. This study sought to assess occupational stress among the healthcare workers of St Joseph orthopaedic hospital, identify the factors responsible for their stress and explore their coping strategies.

A cross-sectional quantitative approach was adopted for this study. A systematic sampling was used to select a sample of 202 respondents which cut across the frontline health workers of the hospital. A self-administered structured questionnaire solicited basic information about their social and work characteristics and measured the occupational stress using the Workplace Stress Scale. The common stressors and coping mechanisms were identified, using adapted versions of the Job Content Questionnaire and Lazarus-Folkman Coping Scale respectively. All the responses from these scales were measured on 5-point Likert. The data were analysed with Stata 15 statistical software.

A total of 172 out of 202 responded, representing a response rate of 85%. It was found that 78.4% of the health workers experienced occupational stress, with 48.8% in severe stress level. Majority (46.6%) of those in the severe stress level were nurses. Chi-square analysis done revealed that characteristics such sex, marital status, job designation and mode of transport were significantly associated with occupational stress. A further analysis of Pearson's correlation established a positive relationship between job demand and stress but a negative one between job support and occupational stress. The commonly reported stressors included insufficient salary, lack of control over decisions concerning their work, workload and insufficient support from both colleagues and supervisors. The coping strategies they ranked high included seeking support from friends, praying, and making steps to address

whatever is causing the stress. Thus, making use of both emotion-focused and problem-focused approaches.

Majority of the staff reporting such high level of stress is a wake-up call on the management to put measures in place to deal with it in order to ensure maximum output from the healthcare workers and promote quality of care to clients.

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LIST OF ABBREVIATIONS

HCW –	Healthcare worker
HCA-	Healthcare assistant
IT-	Information Technology
JDC-	Job-Demand-control
JDC-S-	Job-demand-control-support
PA-	Physician assistant
UK-	United Kingdom
WHO-	World Health Organisation
NIOSH-	National Institute for Occupational Safety and Health
JCQ-	Job Content Questionnaire
ILO-	International Labour Organisation

OPERATIONAL DEFINITIONS

Healthcare worker- Any worker who belongs to any of these groups: doctors, physician assistants, Nurses, healthcare assistants, pharmacists, physiotherapist and laboratory technologist.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Stress in the workplace is increasingly being recognized globally and workers in the health profession are not spared. It has been an issue of public health concern which occurs as a result of the numerous interactions between the worker and his or her working environment (Kvande, 2009). It is described as the unpredicted burdens and strains that create a mismatch between the worker's expertise and his or her projections, impeding his or her capacity to cope (WHO, 2015). Stress occurs due to both personal and work-related factors. In the latter case, it is considered as occupational stress (Da Costa & Pinto, 2017). Occupational stress remains one of the most important workplace health hazards for all workers in both developed and developing countries (Rehman, Irum, Tahir, Ijaz, Noor & Salma, 2012) and it is described as the harmful physiological and psychological response that occurs as a result of bad alignment of demands from the job and the worker's resources needed to handle them (Adeoye, 2002). Lambert & Lambert (2008) perceive this type of stress occurs when job demands become too much, causing build-up of pressures that are greater than the worker's capacity to handle, leading to reduced job satisfaction. The International Labour Organisation states that, about 10% of accidents that occur in the workplaces are due to stress (International Labour Organization-ILO, 2013).

The World Health Organization (2013) clearly states that, "a healthy workplace is one in which workers and managers collaborate to use a continual improvement process to protect and promote the health, safety and well-being of all workers and the sustainability of workplace". In spite of all measures put in place to promote healthy work environments, the levels of occupational stress are believed to be rising with 6 out of 10 workers going through high workplace stress (Global Organization for Stress, 2017). Occupational stress is now

regarded as the "health epidemic of the 21st century" (WHO, 2010). It is estimated that United States loses about 200 to 300 billion dollars every year as a result of occupational stress (Verespej, 2000; Le Fevre, 2003). It is also indicated that 75 percent to 90 percent of patients' visits to physicians are as a result of stress-related problems (Verespej, 2000). About 50% to 70% of every population are deemed unhealthy due to stress (Jins & Radhakrishnan, 2013). Occupational stress has a lot of negative impacts as far as the health of workers are concerned and it also reduces their stamina on the job (Sharma et al, 2014). In recent times, many organizations stand the risk of losing highly trained workers to consequences of occupational stress and the organizations also stand the risk of legal suits from these workers (Le Fevre et al., 2003).

It is documented that professions that usually involve a lot of human interactions and involve situations that demand quick decision-making skills, while those decisions can have a serious implication, are among the most stressful jobs (Aristotellis et al, 2015). Though occupational stress exists in all professions (Todd & Deery-Schmidt, 1996; Dragano & Verde, 2005), it is very high among health workers (Firth-Cozens & Payne, 2000; Boran et al, 2012). And even within the health sector, the professionals mostly report of high occupational stress particularly in the medical and nursing fields (Harris, Cumming & Campbell, 2006).

Stress levels in health professionals in recent times have been shown to be high in many countries (Firth-Cozens & Payne, 2000), with 1 in 12 health workers suffering from mental ill-health due to stress which required treatment (Ahola & Aakanen, 2007). About 413,000 Canadian health care workers which represent almost half of the workers' population complained of extreme stress at all working days (Wilkins 2007). It poses a great cost to the individuals, financial lost to the facilities with regards to low profit due to low productivity, and an eventual health loss to the patients in terms of poor quality of care rendered to them (Firth-Cozens & Payne, 2000). Precisely, the health care industry has become a constantly

changing environment, with the working conditions becoming more demanding and stressful (Portoghese, Galletta, Coppola, Finco & Campagna, 2014).

High rates of substance abuse, depression and suicide among health professionals are all linked up to job stress (Maslach, Schaufeli & Leiter, 2001). Other effects include disrupted personal relationships (Kristensen, Borritz, Villadsen & Christensen, 2005), reduced job satisfaction (Sanders, 2013) and psychological distress (Shirom & Melamed, 2005). All these provide great evidence that occupational stress is inherent in the health profession and it has damaging effects.

Several studies carried out in the health care sector have identified that these professionals are exposed to a lot of occupational stressors, such as time pressure, low support from colleagues and supervisors, an increased workload, patient treatment uncertainties, and other psychological consequences as a result of frequent exposure to patient's agony and deaths (Magalhaes, Dall'Agnol, & Marck, 2013). More examples of these stressors are regular exposure to pain, suffering and death. As a result, health professionals are predisposed to going through chronic stress such as burnout and other physical ill-health. This eventually compromise the quality of care rendered to these patients (Magalhaes et al., 2013).

The awareness of stress depends on a mental assessment process, which makes a person rates the gravity of the events and also his/her possibility to deal with them (Chou, Li & Hu, 2014). However, healthcare professionals, who experience occupational stress, have ability to assist themselves by using different coping mechanisms (Koval, 2016). Coping efforts are the attempts made to tolerate with the effects of stress. Lazarus (1993) focused attention on the fact that there are no widely suitable or unsuitable coping mechanisms. However, mostly some are better or worse than others within any given circumstance. When individuals successfully cope, they get to improve their quality of life, maintain their mental health, and

avoid remission of ailments (Aldwin, 2000). McLeod (2009) listed a number of techniques which include repression, denial, projection, displacement and regression.

1.2 Problem statement

According to WHO (2006), Africa accounts for about 24% of global disease burden. However, it has only 3% of the world's health workers. Health workers in Ghana face high work load, poor remuneration, frustration due to limited resources, verbal abuse from disgruntled patients among others which exposes them to stress (MOH/GHS, 2010). In Ghana, stress and lifestyle diseases are gradually becoming a great source of morbidity accounting for 60-70% of hospital visits (Dzirasah, 2005). Several studies nationwide have revealed that about 58% of the work forces in various organizations suffer from stress-related outcomes (The Weekly Mirror, 2006). Occupational stress among health workers ultimately affects quality of care rendered to patients and it becomes a cost to both the worker and the institution.

St Joseph hospital is specialized in orthopaedic and traumatology hence receive a lot of accident cases from the country as well as the sub-region in West Africa (Timmers et al., 2016). This high number of patients presents a heavy workload on the staff of the hospital. In addition, the hospital runs other health services including general surgery, obstetrics & gynaecology, general consultation and public health. Also, the introduction of the National Health Insurance Scheme (NHIS) has worsened the situation. According to Witter & Garshong (2009), the use of Out Patient Department (OPD) services by clients using NHIS have been increasing nationwide since 2005 resulting in high workload for the health workers. It is also documented that annually, the hospital sees 32,000 new out-patient appointment alone (Timmers et al., 2016).

In spite of all these pressure, there has not been any study carried out to quantify the level of occupational stress that these healthcare workers go through.

According to several studies carried out to assess stress among healthcare workers, the sources include the following: heavy workload, shift system, role ambiguity, working environment, conflicts among themselves (Chou, Li, & Hu, 2014; Portoghese, Galleta, coppola, Finco, & Campagna, 2014). However it has also been established that occupational stress is a consequence of endemic factors, pressures and cultures which requires tailored interventions (Muscroft & Hicks, 1998). There is therefore the need for localized surveys in identifying stress levels and understanding both its sources and solutions

Hence this study seeks to assess the occupational stress among workers of St Joseph Hospital in order to add knowledge and also establish the local stressors peculiar to the hospital and examine their coping strategies as well.

1.3 Objectives

To assess occupational stress among health workers at the St. Joseph's Orthopaedic Hospital, Koforidua.

1.3.1. Specific Objectives

The specific objectives of the study have been outlined as:

1. To determine the level of occupational stress among health workers at the St. Joseph's Hospital.
2. To examine the most common factors responsible for stress among the health workers of the hospital.
3. To identify the most adopted coping mechanisms used by these health workers

1.4. Justification of the Study

This study will provide feedback information on measures that will reduce occupational stress. It will also direct resource for policy makers, governmental and non-governmental organizations and other significant institutions in planning programmes as well as interventions that will effectively manage occupational stress and improve job satisfaction. It will also help in the formulating of appropriate health and safety within the hospital environment. It will serve as a platform to improve upon the economy of the country since a better working environment leads to higher productivity.

1.5. Conceptual framework

The framework is adopted from Robert Karasek's Job Demand-Control model (Karasek & Jr., 1979) which was expanded by Karasek & Theorell, (1990) to include Social Support.

This model states that occupational stress is due to the relationship that exist between demands of the job and control the workers have over the job (Karasek & Jr., 1979). Job demands, also known as the heights of strain are the requisites of the work which include the rate of work, time pressure, ease and struggle in doing the work (OSHA, 2000). These demands are also known as the psychological stressors in the working environment. The job control, also known as decision latitude is concerned with the ease and liberty a worker can contribute to decisions affecting the organization of his/her work, describing both the competence and authority. This model makes it clear that the strain alone does not lead to high occupational stress but rather a combination of the strain and the decision latitude that the job offers (OSHA, 2000). It has been proven that the support lessen the impact of work stressors on the individual (Kenny, 2000). Research has shown that the demand-control interaction is stronger among workers who in one way or the other lack social support from superiors, colleagues and the family as well (Krohne, 2002). According to Johnson & Hall

(1988), the three way interactions often create a favourable relationship between demands on the job and strain only if a great amount of social support is reported. Thus social support reduces the effect job demand has on the overall stress outcome. According to Van der Doef & Maes (1999), The job demand-control-social support has become a useful model for examining the health of workers, their motivation, and attitudes towards work because it paints a clear picture about the fact that employers should not only maximise control within the organization, but should also improve support that is relevant to the employees.

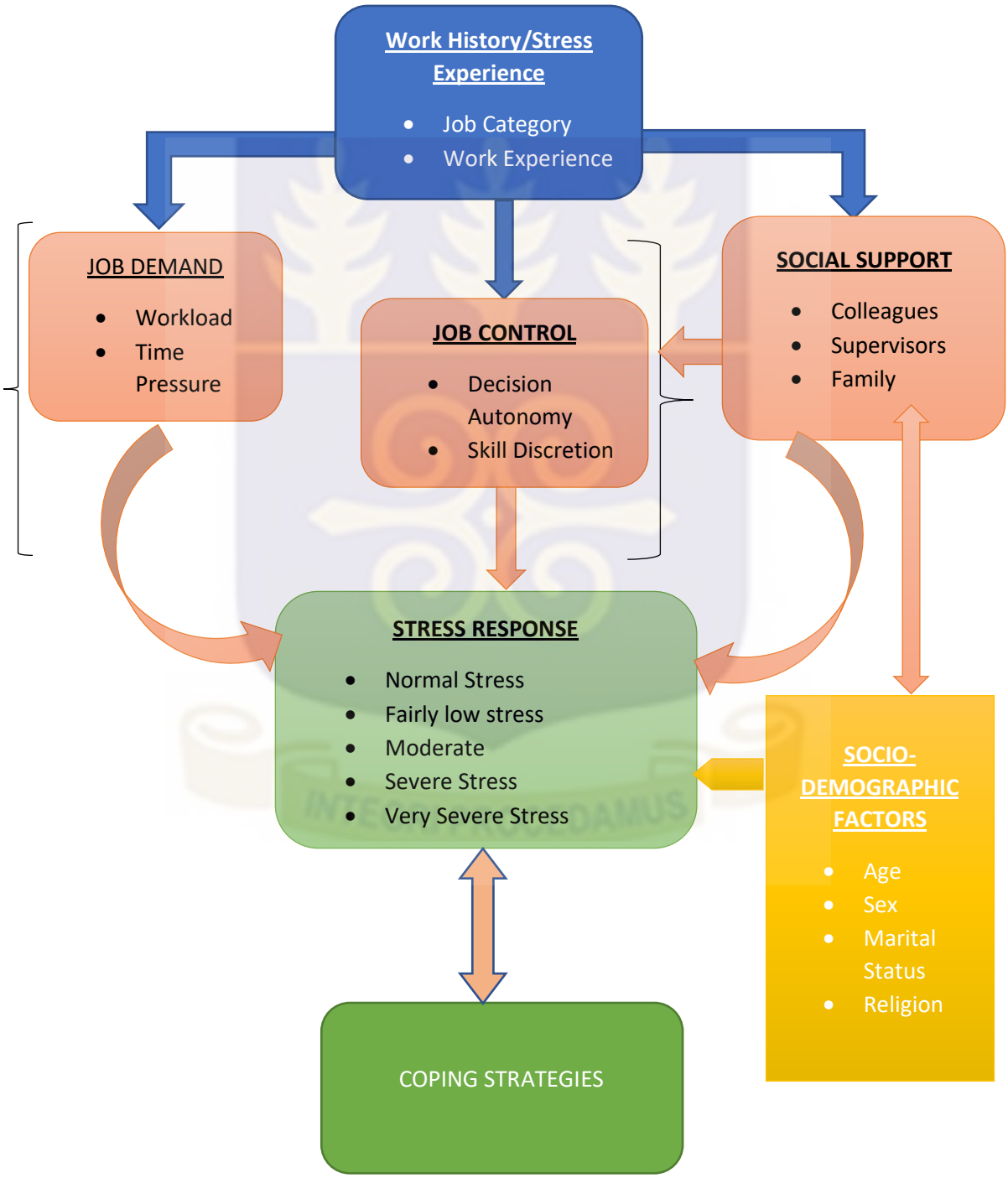

Figure 1 Conceptual framework
Source: Adopted from Karasek (1984).

Stress experienced at the workplace is dependent on three main factors as described by Karasek (1984) and these are job demand, control and social support. These factors directly influence the stress response of every worker in an institution. The greater the workload and time pressure, the greater the amount of stress. Likewise, the greater the control one has with regards to decision making, the lesser the stress. However, the effects of these two categories are mitigated by the level of social support received from colleagues, supervisors and family members which influences the stress response.

It is also documented that occupational stress are attenuated by personal factors such as sex, age, religion and marital status. Occupational stress is largely reliant on an individual's composition and also comprises of how the employee perceives the mismatch between his or her actual circumstances and what he or she expects (Nnabuife, Onyeizugbe & Onwuka, 2012). This relationship is such that a high personal stress would have a greater disposition on the overall work-related stress one experiences. For instance research has proved that men are more likely to be exposed to hazardous working conditions than women (Eng et al., 2011). This notwithstanding, marital problems would combine with high workload to increase the overall occupational stress.

Work History has effect on stress indirectly through the job demand and the job control as well. Staff in managerial positions has different job demands as compared to those within the junior rank. Though both might have high workload within their domain, one group (management) have authority and discretion as to decisions affecting their work. Junior ranked members do not have power over decisions concerning the work and its organization, hence might be frustrated increasing their stress level. Thus those in decision-making rank would have their workload-influence attenuated by their authority. Job category also affects stress level through the job control. In the health system, a doctor is seen to be the one who gives orders hence have much authority unlike the nurse or other designations.

Stress response, whether mild or very severe determines the coping strategies to be employed. In addition, the demographic factors are great determinants of which coping strategy to use and when to use it. A feedback link exists between coping outcomes and initiation of series of events leading to stress, in the sense that unsuccessful coping aftermath serve as stressors (Runchi, Sukhpal & Karobi, 2014).

1.6 Scope of the study

Four chapters follow this introductory one. The second chapter is focused on the review of both past and current literature in order to gain a deeper meaning of the topic being investigated. The techniques used to carry out the study to achieve the study's objectives are clearly spelt out in the third chapter (methodology section). The two chapters that follow describe the results obtained from the study and comparison of these findings with earlier works by other researchers is made. Then, the concluding chapter which is a summary of the study spells out some recommendations for health workers, administrators as well as future researchers.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, the literature on stress in general as well as that on occupational stress is reviewed. Then a critical look at the health profession is made, considering the level of occupational stress, sources and circumstances that bring about this stress. Also the coping strategies employed to mitigate occupational stress are examined.

2.1. Overview of stress

Stress is generally perceived to occur when demands on an individual is more than his or her ability to manage effectively. (Cohen, Janicki-Deverts, & Miller, 2007; Gulavani & Shinde, 2014). It is also defined as the body's response to change which requires some adjustment. (Shivaprasad A H, 2013). Furnham (2012) was of the view that stress is any pressure that can be overwhelming in such a way that it exceeds a person's capacity to maintain biological and psychological equilibrium. However, stress is part and parcel of everyone's daily life. According to a renowned stress theorist, Hans Seyle (1957), "No one can live without experiencing some degree of stress all the time" (Hans, 1957) but then each individual's cognitive maturity, perceptions and interpretations will go a long way to ascertain whether the stress is favourable or not. (Shivaprasad, 2013). The above withstanding, stress also improves an individual's personal accomplishment at the workplace, motivation, satisfaction and performance (Matthewman, Rose, & Hetherington, 2009). Stress actually can prepare the body to counter difficult moments with focus, increased energy and alertness. Thus, in little amounts, stress can assist one to perform under pressure but when it becomes chronic, the body is overwhelmed and hence translates this into illness. Stress has the power to alter one's thinking, behavior and feelings in such a way that the physiological functions are modified.

Though such changes are not permanent, they still reduce the quality of life of the individual at that particular time (Sohail, 2015).

American Psychological Association (APA, 2017) has categorized stress into three types namely: acute, episodic and chronic stress. The most basic and common form is the acute stress which results from pressure and demands from daily interactions. Small doses of such stress can be thrilling but too much is exhausting. Episodic type occurs due to frequent acute stress which may result from setting extreme goals that are difficult to meet. This type is typically found in Type A personalities who are excessively competitive, aggressive and impatient. Chronic stress as the name implies is an almost not ending type. It results from unrelenting demands for seemingly interminable periods of time. (American Psychological Association, 2017; Sincero, 2012). Acute stress which is short lived and infrequent poses little problem to the body. However, chronic stress keeps the body in constant state of activation leading to an increase in wear and tear of the biological systems. According to Schneiderman, Ironson, & Siegel, (2005), early indication of stress are migraine, concentration difficulty, and inability to sleep properly, headache, sleep disturbances, concentration difficulty, short temper and low morale. With regards to sources of everyday stress, research has identified daily life hassles, life-changes, physical pain and discomfort, frustration and conflict and natural disasters (Makabe, Takagai, Asanuma, Ohtomo, & Kimura, 2015).

Stress sets off a neuroendocrine response which prepares the body for defensive action known as the "fight or flight" response (Karen, Hagen, Smith & Frandsen, 2002). This defends the body against threatening situations. Reaction to stress was also described by Hans Seyle using his popular general adaptation syndrome (GAS) which is a three-phased process (Seyle, 1957). The first phase which is also known as alarm phase is composed of shock and counter-shock reactions due to first exposure to the stressor. There is increased adrenalin

discharge and gastrointestinal changes. Classical characteristics include sweating, palpitations, rapid pulse, frequent urination, diarrhoea, etc. The body then enters into the resistance phase upon continuous exposure to the stressor. During this time, the alarm reactions disappear, indicating the body's adjustment to the level of stress. But with the persistence of the stimulus collapses the body's resistance leading to exhaustion, which is the final phase. Over here, the body's ability to adapt is waned leading to reappearing of the symptoms in the alarm phase but since resistance is almost impossible to achieve, damages which are irreversible occur and these may even lead to death.

A recent psychological theorist, Payne (2005), further elaborated that when one says he/she is stressed, it actually implies that the body is really overwhelmed with the stress, above what he or she can handle. And that until one dies; he or she is never free from stress (Payne, 2005). Since stress can come from any situation, be it work or family related and other daily hassles, no one can escape it. Regardless, stress has been regarded as an occupational hazard since the mid-1950s (Kipping, 2017).

2.2. Occupational stress

Occupational stress is the body's biological, psychological and behavioural reaction to some exceedingly draining facets of one's occupation which could be related to job content, organization of the job and the working environment (Houtman & Jettinghoff, 2007). It results from a disparity between job demands and the worker's ability which becomes a challenge to that individual to cope with work. Most often it is not only about heavy workload but the fact that worker's skills and capabilities are simply left untapped (World Health Organization, 2003). This report went further to emphasize most often pressure at work is confused to be occupational stress. Pressure at work is unavoidable as a result of demands of modern working environment. There is a level of this pressure which is

acceptable due to the fact that it keeps the workers alert, motivated and provides opportunity for them to learn. This even depends on available resources and personal characteristics (ILO, 2016).

Nevertheless, occupational stress cannot be dealt with in isolation. According to NIOSH (1998), individual and situational factors can interact with those from the work to either strengthen or weaken the total stress level. (Stellman & International Labour Office, 1998). This implies that every worker goes to work with a certain level of predisposition towards stress. For instance, the daily hassles may combine with events that alter the person's life in a substantial way, such as marriage, divorce or even childbirth. These tend to threaten the mental and physical well-being of the individual at work, predisposing him or her to a greater amount of occupational stress.

A number of models have driven stress research and helped to understand the concept of occupational stress. The three prominent ones are the medical, person-environment fit and the JDC-S models. The medical model is one which focuses on the effects of occupational stress on the health and well-being of employees and not necessarily how the stress came about in the first place. This model has played a vital role in regulating the manner in which occupational stress as well as injuries are diagnosed and managed (Kenny, 2000). Caplan (1998) also created the person-environment fit model which describes occupational stress to arise out of a misfit between the worker and his or her environment. Another model which helps to understand occupational stress is the Job-demand-control-support model by Karasek &Theorell (1998). It assumes that occupational stress occurs due to the coordination between the three domains of the work setting, that is, psychological job demands, job control and social support. These psychological demands comprise of workloads (qualitative and quantitative) and competing demands that bring conflict. Cognitive demands and conflict in relationships have been the latest addition in the explanation psychological demands

(Karasek et al. 1998). On the other hand, job control is seen as the ease and influence a worker has with decisions affecting his/her duties at the workplace (Theorell & Karasek 1996). And social support which comes from colleagues, supervisors and family is hypothesized to soften the negative effect of work-related stress on the health of employees Johnson & Hall 1998; Karasek & Theorell 1990). Using the nursing profession as reference, this model predicts that nurses who have high job demands accompanied with low control over decisions surrounding their working activities will report more stress and this may eventually result in stress-related ailments. However, in a study in the Greater Accra Region of Ghana, Dapaa (2014) found that nurses' lack of control at the workplace was the least source of workplace stress among the nurses. Berg et al. (2006) carried out a cross sectional study to investigate the role social support plays in the development of stress related illnesses. It was conducted among the staff of the Police service in Norway. It was found that, the incidence of stress was associated with symptoms of stress when the social support is lacking.

Peltzer et al (2009) carried out a research among educators within South Africa to explore the influence of occupational stress and work satisfaction on illnesses related to stress. Their findings were that stress and lack of work satisfaction were associated with most stress-related ailments which include asthma, stomach ulcer and hypertension. It was also found that work stress and low interpersonal support, were also related to hypertension. A cohort study carried out by Clays et al, (2007), examined occupational stress and depression symptoms in middle-aged workers. The study confirmed that occupational stress is a risk factor for acquiring symptoms of depression. These two studies imply that the effects of occupational stress on the health of workers might differ based on the location. Thus, whilst workers in Africa battle with physical symptoms such as asthma, hypertension and the like,

those from the developed ones are confronted with psychological symptoms such as depression.

Freudenberger (1974) conceptualized a type of stress that is characteristic of occupations involving numerous direct interactions with people such as in the healthcare profession and termed this type of occupational stress as burnout. Burnout basically describes the worker‘s reaction to the chronic stress common in such occupations. Symptoms of burnout are described as emotional fatigue, decreased job satisfaction and feeling of loss of contact with reality (Rojas & Grisales, 2011; Canadas- De la Fuente et al, 2015).

2.3 Occupational stress level in the health profession

Enough evidence suggests that occupational stress with its negative consequences is inherent in health care professionals (Firth-Cozen & Payne, 2000). It is known that stress in the health profession can lead to several symptoms such as high rate of depression, reduced personal accomplishment (Sanders, 2013), damaged interpersonal interactions (Kristensen, Borritz, Villadsen, & Christensen, 2005), mental distress (Shirom & Melamed, 2005) and even suicidal tendencies (Maslach & Leiter, 1997; Maslach, Schaufeli, & Leiter, 2001). The issue of stress has always been a bone to contend with in the medical field.

Medical personnel have the duty to respond promptly to patients and their decisions directly affect the lives of these patients (Chou, Li & Hu, 2014). In recent times, there have been gradual transitions from hospital-oriented care to primary and community based care which involves both the private and the public sectors (Khamisa et al, 2017). This transition has resulted in a sharp rise in the population that health workers are responsible for, leading to a lot of stress (Koen et al, 2011). In addition, most developing countries are having rapid increase in population and this issue, coupled with inadequate resources to work with put the medical workers under a lot of stress.

The possibility of health professionals to encounter upsurge of occupational stress relies on the job category, the nature of work, and the hospital unit one works in. (Ulutasdemir et al, 2015). Thus being a nurse or doctor might be stressful but the level would differ when a doctor working in the accident and emergency centre is compared to one who works in the eye clinic. Similarly, the stress level of pharmacists would vary from that of a physiotherapist though they might be working within the same facility. According to Alosaimi, Alghamdi, Aladwani, Kazim, & Almufleh (2016), though doctors as well as other health professionals experience stress due to prolonged working hours, overwhelming work demands and time pressure, it is recorded that nurses go through a greater amount of stress since they spend more time with the sick. Chou, Li & Hu (2014) measured job stress among health professionals in a tertiary hospital and they found that nurses had the highest levels (66%), followed by Physician Assistants (61.8%) then Physicians (32.6%).

In a study carried out in Jordan by Boran et al (2012), 101 health workers randomly sampled revealed that 27% of them have severe occupational stress with a highest prevalence among the general physicians (33%), dentists (30%), followed by the pharmacists (25%) and Physician specialists (12%) respectively. Physician specialists attend to only booked patients hence are able to control the workload, but this is not the case for the other workers. Similarly, Halder &Mahato (2013) carried out a research to examine the level of stress and wellbeing of health workers in Kolkata using a sample size of 50. The findings indicated that nurses reported high level of stress (33%), which was followed by the paramedics and technicians (20%) and least prevalence was among the doctors (13.3%) (Halder & Mahato 2013).

Occupational stress among healthcare workers tends to tow in line with the circumstances existing within the external environment such that the state of development at where the facility is located can have an influence on the stress outcome. Shaijo et al (2013) conducted

a study in japan to compare job stress and burnout among rural and urban physicians. Their results showed that those working in the urban centres had higher stress levels in relation to high job demand and less control as compared with their rural counterparts who exhibited less stress. The situation is even severe among rural-urban migrants as discovered by Xiaobo et al (2011) in their study to assess work stress and smoking among these dwellers in China. These workers have to adjust to the busy life of the city hence are already stressed therefore the addition of the work stress make them more vulnerable to dangerous habits such as smoking.

Work-related stress also exacerbates when the health workers are mandated to carry out other roles aside their usual assignments. For instance, some double up as administrators or even lecturers. Thus they do their normal work in the hospitals but do other duties, exposing them to higher stress level. Daud, Kashif & Shuya (2012) randomly sampled 110 medical educators from the Lahore Medical and Dental College and with the use of Workplace Stress Scale, it was found that 94% experienced occupational stress and 21% of them were in the category of severe stress.

In another circumstance where occupational stress is greatly felt is among newly qualified health workers. In a number of studies carried out among nurses, those who are new in the system present a higher prevalence of occupational stress (Maria & Gomes, 2009; Santos & Cardoso, 2010).

2.4 Factors Associated with Occupational Stress among Health Workers

Occupational stress as a concept is very complex due to the fact that it does not cover factors concerning labour activities but individual factors as well (Hespanhol & Porto, 2005). According to Benjamin (1990), the causes of occupational stress is grouped as those

associated with the work environment and the work/family interface (Matos &Jacome, 1998). The work environment consists of physical conditions (temperature, lighting, ventilation and noise) and job requirements (shift work, night duty, monotony, overload and exposure to risks) (Matos &Jacome, 1998; Jerrold, 2002; Hespanhol & Porto, 2005). According to the WHO, a lot of the factors responsible for occupational stress are as a result of the work design and the manner in which organizations are handled (World Health Organization, 2003). Because these components of work are likely to cause harm, they are known as stress-related hazards. These hazards are categorized by Cox, Grifiths & Rial (2000), into two main groups: work content and work context.

2.4.1 Work content factors

This refers to the details of the work itself. (Global Organization for Stress, 2017). It describes all factors related to working conditions and organization of the work (WHO, 2016). Work content factors comprises of job content, workload & work pace, working hours and, participation and control. Health workers perform a variety of tasks during their shifts. The occupational hazard associated with performing those tasks usually leads to back stress since majority of these tasks require standing (Kyreaa, 2014).

The care of patients can have extreme emotional burden on health workers. These professionals deal with helpless people every day, being confronted with unpredictable emergencies and the responsibility of making prompt judgements devoid of errors (Rosen, 2008). According to (Gulavani & Shinde, 2014), the pains, anxiety and trauma patients go through during labour which is the daily encounters of midwives expose them to a lot of emotional burden, having effects on their overall performance. Redding and Robinson (2009) identified that most patients who are acutely ill need nurses to continually focus on clinical

decisions and management in a regularly modifying setting. Health workers must therefore integrate thinking processes coupled with cognitive and behavioural expertise to render interventions that are appropriate (Redding & Robinson, 2009).

Workload is concerned with having extremely high or low job demand and also working under time pressure. The high workload of health professionals poses a major problem for the health care delivery system. Four main reasons account for this problem namely: high demand for health professionals, insufficient supply of health professionals, staff cut due to economic recession and surge in overtime, and reduction in patient length of stay (Carayon & Gurses, 2008). According to Morris et al (2007), the concept of workload is not only about the number of patients being taken care of but to some extent linked to patient 'dependency' in the context of work 'intensity'. Caplan and Jones (1975) defined 'workload' in terms of the amount of performance required to carry out any job, whilst Arthur and James (1994) also defined 'nursing workload' as the 'volume and level of health staff work'. Though the concepts differ by definition, they are used to measure the same phenomenon (Morris, MacNeela, Scott, Treacy, & Hyde, 2007) .

Workload could also be in terms of time pressure. Having too much to do within a limited timeframe creates stressful moments for health workers. Beevis, (2003) states that time pressure is the feeling that time is limited. He further pointed out that generally workers perceive time pressure when the time needed to complete a duty is more than 70% of the total time allocated for other duties. Furthermore, he suggested that high time pressure is felt when 85% of the available time is used to complete a duty. Having to perform various tasks at the expense of time leaves little time for each activity. In such situations the overall output is affected because the tasks may not be done well. For instance, it is known that it reduces the

attention given by a nurses to critical duties, predisposing patients to errors and unsafe care (ILO, 2016). According to Thompson et al., (2011), Time pressure and, occasionally, suboptimal assessment decisions are features of acute health care. Time pressure however, has been identified as an important strain factor in health care practice in general and a common factor for mental work overload (Thompson et al., 2011). Errors arise as a result of such workload (Sarafis et al., 2016). A very common example of error that occurs in the hospital is medication error (McDowell, Ferner, & Ferner, 2009).

Furthermore, stern and rigid working routines, working under long hours which cut official relations, poorly designed shift system and uncertain working hours is a source of stress (Cox et al, 2001). According to Akerstedt & Wright (2009), shift work is described as a work pattern in which a worker replaces another on the same job within the 24-hour period. The shift system poses the likelihood for sleep disturbances, less job satisfaction, lower mental scores and workplace accidents (Farquharson et al., 2013). According to Ross (2009), working in the night basically means that the worker is working outside the normal sleep-wake cycle, causing a disruption in the circadian rhythm. This in turn results in a lot of stress, which reduces productivity.

In a study by Abdul-Sallam et al (2014) to measure workplace stress and identify predictors of stress among health workers (physicians, residents, nurses and radiologists), it was found that the health workers who worked more than 50 hours per week as well as those who work on weekends and night reported more stress than their fellow colleagues. Boran et al (2012) also discovered from their study on work-related stress among health professionals (general practitioners, physician specialists, dentists and pharmacists) that heavy workload, being a female, working for long hours and being a general practitioner is highly associated with occupational stress.

2.4.2 Factors related to work context

Factors related to the job context captures everything concerned with career development status, remuneration, role in organization, interpersonal relationships, organizational culture and home-work interface.

A number of studies have been done to explore how organizational factors influenced occupational stress among health workers. In a study conducted in Komfo Anokye Teaching Hospital to examine the relationship between organizational factors and stress among health care professionals using a sample size of 453, Yeboah et al (2014) measured the correlation between some job factors which included relationships, against occupational stress. The tool of measurement was the UK Health and Safety Executive's (HSE) Management Standard (MS) and using regression, it was found that a strong correlation exists between relationships at work and stress. Thus poor relationship with colleagues and supervisors is associated with a lot of stress. Ruchi, Sukhpal and Karobi (2011) also made a similar finding when they conducted a study to investigate the factors that lead to stress and burn out among critical care nurses. Reduced job autonomy, insufficient supervisor support, less opportunities on learning on the job and inappropriate feedback were the predictors of stress. Another study sought to determine main stress factors among health workers. With a sample of 103 workers, face-to-face interviews were conducted using a structured questionnaire and it was found that 83% identified poor relations with manager's and injustice in performance evaluation (Boyaci, Sensoy, Beydag & Kiyak, 2014) as their main stress factors.

Ceballos-Vasquez et al (2015) also carried out a study to analyse the perception of psychosocial factors and mental workload on critical workers. About 64% of the respondents perceived their position involved a high volume of work in relation to the time available to

perform it, requiring complex decision-making and constant attention resulting emotional worn out. Similarly, 57.7% were of the view that, in addition to their position, they had other domestic demands to attend to. Furthermore, 47.7% perceived that their roles were not defined clearly and also support from supervisors and colleagues was insufficient.

Individual factors also play a role in the level of stress, including inconsistent demands from home and work coupled with lack of support for family conflicts at work and vice versa. Al-Mazrouei et al (2015) carried out a research among physicians in Dubai to identify the determinants of workplace stress. Their findings proved that being a female predisposed one to more stress than being a male. Though the females scored higher on the stress scale than their male colleagues, there was no significant association between gender and stress response. These researchers established that playing different roles often lead to certain expectations which elicit tasks that may be opposing to each other in such a way that compliance with one would make compliance with another difficult. This concept, they called role conflict was evidenced in female doctors playing the role of being mothers, wives and performing their career. According to Ahlborg (2012), the link between work and home is now identified as a source of stress especially for dual career couples. He went further to state that social interactions within the working environment and outside are perceived to play a moderating role and as such if support from these relationships is less, stress is greatly felt.
Furthermore, it is documented that aside the family/work interface which affect women the most, factors such as stereotyping and sometimes discrimination also make women vulnerable to work-place stress (Nelson et al, 1990). Based on comparative study conducted by Parmer et al (2015), to assess the effect of gender dynamics on occupational using 400 doctors and nurses as target group, their findings re-affirmed earlier researchers' view that women tend to experience more stress than men at the workplace.

Another individual factor that is associated with stress is age. Abdul-Sallam, Shari, Khalid & Abuelgasim (2014) found in their study on job stress and satisfaction among healthcare professionals that, on the average younger staff had higher stress than the older ones (OR= 0.968, 95% CI: 0.95 –0.987; P= 0.001). This could be attributed to the fact that young workers are burdened with a lot of workload since they are vibrant and energetic. Also they might not have the techniques to cope with work-related stress as compared to the older ones.

2.5 Coping with occupational stress

Stress is inevitable but inability to deal with it effectively can lead to serious health implications (DiGiacomo, 2001). It is documented that some people can cope with stress very well whilst others cannot (Iqbal & Kokash, 2011; Jins & Radhakrishnan, 2013). Failure to cope can result in a number of harmful consequences for the employer and this include impaired job performance, low morale, increased sick-leave absences (Toppinen-Tanner, Kalimo, & Mutanen, 2005), turnover intentions (Huang, Chuang, & Lin, 2003), and actual turnover (De Croon, Sluiter, Blonk, Broersen, & Frings-Dresen, 2004).

Coping, as explained by Lazarus & Folkman (1984) is the individual's persistent efforts in thought and in deeds to manage situations he or she perceives as challenging. They defined coping as the "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." According to them, coping strategies are mostly skills that are learned firstly through cognition. Though they require many efforts initially, they become easy to identify as time goes on (Cracim et al, 2015). Folkman & Lazarus (1980) were of the view that when one is confronted with a situation, the first thing done is to ascertain what kind of problem is it. This cognitive calculation would lead one to perceive whether a situation is stressful or

not. This they termed as primary appraisal. Afterwards, a secondary appraisal which involves deciding on what to do to resolve the stress. Thus the thinking process helps one to decide on how stressful the given situation is and based on the outcome, a situation-specific activity to tackle the demands is taken.

The goal of coping is to enable people resolve stress in a healthy manner (DiGiacomo et al, 2014). There are various ways of coping with stress (Sarafino, 2015), however these mechanisms vary from among individuals due to differences in situations, personal factors, type of stressor as well as cultural and gender factors. According to Lazarus (1993), there are no universally appropriate or inappropriate coping strategies although some are often better or worse than others at any given circumstance. Thus even when people are confronted with same situation, the way and manner with which they will deal with the stress will be different. These strategies could be positive (adaptive) which tackles the stressor in order to reduce the symptoms, or negative (maladaptive) which seeks to reduce the symptoms of stress without addressing the problem at hand (Alosaimi et al., 2016). Based on findings by Lazarus and Folkman (1984), there are two main types of coping strategies. These mechanisms could be self-directed which is also known as problem-focused strategies or based on the emotions accompanied by the stressors, also known as emotion-focused strategies. Problem-focused coping is also known as direct coping and it involves either removing completely or reducing the stressors, thereby reducing the stress (Bhagat, 2012). In general, the problem-focused coping is used in situations viewed as changeable it includes seeking options to tackle the stressor, weighing the pros and cons and actually taking steps to eliminate or refuse it. But the emotion-focused which is used when the situation is uncontrollable involves all diversely actions such as denial, watching television, etc. (Roxanne, 2013). It has been revealed that Problem-focused strategies are most often correlated with academic success (Zeidner, 1995) and associated with a positive emotional

response in stressful situations. Meanwhile, emotion-focused strategies are highly associated with psychological distress irrespective of the circumstances (Ben-Zur, Gilbar & Lev, 2001). However, most would agree that coping strategies are not always mutually exclusive; instead, different types of coping strategies are often used simultaneously (Roth & Cohen, 1986).

Another important aspect of coping is described as the **direct effect** and the **basic buffer** models developed by Cohen & Wallis (1985). These two recognize the role social support plays in protecting one from stress-related outcomes. According to them, strong social support in the form of social network resources, supportive relationships and subjective appraisal attenuate the stress experienced. Thus work that involves high demand might not be too stressful if the workers have enough social support (Roxanne, 2013). In recent times, Gelliz (2002) has also emphasized on the important role social support plays and he even went further to identify resilience as some ways of coping with stress as documented by (Gelliz , 2002).

Proactive coping is another coping technique which is mostly used by workers who occupy top managerial positions. Aspinwall & Taylor (1997) described that since this type of coping involves thinking ahead to know what stressors are likely to be faced, it is dealt with using actions such setting objectives, planning towards meeting those objectives and making decisions ahead of time. According to Greenglass (2002), proactive behaviour is found among those with vision who take charge of impending stressful demands.

The importance of coping as a factor in determining good physical and mental health has been well researched (Dempsey, 2002; Hamama, 2012). Within the health profession, coping is not only influenced by individual factors but the professional culture plays a huge role in the adoption of a particular mechanism (Hannigan et al, 2004). Hence whilst some coping styles are encouraged, others are highly frowned on. A qualitative study conducted by

Courvoisier et al (2011) was aimed at exploring the feelings and coping strategies among physicians and nurses. It revealed that though these professionals used cognitive appraisals (rumination, self-attacking, acceptance and repression) and action-oriented strategies (taking responsibility, creating guidelines to prevent future occurrence), social strategies such as seeking support from colleagues and friends were used by the nurses more due to the fact that doctors fear losing their credibility and respect if they shared their problems with colleagues.

Gholamzadeh, Sharif, & Rad (2011) carried out a study to identify the sources of occupational stress and coping mechanisms among nurses working in the accident and emergency unit of a university hospital. The findings showed that majority of them used emotion-focused mechanisms such as self-controlling and positive reappraisal but less explored Problem-focused ones such as accepting responsibilities for action made.

Gender also plays a role in coping. Men and women differ greatly when it comes to utilization of coping strategies. According to research, whilst men approach stress with problem-solving techniques, women approach with their emotions (Lazarus & Folkman, 1984). However, women tend to use adaptive measures such as seeking help, praying and crying whereas men use maladaptive ones like alcoholism, smoking, etc. (Parton & Goddard, 2006) hence women end up being healthier than men (Torkelson & Muhone, 2004).

Perry (2005), also sought to explore occupational stress and coping among certified nurses. It was revealed that they used mostly, emotion-focused strategies just to distract themselves and they relied on social support as well to cope. The reason was that they felt there was nothing they could do about the stressors. However, a similar study conducted among IT managers found that they utilized more problem-focused mechanisms (Richmond & Skitmore, 2006). Nursing is dominated by women (Meadus & Twomey, 2011), hence are more likely to choose emotion-focused mechanisms than male-dominated IT professionals.

While coping with stress is a universal experience which is shared by persons from all angles of the world, the process by which stress is evaluated in the first place and the strategies to use are based on several factors making these mechanisms vary from culture to culture. Lazarus & Folkman (1984) posited that, selection of a particular coping style is based on the individual's values and beliefs. They went further to state that even these values and beliefs are still sanctioned by the societal norms.

Based on a study carried out among healthcare workers in Sierra Leone by a team of researchers (Vesel, Waller, Dowden, & Fotso, 2015), it was found that psychosocial education have huge impacts on health worker wellbeing by enabling them come out with appropriate coping strategies. In another study, it was found that depression, stress and anxiety was highly correlated with coping such as avoidance, assertion and denial (Craciun, Craiovan, & Craciun, 2015).

2.6 The Health System of Ghana

Ghana healthcare system has over 200 hospitals with some run by Christian Health Association of Ghana (CHAG) (GHS, 2013). Generally, the health system is undergoing massive change which has resulted in many healthcare professionals going through pressure beyond way above their ability to cope (Yeboah et al, 2014). According to a report by the Ministry of Health (2012), primary health care in Ghana has been reshaped hence these professionals are taking on extra duties and work under intense pressure. It is also documented that since the introduction of the National Health Insurance Scheme (NHIS), attendance at the out-patient department (OPD) in health facilities nationwide have been increasing since 2005 (Witter & Garshong, 2009). This has led to increasing workload on the

health workers. Although doctor-patient as well as nurse-patient ratio has improved over the years in Ghana and it's even better than other countries within the sub-region (WHO, 2008), the staff are still inadequate to meet the increased work demand. According to this report the doctor and nurse-patient ratio is 1:10,000 and 3: 10,000 respectively. The health worker must be healthy to take care of the sick hence stress-related issues must be dealt with well in order not to compromise the quality of care given. In view of this, it is important to identify organizational stressors that are related to job stress in order to promote and facilitate strategies aimed at its prevention and reduction. Although care of patients involves team work, many researchers conducted on occupational stress and coping in the health sector are skewed towards physicians and nurses with few done on other medical professions, such as the allied health workers and pharmacists (Chou, Li & Hu, 2014).

2.7 Summary of literature review

The review of literature clearly depicts how stressful the health profession is though the stress level differs across the various professions. A number of studies have been done with regards to assessing the occupational stress level, identifying predicting factors and coping strategies adopted by these professionals. However most of these studies have focussed on one profession with the most carried out among nurses (Bhatia et al, 2010; Farquharson et al, 2013; Sharma et al, 2014; Dapaah, 2014; Kyreaa, 2014; Nyarko-Sampson & Nyarko-Sampson, 2017). Most of the studies that involved all the health workers (Suyi et al, 2014; Al Mazrouei et al, 2015; Vessel et al, 2015) were not carried out in Ghana. A few of such a study have been carried out in Ghana (Yeboah et al, 2014), creating a knowledge gap. Hence this study intends to fill this gap.

CHAPTER THREE

METHODOLOGY

3.0. Introduction

This chapter outlines the steps and procedures that were followed in obtaining the data and analysing them. The chapter also presents the sampling technique that was employed in the study to meet the set objectives. Areas include; research design, target and study population, sampling technique and calculation of sample size, types and sources of data, research

instrument, administration of research instrument, data handling and finally ethical consideration and study limitations.

3.1 Study design

This study applied a cross-sectional survey quantitative approach. This was used to assess occupational stress among health workers at the St. Joseph Orthopaedic Hospital, Koforidua.

3.2 Study location

The study was carried out in St. Joseph Orthopaedic Hospital in Koforidua. The hospital was built in the 1950's by the Catholic Church and located in the eastern region (about an hour drive from the nation's capital, Accra). It serves as a regional referral centre for a population of about 2 million people which includes patients from Togo and the Ivory Coast as well as other countries in the sub-region (Timmers et al., 2016). It provides a 24-hour specialist and general services on both out-patient and in-patient basis.

The Hospital is a 236 bed health facility with specialty in Orthopaedics and Traumatology. It boasts of one of the best Trauma orthopedic departments in the sub region. This unit is equipped with 4 operating theatres, a 150-bed capacity Trauma Orthopaedic block, and an Emergency bay with male, female, children and VIP wards for other conditions aside orthopaedic cases.

The hospital also has a very active General Surgery department, which offers full range of both emergency and elective services. The unit has a high turnover with average length of stay 3 days. The following services are also provided: ENT (ear, nose & throat), Ophthalmology, Obstetrics & Gynaecology and Public Health.

In addition, the hospital has the following support services; Laboratory/ Blood Bank, Radiology/ Ultrasound Scan, Pharmacy and Physiotherapy. Other facilities in the hospital are Staff Rest Room, Catering/ Canteen, Mortuary, Laundry/ C.S.S.D (central sterilization service department service), Stores and Supplies and then Estate Department.

The hospital has eleven male wards with side rooms, eight female wards with side rooms, four paediatric wards and a private ward made up of eight double rooms. The location of St. Joseph Hospital within the Koforidua Metropolis is shown in the map below

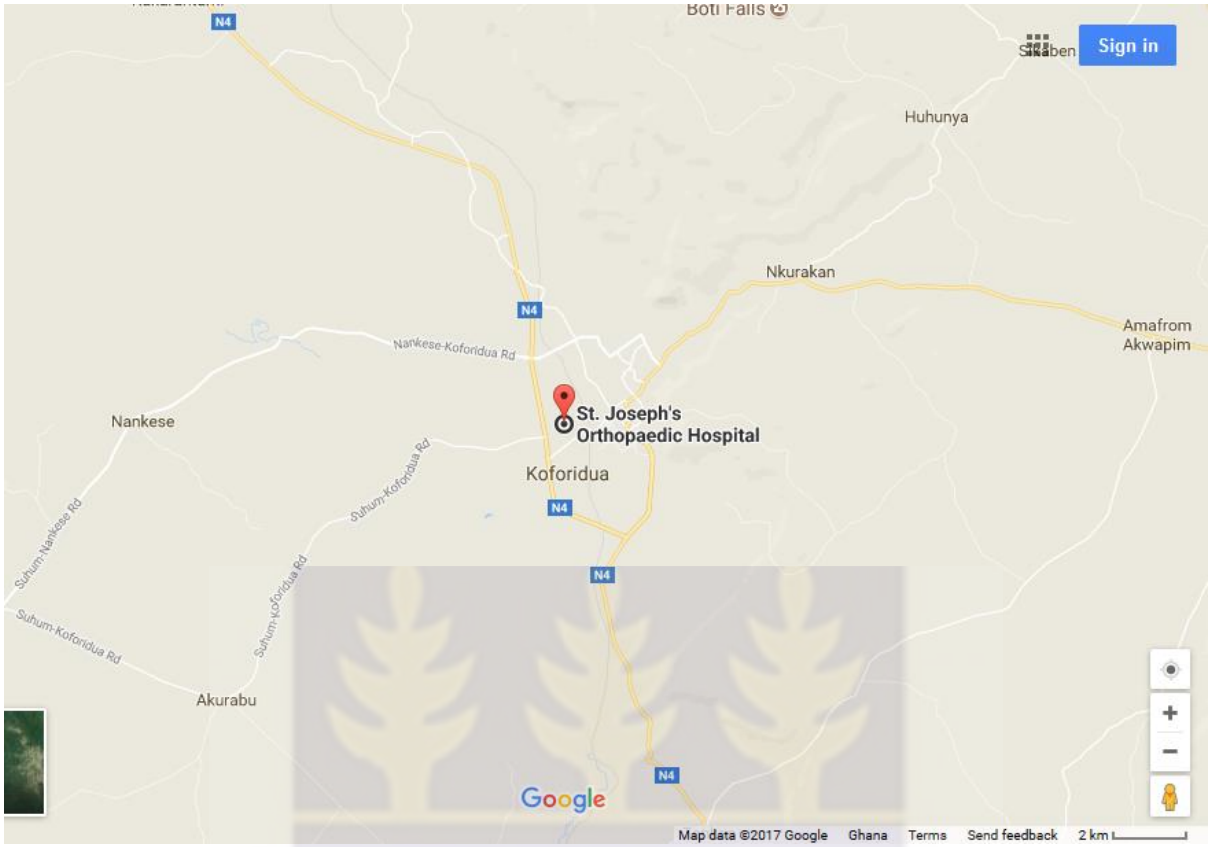

Figure 2 Map of Koforidua indicating the location of St. Joseph orthopaedic hospital

3.3 Study population

A target population comprises a group of individuals or subjects which serve as the main focus of a scientific query from which a sample is selected for a study (Castillo, 2009). For this study, it consisted of all the healthcare workers of the St Joseph orthopaedic hospital. These are nurses and health assistants, doctors and Physician assistants, pharmacists, anaesthetists, laboratory technologists and physiotherapists.

3.4. Sampling

3.4.1 Sample size determination

The proportion of the population to be studied is termed the sample size. This was calculated by using the Taro Yamane's formula for known population (Taro Yamane, 1967) with an assumption of 95% level of confidence. This formula is used when the population size is

known. The total population of the healthcare workers as given by the human resource of the St Joseph orthopaedic hospital is 342.

The Taro Yamane's formula is given by

$$n = \frac{N}{1+N(e)^2}$$

n = minimum sample size

N = population size

e = acceptable margin of error at 95% confidence interval

Substituting, $n = \frac{342}{1+342*(0.05*0.05)}$

= 184.4 approximately 184 health workers

This number was increased to 202 to make up for possible 10% non-response rate.

3.4.2 Sampling technique

A stratified sampling technique was used to select health workers from the various departments within the hospital. Stratified sampling is a probability sampling technique whereby the entire population is divided into different subgroups or strata, then the final subjects are randomly selected proportionally from the different strata (Creswell, 2013). In this study the list of names from each category was collected from the Human Resource unit of the hospital then using Pandey & Verma (2008) formulae for assigning proportions to different strata, proportions were assigned to each group to ensure that all are fairly represented in the study as shown in table 1. The proportion formula used, is given by:

n`= n x N`/N (Pandey & Verma, 2008) where:

n`= target stratum sample size

n= the minimum sample size calculated which was 202 health workers in this study.

N`= population for a stratum (number of staff within each job category)

N= total population (thus the entire population of the health workers which was 340 in this study

The table below shows the staff strength in the various job categories and the corresponding allocation.

Table 1: Allocation of sample

Job category	**Staff strength**	**Proportion allocated (n`= n x N`/N)**
Nurses/ healthcare assistants	252	150
Pharmacists/Dispensary assistants	20	12
Doctors / Physician Assistants	20	12
Anaesthetists	10	6
Physiotherapist	23	14
Laboratory technologist	10	6
TOTAL	**342**	**202**

Aside the nursing department, all the rest had few number of staff hence the supervisors were able to provide the names of the workers. This enabled the researcher to use Google number generator to select the participants. Those who declined to be part were removed from the list and a new number generated. This was continued until the required number of respondents was reached. Since the head of the nursing unit could only provide 80 out of the 250 names, the researcher decided to take two-thirds of the 80 and randomly select using the Google number generator and the remaining 170 were visited on their various wards on different shifts. Out of this number, two-thirds were also selected using pieces of papers with inscription YES and NO in a bowl, the nurses and health assistants were allowed to pick one. Those who picked yes were further briefed about the study and the ones who consented were recruited for the study.

In all, 186 questionnaires were returned and after auditing 172 which were fully filled were used for the analysis.

3.5. Inclusion & Exclusion Criteria

All the healthcare workers in St. Joseph Orthopaedic Hospital who are permanent staff qualified to be part of this study.

All students and interns were however exempted from the study. Evidence suggests that students of Health professionals are highly stressed and experience symptoms of burnout well before they graduate and enter the workforce (Frazer & Echternach, 1991; Beck et al, 1997; Balogun et al, 1999; DiGiamoco & Adamson, 2001) hence they were not included in this study.

3.6. Study variables

The variables to be measured in the study have been categorized into dependent and independent variables.

3.6.1 Dependent variable

The dependent variable measured in this study was occupational stress among health workers. This was assessed by using the Workplace Stress Scale (The Marlin Company, North Haven, Connecticut and The American Institute of Stress, Yonkers, NY 2001)

3.6.2 Independent variables

The major independent variables used in this study were as follows:

- Socio-Demographic variables (age, sex, marital status, educational level, job category, number of years of practice, religion).
- Physical environment (quantum of tasks performed on duty, work design and work environment).
- Social Environment (Relationship with staff, patients and their family, peers and superiors).
- Coping Mechanisms (self-control, support systems, distancing, accepting responsibility, escape-avoidance).

3.7 Data collection methods and instruments

The researcher made use of both primary and secondary data for the study. Self-administered structured questionnaire was used to collect the primary data. The questions were mostly closed-ended with a few open-ended ones. The secondary data were acquired through formal and informal interactions with the human resource section, the directors (medical and hospital), matron as well as some few staff of the facility. They provided information with regards to the description of the hospital, the total number of health professionals and the number of staff for each job category.

The questionnaire consisted of four parts. The first part comprised of demographic factors which took information of the respondents concerning their age, sex, education, job category, rank, religion, marital status, means of transportation to work, and how long they have worked in the facility. The second part which sought to measure the occupational stress had workplace stress scale as the tool, with the third part eliciting for factors that predispose them to stress most and the final part was focused on coping mechanisms.

3.7.1 Instrument

The workplace stress scale was fully adopted as a tool of measurement to assess the occupational stress. The Work Place Stress Scale (WSS) was developed by The Marlin Company, North Haven, Connecticut and The American Institute of Stress, Yonkers, New York in 2001 (Palmer et al, 2015). The scale consists of eight statements that precisely measure how often an aspect of one's job gives him or her stress. Each item of the scale is rated on 5 point Likert scale. Items 6, 7 & 8 are reverse-scored. Total individual score is 40 as maximum and 8 as minimum. A score of 15 or below is described as normal or no occupational stress, whilst more than 15 is considered as stressful. Workplace stress is further divided according to the scores as fairly low stress (16-20), moderate stress (21-25), severe stress (26-30) and very severe stress (31-40). With this scale, the respondents were asked to rate items that are most stressful to them and the responses ranged from 1 to 5 with the following representation: 1 (never), 2 (rarely), 3 (sometimes), 4 (often) and 5 (very often).

The Job content questionnaire (JCQ) developed by Karasek, Brisson, Kawakami, Houtman, Bongers & Amick (1998), which is also a scale to measure occupational stress was used precisely to bring out the situations at the workplace that give the workers stress. Although the original scale as developed by Karasek et al (1998) has 56 items, only 17 were adapted because it had the relevant information needed to elicit the stress-inducing factors for this study and the items also fit our setting. The scale categorization into job demand, job control and support were maintained. The Job Demand had a total of 5 items describing the workload, time pressure and work intensity. The Job Control also had 5 items focussed on taking initiatives, decision-making and ability to learn new things on the job. The final part, support described issues concerning salary, resources to work with, stable environment and relationship with colleagues as well as supervisors.

To measure the coping mechanisms, an adapted version of coping scale developed by Folkman & Lazarus (1984) was used. The scale describes a range of cognitive and behavioural strategies for dealing with stressful situations. Though the original scale has 68 items, an adapted version consisting of 19 items was used and respondents were required to rate the items on a scale of 1-5 with representation as follows: 1 (almost never), 2 (rarely), 3 (sometimes), 4 (quiet often) and 5 (most of the time). The coping strategies had both emotion-focused strategies such as crying, praying, seeking support as well as problem-focused ones such as making an action plan and increasing efforts to make things work. It had other items that described adaptive, maladaptive, denial and repression strategies. However, the items were not categorized under the various headings. This was done to avoid participants rating socially-acceptable ones higher, which might not necessarily reflect their true feelings.

3.8. Pretesting

The adopted questionnaire was pre-tested at focus Orthopaedic Centre using 10 conveniently sampled out health workers (5 males and 5 females) with similar characteristics. This facility was used because it is also a non-governmental facility who periodically carry out subsidised surgeries for clients based on partnership with donors. The aim was to test for validity and reliability of the instruments. Identified anomalies in the questionnaire were corrected before the final data collection.

3.9. Ethical consideration

Approval for the study was sought from Ghana Health Service Ethics Review Committee (GHS-ERC). An approval was given (**GHS-ERC: 025/12/17**). Following this, permission was also sought from the management of the health facility before data were collected.

In addition, every respondent was approached and the purpose of the study explained. Once they verbally expressed their consent, a written consent form was given prior to participation for them to sign to officially declare acceptance to be part of the study.

All respondents were given assurance that any information they provide would strictly be used solely for academic purposes and information collected would be handled with the strictest confidentiality. This was done by ensuring that their names were not written on the questionnaire and they were allowed to choose a place of their own convenience to fill the form. Some even took theirs home. The researcher went round to collect the filled forms herself so that no third party would get hold of it. They were also kept safely under lock and key.

Although there were no risks associated in participating in this study, they were still assured that no foreseeable harm would arise as a result of this study. And they were also informed of their liberty to withdraw from participating if they desired to do so. It was also explained to them that the result of the study would be beneficial in two main ways: adding to knowledge and serving as a guide to policies on stress management in Ghana as a whole.

3.10 Quality control

To ensure the quality and validity of the data and findings of the research, two research assistants with knowledge on the research were recruited and trained for data collection. Data collection was done during the period of one month. The data collected were checked to ensure the questionnaires were properly filled and the research assistants were supervised to ensure the information taken was correct. When omissions and errors were detected, it was quickly resolved. Data was checked before it was entered into the computer. The researcher verified how data was coded and entered into the computer.

3.11 Data analysis

To ensure accuracy and completeness, data was cleaned by running frequencies of all variables to check for incorrect coding, using Stata IC version 15.0 (64-bit) software. After double checking with raw data, all necessary corrections were made before analysis. The information in each questionnaire was coded and keyed into a computer using excel and imported onto Stata IC version 15.0 (64-bit) for analysis. In carrying out the analysis, both descriptive and analytical statistics were made use of. Frequency distribution tables, mean, percentages, and cross tabulations were used to describe the findings, while univariate analysis was conducted using Chi-square to determine associations between the dependent variable, (occupational stress) with key demographic and work-related factors that are known to be associated with occupational stress according to literature using a confidence level of 95% and significance $p < 0.05$.

The workplace stress scale was interpreted by determining the individual score for each respondent. Then frequencies and percentages were used to describe how many workers experience occupational stress (scores above 15) as well as those who fell into each category of stress.

For the stress-inducing factors, the total mean and standard deviation for each sub-scale as well as each item were determined. Then comparing of means within and between sub-scales were done to determine which category and items had high means. These were then ranked to identify the common factors causing stress among them. To explore the relationship between stress-inducing factors and stress, Pearson correlation coefficient was used.

Since the coping scale had no sub-scale, interpretation was done based on the summary mean. The individual item mean was compared to the summary mean and those that were higher than the summary mean was the commonly used ones.

3.12. Limitation of the study

The study was conducted in a single facility hence cannot be generalized to other health workers in the country. In addition, all the nurses could not have equal chances of being part of this study. Since the head could not provide all the names for randomization before they were approached. The researcher's decision of visiting them on the various shift unintentionally eliminated those who were off duty at the time of visits.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the findings of the data collected from the field. It presents demographic characteristics of the respondents and also data on the level of occupational stress, most stressful factors affecting the workers and the coping strategies usually adopted to manage job-related stress.

4.1 Demographic characteristics of respondents

A total of 202 respondents were sampled and given questionnaire. Out of this, a total of 172 questionnaires were obtained. Out of the 172 healthcare workers contacted, 55% were females. With the age categorized from 20 years to 50 and above, it was found that majority (79.07%) of the healthcare workers at the hospital are within the age groups of 20-39. The two main religions of the country; Christianity and Islam were heavily represented, with the majority (89.5%) believing in the Christian faith. Only 1.7% indicated they were traditionalists (Table 2).

Table 2: Demographic Characteristics of Healthcare Workers

Demographic Characteristic	Frequency	Percentage (%)
Sex		
Male	77	44.8
Female	95	55.2
Age interval		
20-29	60	34.88
30-39	76	44.19
40-49	26	15.12
50 and above	10	5.81
Marital status		
Married	81	47.1
Single	84	48.8
Divorced	5	2.9
Widowed	2	1.2
Religious affiliation		
Christianity	154	89.5
Islamic	14	8.1
Traditional	3	1.7
Residential status		
Hospital Acq. Apartment	26	15.1
Self-acq Apartment	146	84.9

Source: Field Survey, 2018

4.2 Work Characteristics of Respondents

Majority (68%) travel less than 2km to work and out of them, those who walked to work dominated (40.1%) and 35% used commercial cars. In addition, the commuting time of the staff ranged between 15minutes and above 90minutes. Those who used less than 30minutes were more (70%) as compared to only 1% who spent more than 90minutes to reach the workplace. Out of the 172 respondents, nurses/healthcare assistants were the majority (79%) with the least (2.3%) being physiotherapists. The staff in junior rank dominated with 58% and only 6% were managers. The findings also indicated that a whooping percentage of 88.4% have been working in the facility for years ranging from 10 years downwards but just 1.7%

have spent more than 20 years. Half of the population work in the day shift, with 20% working on night duty but some has also been working on both shifts (30%) for the past one month (Table 3).

Table 3: Work Related Characteristics of Healthcare Workers

Work Related Characteristics	Frequency	Percentage (%)
Mode of travel to work		
Commercial Car	61	35.5
Private	35	20.3
Foot	69	40.1
Hospital Bus	5	2.9
Other	2	1.2
Distance of travel to work		
Less than 2km	120	69.8
Between 2 and 4km	52	30.2
Minutes spent travelling to work		
Less than 15min	60	34.8
16-30min	60	34.8
31-45min	33	19.1
46-60min	12	6.9
61-90min	4	2.3
91min and Above	3	1.7
Job designation		
Doctor/Physician Assistant	8	4.7
Nurse/Healthcare Assistants	136	79.1
Pharmacist	8	4.7
Physiotherapists	4	2.3
Anaesthetists	6	3.4
Laboratory Technician	10	5.8
Rank		
Junior	100	58.1
Senior Staff	62	36.0
Management Staff	10	5.8
Number of years working		
Less than 5 years	97	56.4
5-10 years	55	32.0
11-15	15	8.7
16-20	2	1.2

4.3. Assessment of Stress among healthcare workers of St. Joseph Orthopaedic Hospital

The results showed that majority of the staff experience stress at the workplace as demonstrated in Table 4.

A total of 135 respondents representing, 78.5% experience occupational stress. Out of this percentage, 48.8% of the healthcare workers at St Joseph's Orthopaedic Hospital experience severe stress at the workplace, 27.9% experience very severe stress and 20.9% experience

normal stress. Only 1.7% of the workers experience moderate stress and none of the workers experience fairly low stress. No response was obtained for the fairly low stress category

Table 4: Stress Level of Healthcare Workers at St Joseph's Orthopaedic Hospital

Stress Level	Frequency	Percentage (%)
Normal Stress	36	20.9
Moderate Stress	3	1.7
Severe Stress	84	48.8
Very Severe Stress	48	27.9
Total	172	100.0

Source: Field Survey, (2018)

4.4 Factors Causing Stress among Healthcare Workers of St. Joseph's Orthopaedic Hospital

The job stressors are grouped into three categories: job demand, job control and job support. As shown on Table 5, the sub-scale job support (M=3.23, SD=1.52) is the main focus of the workers with the key factor being *my salary is not satisfactory (3.04)*. Though resources to work with (M=1.84) is not a big problem, lack of support from colleagues as well as supervisors is a factor causing stress among them. The Job Control (M=2.96, SD=1.05) is the next category that gives the workers stress with the main issue being item 5, *I do not have a choice in deciding what I do at work* (M=3.23). In addition, item 2, *my work demand high level of skills* (M=2.92) as well as the number 1: *I do not have the possibility of learning new things through my work* (2.87) were factors with high means which implies that they pose a lot of stress for them. The total mean score of the job demand (2.41) demonstrates it is the weakest category of stressors. The key factor is item 4, *my work demand too much effort* (2.26) which had the highest mean as compared to the total mean of the sub-scale.

Table 5: Indicators of Job Stress Factors (N=172)

Factors	Min	Max	Mean	SD
Job Demand (Total Score)			**2.41**	**1.141**
I have to work very fast	**1**	**5**	2.13	1.05
I have to work very intensively	**1**	**5**	2.24	1.23
I do not have enough time to do everything	**1**	**5**	1.98	1.58
My work demand too much effort	**1**	**5**	2.46	0.98
Job Control (Total Score)			**2.96**	**1.05**
I do not have the possibility of learning new things through my work	**1**	**5**	2.87	1.33
My work demand a high level of skill or expertise	**1**	**5**	2.92	1.14
My job require me to take the initiative	**1**	**5**	2.32	1.17
I do not have a choice in deciding how I do my work	**1**	**5**	2.09	1.32
I do not have a choice in deciding what I do at work	**1**	**5**	3.01	1.23
Social Support (Total Score)			**3.23**	**1.52**
There is no calm and pleasant atmosphere at where I work.	**1**	**5**	2.78	1.42
I do not get on well with each other where I work.	**1**	**5**	2.14	1.21
I lack resources and materials needed to work effectively and efficiently	**1**	**5**	1.89	1.52
My salary is not satisfactory	**1**	**5**	3.04	1.02
I do not get on well with my supervisors	**1**	**5**	2.13	1.67
The others do not understand if I have a bad day	**1**	**5**	2.84	1.71
I do not enjoy working with my co-workers	**1**	**5**	2.62	1.14

Source: Field Survey, (2018)

4. 5 Common Coping Mechanisms Adopted by the Healthcare Workers

The results (Table 6) indicated that the workers used 7 out of the 19 coping strategies considering the overall mean (1.77). The first three are: *I seek help from friends (2.76), talk to somebody about the situation (2.25),* and *try to get the person responsible to change his /her mind (2.25).* The least ranked strategies are: *smoke more (1.02) and I ignore the situation (1.03).*

Table 6: Indicators of Coping Strategies (N=172)

Coping Strategies	N	Mean	SD
		1.77	**1.54**
I watch TV or Film	168	1.62	**1.05**
Listen to radio or music	156	1.50	**1.42**
I cry	142	1.72	**0.94**
I keep busy at work	170	2.01	**1.02**
I ignore the situation	100	1.03	**1.86**
I pray or find faith in God or my religion	117	2.20	**1.56**
Try to get the person responsible to change his/her mind	113	2.25	**1.73**
I learn to leave stress at the office	111	1.75	**1.53**
I increase my effort to make things work	120	1.58	**1.09**
I make a plan of action and follow it	112	2.12	**1.41**
Seek help from friends	109	2.76	**1.98**
Seek help from relatives	112	2.05	**1.87**
Seek help from a counsellor or priest	127	1.34	**1.54**
Talk to somebody about the situation	105	2.25	**2.10**
Drink alcohol	151	1.75	**1.12**
Take tranquilizers	112	1.63	**1.05**
Smoke more	164	1.02	**1.87**
Eat more	135	1.32	**1.24**
Eliminate unpleasant thoughts and emotions from memory	130	1.73	**1.32**

Source: Field Survey, 2018

4.6 Influence of Demographic factors on stress

Based on chi-square analysis done to ascertain the influence of the demographic factors on stress, it was found as depicted in Table 7, that some factors have significant influence whist others are not. Age ($p>0.05$) and work pattern ($p>0.05$) did not have significant influence on stress. However, the rest were significant.

Table 7: Association between demographic characteristics and occupational stress

Demographics*stress	Chi-square	df	p-value
Sex	43.23	4	0.002
Age	7.30	16	0.451
Marital status	31.01	12	0.0001
Job designation	1.32	12	0.0032
Rank	26.20	8	0.002
Mode of travel	52.12	16	0.003
Work pattern	5.124	8	0.082

Source: Field Survey, (2018) * df is degree of freedom

4.7 Association between job designation on occupational stress

From table 8 below Majority of those who reported severe stress were Nurses/HCA (46%) with only 2% being Doctors/PA. And only Nurses/HCA reported severe stress. The other professionals reported normal stress with 2% of laboratory workers reporting moderate stress (Table 8).

Thus nurses and doctors reported more stress than the other professions and it is even highest among nurses.

Table 8: Association between Job Designation and Stress Level among the Healthcare workers

		Stress level			
Job Designation	**Freq.**	**Normal Stress**	**Moderate Stress**	**Severe Stress**	**Very Severe Stress**
Doctor/Physician Assistant	8	2%	0	3%	**0**
Nurse/Healthcare Assistance	136	5%	0	46%	**28%**
Pharmacist	8	5%	0	0	**0**
Physiotherapist	4	2%	0	0	**0**
Anaesthetists	6	3%	0	0	**0**
Laboratory Technician	10	4%	2%	0	**0**
Total	**172**	**21%**	**2%**	**49%**	**28%**

Source: Field Survey, (2018), Note: df=20

4.8. Relationship between Stress Causing Factors and Stress Level

A Pearson's correlation was carried out to determine the relationship between the broader categorized factors (job demand, job control and job support) as contributory factors to occupational stress experienced by the healthcare workers.

From table 9, the Pearson's correlation coefficients showed that there is a significant positive correlation between job demand and occupational stress (r=0.652, $p<0.05$). A negative correlation was found between job support and stress (r=-0.243, $p<0.05$).

Table 9: Relationship between Stress Causing Factors and Stress Level

Variable	**Pearson's Coefficient (*r*)**	p-value **(p<0.05)**
Job Demand	0.652	**0.0232**
Job Control	-0.301	**0.3422**
Job Support	-0.243	**0.0014**

Source: Field Survey, (2018), Note: (2-tailed Test);

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

The main objective of the study was to assess the level of occupational stress among healthcare workers at St Joseph's Orthopaedic Hospital in the Eastern Region of Ghana. Consequently, it examined the level of occupational stress among the different categories of workers, identified the stressful factors and adopted coping strategies. In line with this, the chapter discusses the results obtained from the analysis of data gathered from the field in relation to existing literature.

This study had majority (55%) being females. The age categorization of the respondents clearly demonstrated that St Joseph's Orthopaedic Hospital has a very youthful and energetic workforce as the results showed that majority of the respondents constituting about 79.07% fall within the age group of 20-39 years. There is different category of healthcare workers at the St Joseph's Orthopaedic Hospital which include Doctors, Physician Assistants, Nurse/Healthcare Assistance, Pharmacists, Physiotherapists, Anaesthetists and Laboratory Technicians of which majority (58%) are considered as junior staff members who have worked in the hospital for less than 5 years. A good number of the senior staffs have worked between 5 to 15 years at the hospital. Majority of the healthcare workers at St Joseph's Orthopaedic Hospital are religious as they either belong to the Christian faith (89.5%) or the Islamic faith (8.1%).

5.2 Assessment of the Level of Occupational Stress among Health Workers of St. Joseph's Orthopaedic Hospital

Throughout the world, stress levels have been recognized to be high among health professionals across many countries (Firth-Cozens & Payne, 2000). As widely recognized, occupational stress does not only occur due to heavy workload but also when the worker's knowledge and abilities are not well-utilized and the job category one finds him or herself.

The findings of this study showed that 82% of the healthcare workers at the St Joseph's Orthopaedic Hospital experience stress at the workplace. As to the level of the stress experienced, majority (78.4%) of the worker experienced occupational stress, with 48.8% reporting severe stress level at the workplace though a good number (21%) of them experience normal stress.

This level is lower than what was reported in a study by Ruchi, Sukhpal & Karobi (2014) that was carried out among 73 nurses working in medical-surgical unit of a tertiary hospital in India. The workplace stress scale was used to assess the stress level and it was found that 33% experienced moderate stress whist 51% reported severe stress. This study involved few nurses working in a particular unit who were conveniently sampled, hence not giving the others a fair chance to be part of the study. In addition, this study too did not involve all the health workers within the facility, which might be the reason for the difference. Furthermore, the difference in study setting could be a factor. According to Glazer & Beehr (2005), training, status, equipment and salary structure differs across countries which are likely to result in variation in stressors and stress. It is also established that, cross-cultural differences exist in the frequency at which work is regarded as stressful by workers within a particular country (Cheng, Wong, Yu, Lin & Cooper, 2002).

Shams & El-Masry (2015), carried out a cross-sectional survey among academic career anaesthesiologist in an Egyptian hospital to assess the predictors and prevalence of stress. With a sample of 300 randomly selected, workplace stress scale was used and they found that 69.4% of them experienced occupational stress. On a mean score of 22.27, the level was moderate stress which is higher than what was found in the study. The likely reason for this difference could be due to the fact that Shams & El-Masry (2015) sampled anaesthetists who doubled up as lecturers in a teaching hospital, making the setting and the target population different.

Ulutasdemir et al, (2015), revealed that the possibility of health professionals to encounter high level of work-related stress depends on the profession, the type of the work, and the unit of the hospital. Amongst the healthcare workers, it was discovered that nurses/Healthcare Assistants and Doctors/Physician Assistants are those that experience severe stress at the workplace. The other category of workers mostly experience normal stress. This finding confirms Harris, Cumming & Campbell, (2006) findings which indicated that health professionals mostly report of high occupational stress, particularly in the medical and nursing professions. It is also in agreement with a number of studies that suggest that workers who deal with unforeseeable encounters such as sudden deaths, trauma and other kinds of emergencies tend to experience more occupational stress level than those who do not face those challenges (Adali & Priami, 2002; Potter, 2006; Augusta-Landa, 2008; Healy & Tyrrell, 2011). Therefore, other professionals in this study experiencing moderate stress support these findings.

5.2.1 Influence of demographic and work characteristics on occupational stress

It isestablished in literature that occupational stress is either increased or decreased by personal and social factors such as age, sex, marital status, etc. Scholars (Nnabuife, Onyeizugbe and Onwuka, 2012) argued that occupational stress is largely reliant on an individual's composition and it also comprises of how the employee perceives the mismatch between his/her actual circumstances and what he/she expects. These and many others factors influenced the study to consider the demographic characteristics of the healthcare workers contacted during the study.

The study showed that the influence of sex on occupational stress among the health workers was significant (X^2=43.23, $p<0.05$). It was identified that more females reported between moderate to very severe stress as compared to the male counterparts. This finding corroborates the findings from several studies that suggest that females tend to report higher occupational stress than males (Vivienne & Teo, 2006; Galanakis et al, 2009; Parmer et al, 2015). Since women play the care-giving role, their experience of stress in general is higher as compared to men (Son et al, 2007). Therefore, the eventual occupational stress would definitely be higher. The way men and women experience stress differ. According to Kudielka et al (2007), their exposure and reaction to stress factors vary and women mostly see stress as threatening (Lazarus & Folkman, 1984) hence report. It is therefore likely that since the females are more in this study, the percentage of those who reported occupational stress reflect these findings.

It was also found that a significant association existed between marital status and stress (X^2=31.01, $p<0.001$). Majority (50%) of the workers who are married reported stress as against 29% of the single ones. As observed, the marital status had parallel effect on the level of occupational stress experienced by staffs at the hospital. To support this finding, Abdulai,

(2011), indicated that the daily hassles of workers may combine with major life-changing events such as marriage, childbirth, divorce or death of a loved one to threaten the physical and psychological state of the individual.

The association between the rank of staff and stress was significant ($p<0.05$). It was found that health workers within the junior rank experienced more stress with the management staff experiencing the least stress. This finding is in agreement with what Daud et al (2012) found among medical educators in Lahore Medical and Dental College. They found that educators from the junior rank reported more stress than those in the senior rank.

This study also revealed that, when it comes to the level of stress among the various healthcare workers, Nurses/HCA dominated in the levels of severe stress and they are the only ones who experience severe stress. This is in line with what Alosaimi, Alghamdi, Aladwani, Kazim, and Almufleh, (2016) identified. According to these scholars, the probability of nurses to experience the health risks are higher compared to other health professionals since nurses spend more time with patients and directly deal with their health status. Similarly, Chou, Li & Hu (2014) measured job stress among health professionals in a tertiary hospital and they found that nurses had the highest levels, followed by Physician Assistants and then Physicians.

The influence of commuting on occupational stress cannot be over-emphasised. From the study, it was found that out of the health workers who reported stress, majority of them are those who walked to work, which was followed by those who patronized commercial cars. The relationship between mode of travel and stress was significant ($X^2=52.12$, $p<0.0103$). Earlier research has depicted that commuting has effect on occupational stress and job satisfaction (Novaco & Gonzales, 2009; Amponsah et al, 2016).

The influence demographic characteristics played on stress in this study simply confirms Novaco et al (1990) description of inter-domain transfer effect which they defined as "the psychological consequences of environmental conditions in one's life domain (home, commuting, work) transfer to another, either positively or negatively". The findings also fall in line with the view expressed by Da Costa and Pinto, (2017) who stated that stress arises due to several factors which may emanate from individual and personal factors and all other activities leading or related to work.

5.3 Factors Causing Stress among Healthcare Workers of St. Joseph's Orthopaedic Hospital

The researcher assessed the various factors causing stress among the healthcare workers at St. Joseph's Orthopaedic Hospital. The study categorized these factors under job demand, job control and job support. Under each of these categories, the study determined the mean of each item on the scale as well as each sub-scale. They were then ranked to identify the most influential factors.

As indicated by Karasek (1979), job demand describes the workload and time pressure. This sub-scale had the lowest mean, implying it has lesser impact on the stress outcome. However, the item stating that their work demanded too much efforts (M=2.46) was ranked the highest stressor within that category. As noted by the World Health Organization, (2003), occupational stress results from a disparity between job demands and the worker's ability which mostly becomes a challenge to that individual worker to cope with the work.

Healthcare workers demand high level of skills and expertise and most of them are required to take their own initiatives. In this study it is found that items such as *I do not have a choice on deciding what I do at work* (M=3.01) and *my work demand high level of expertise* (M=2.92) as well as *I do not have the possibility of learning new things through my work* (2.87) were the highly ranked stressors within this category. These have been ranked as the highest factors influencing the job control. In literature, Theorell & Karasek (1996), indicated that job control is a person's ability to control his or her work activities in terms of making decisions on the job and using skill discretion on the job. Though the workers at the hospital experience low work demands on their job, they have low control over their work activities. This to a larger extent, has made them to report work-related stress. This falls in line with the observation made by Dapaa (2014) in a study which established that nurses' lack of control at the workplace is a source of workplace stress among them. Therefore, since nurses form the majority of the study (79%), the finding indicating lack of control as a stressor is a reflection of Dapaa (2014) assertion.

The job support describes the support and recognition one gets from colleagues, supervisors and other professions within the same domain. Findings of the study showed that majority of the workers consider this category as the main source of stress considering its highest mean (M=3. 23), ranking unsatisfactory salary as their most influential stressor. Li et al's (2014) study found that income which is a motivation to work can be a great source of stress when it is inadequate, leading to job dissatisfaction. Strained relationships at work is also a source of stress since they ranked factors such as *others do not understand if I have a bad day* (M=2.84) and *there is no calm and pleasant atmosphere at work* (M=2.78). When relationships with colleagues and supervisors alike are not pleasant, it can result in depression, and irritability (Preto & Pedràò, 2009) which would affect the quality of care

given. In a study, Yeboah et al (2014) observed that factors such as relationship with colleagues and supervisors, workload, work content and role conflicts results in work-related stress among health professionals. Rothman et al (2006) observed that nurses in South Africa reported high level of occupational stress as a result of persistent disagreement between them and physicians or other colleagues regarding patient's treatment.

5.4. Relationship between Stress Causing Factors and Stress Level

The study showed that there is a positive relationship between job demand and stress level ($r=0.652$, $p<0.05$). This indicates that as demands from the job increases, the occupational stress level also increases. On the other hand, a significant negative relationship existed between job control and stress ($r=-0.243$, $p<0.05$). Thus the more control healthcare workers have at the workplace, the lesser the level of stress experienced. These findings support Karasek's theory (1979) as conceptualized. Similarly, a study carried out in Taiwan to identify the factors and symptoms associated with work stress among health staff revealed that high job demand but low decision-making power and social support were related with development of stress-related symptoms (Tsai & Liu, 2012).

5.5 Coping Strategies Adopted to curtail the influence of Stress on Healthcare Workers

As widely recognized in literature (DiGiacomo, 2001; Iqbal and Kokash, 2011; Jins & Radhakrishnan, 2013), stress is inevitable and the inability of a worker to deal with it can have serious consequences on the health and economic situation of the worker. Also, Toppinen-Tanner et al, (2005) argued that the failure to cope with stress can result in a number of harmful consequences for an employer which may include impaired job performance, low morale, and increased sick-leave absences.

Consequently, healthcare workers at St Joseph's Orthopaedic Hospital adopt various strategies in order to curtail the influence of stress on the work activities. The various strategies adopted confirm Pearlin et al (1981) assertion that coping differ among individuals based on the magnitude of the problem and the social role from which those problems emanate. The workers used 7 out of 19 coping mechanisms on a mean of 1.77, with the most ranked being *seeking help from friends* (M=2.76). This was followed by *talking to somebody* (M=2.25) and *try to get the one responsible to change his/her mind* (M=2.25). As conceptualized, the first two are emotion-focused strategies whilst the third is problem-focused. All these strategies depend on interpersonal relationship. Relationships play a vital role in coping with stress as found by Vessel et al, 2015. Hence workers opening up to friends and trying to talk to the one responsible are all ways of using relationship to cope with the stress.

The next commonly used strategy was *praying/finding faith in one's religion* (M=2.20), which is also emotion-focused one. This is in line with a study conducted among nurses in Uganda where religion was a big deal when it comes to coping with all stress (Bakibinga, Vinje & Mittlemark, 2014). These nurses felt that their faith defined them, gave them peace in situations of adversaries and comforted them. However, Moore's et al (2007) in a study revealed that a greater proportion of health workers used strategies such as talking with others, spending time alone and socializing but used religious beliefs to cope with stress at the workplace least. Hence it is possible that praying and using religious faith is as a result of the fact that majority of the respondents were religious and also the facility being a mission hospital (Catholic, to be precise) who hold prayers in high esteem have translated into workers' style of coping too.

The other commonly used strategies in order of high mean score include: *seeking help from relatives* (emotion-focused), *seeking help from friends* (emotion-focused), *making a plan and*

following it (problem-focused) and *keeping busy at work* (emotion-focused). It is evident that the workers used more of emotion-focused strategies. According to Folkman & Lazarus (1980), females use more emotion-focused coping mechanisms whilst males utilize Problem-focused ones. From the study, females dominated; hence it can explain why most of the coping strategies used by the workers are emotion-focused ones.

The least adopted coping strategies are; drinking alcohol, taking tranquilizers and smoking more. Since coping with stress among health workers, as stated by Hannigan et al, 2004, is influenced by both individual and professional culture, it tends to result in collective encouragement or frowning on certain strategies. It is confirmed by the least ranked mechanisms such as smoking, drinking alcohol and taking tranquilizers.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Like in other professions, there is high stress level among healthcare workers at the St Joseph's Orthopaedic Hospital. The stress level among these workers is influenced by different elements, some relating to the demographic characteristics of the work, and/or their workplace environment. The study established that marital status, job designation, rank and shift system had great influence on occupational stress. It was found that being a Nurse/HCA, married, junior rank or walking to work is associated with occupational stress. Amongst the healthcare workers, Nurses/Healthcare Assistants and Doctors/Physician Assistants are those that experience severe stress at the workplace. The other category of workers mostly experiences normal stress.

With regards to job stressors, it was found that, the most identified issue resulting in the severe stress among the workers include insufficient salary, not having enough control over decisions concerning their duties as well as not being able to learn new things on the job. Though the workers do not lack the needed resources and materials to work effectively and efficiently, a good number of them do not get on well with their colleagues and supervisors. These factors have been the major issues causing the severe stress among the healthcare workers at the hospital. It was also found that as the job demand increased, stress level increased as well whereas with regards to job control, its increase resulted in a decrease in stress. This implies that, if the workers have enough control over decisions regarding their work, their stress level would reduce. There was however no significant relationship found between job support and occupational stress.

Consequently, healthcare workers at St Joseph's Orthopaedic Hospital adopt various strategies in order to curtail the influence of stress on the work activities. The strategies were both emotion-focused and problem-focused. They shunned maladaptive behaviours such as smoking, alcohol intake.

6.2 Recommendations

The recommendations are made based on experiences acquired from the field and the arguments expressed in literature. Consequently, the study recommends the following to hospital authorities, healthcare workers, consultants and other potential researchers who might have interest in exploring the issue of occupational stress.

1. Considering the high or severe level of stress among workers at the St Joseph's Orthopaedic Hospital, there is the need for proper education on the consequences of stress on the job. With this the researcher recommends that the human resource unit of

the hospital collaborates with the Ghana Health Service to organize regular seminars and workshops to train and educate healthcare workers on how to avoid avoidable stress and manage the unavoidable ones.

2. To reduce the workload on the workers at the hospital, the researcher recommends that the human resource unit employ more healthcare professionals to cover the personnel gap at the hospital. This will go a long way to address the high job demands.
3. To reduce stress from salary issues, hospital management must have a meeting with the leadership of the workers to discuss the way forward, at least meet their demands halfway.
4. Lastly, the study recommends that future researchers should consider researching into the specific impact of the stress level on the delivery of quality healthcare to patients.

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APPENDICES

Appendix A. Consent Form

Research topic: "Assessment of occupational stress among healthcare workers of St. Joseph Orthopaedic Hospital, Koforidua, Ghana"

Institutional Affiliation

School of Public Health

College of Health Sciences

University of Ghana

Legon

Personal information

The lead investigator is Grace Ansah, studying MSc. Applied Health Social Science at the School of Public Health and she is currently undertaking a research on assessment of occupational stress among healthcare in St Joseph Orthopaedic Hospital. This study is sorely for academic purpose in fulfilment of partial requirement for the award of Master of Science degree in Applied Health Social Science. This study is under the supervision of Dr Phyllis Dako-Gyeke, a senior lecturer at the School of Public Health.

Procedure

Interview will be conducted using survey questionnaire.

Risk and benefits

Although there is no known risk associated with this study, if you feel uncomfortable you can opt out. You have the liberty to withdraw from participating if you desire. There are no foreseeable harm that may arise from participating in this research. Result of this study could go a long way to add up to literature on assessment of stress and also guide policies on stress management in Ghana as a whole.

Anonymity and confidentiality

Please you are not required to write your name and be rest assured that information collected will be handled with the strictest confidentiality. It will be sorely for academic purposes and will not be shared with third parties who are not directly involved in the research.

Before taking consent

If you have any question, feel free to ask. In case you have any question to ask later, or clarification you wish to seek regarding the research, please do not hesitate to contact the principal investigator on 0208223781 or email baaba_an@yahoo.com or the academic supervisor on gyekenay@yahoo.com. Any clarifications regarding ethics can be directed to Miss Hannah Frimpong of the GHS Ethical and Review board on

PARTICIPANT

I ……. have been adequately informed about the purpose, procedures, potential risk of this study. I have had the opportunity to ask questions which have been answered to my satisfaction. I know that I can refuse to participate in this study without any loss of benefits to which I would have otherwise been entitled. Having gone through the consent form thoroughly, I agree to enrol in this study.

Name of participant …….

Signature ……

Date ……

Interviewer's statement

I have explained the procedure to be followed in this study to the participants in the language that he/she understands best and has agreed to participant in the study.

Signature of interviewer ……...

Date ……

Appendix B. Questionnaire

INTRODUCTION

Dear Sir/Madam, my name is Grace Ansah, a student of the University of Ghana. This questionnaire is designed to assess occupational stress among healthcare workers of St Joseph Orthopaedic Hospital, identify the stressors and how such stress is managed. Data from the questionnaire will be used for a thesis which is to be submitted to the School of Public Health of the University of Ghana, Legon in fulfilment of requirements for the award of a Master of Science degree in Applied Health Social Science.

Your name is not required. Do not write your name anywhere on this questionnaire. This is to assure you that all of your responses are for academic purposes only and will be treated with utmost confidentiality by both the researcher and the University. Participation is voluntary and you will be required to sign a consent form to confirm your participation in the study. However, you have the liberty to opt out of the study at any point in time. Please endeavour to complete all four parts of the questionnaire.

DEMOGRAPHIC DATA

This part seeks to know basic information about you. Please tick the one that best applies to you

1. **Age bracket**
   a. 20-25 years [ ]
   b. 26-31 years [ ]
   c. 32-37 years [ ]
   d. 38-43years [ ]
   e. 44-49 years [ ]
   f. Above 50 years [ ]
2. **Sex**
   a. Male [ ]
   b. Female [ ]
3. **Marital status**
   a. Married [ ]
   b. Single [ ]

c. Divorced [ ]

d. Widowed [ ]

e. Cohabiting [ ]

4. Religion

a. Christianity [ ]

b. Islam [ ]

c. Traditional [ ]

d. Other (specify)……..

5. Residential status

a. Residing in hospital acquired apartment [ ]

b. Self-acquired apartment [ ]

6. What is your mode of travel to work?

a. Foot [ ]

b. Private car [ ]

c. Commercial car [ ]

d. Hospital bus [ ]

e. Other (please specify)……..

7. How far do you travel from work? (using the distance from Koforidua Prisons to the hospital which is 2km as reference)

a. Less than 2km

b. Between 2 and 4km

c. Between 4 and 6km

d. Between 6 and 8km

e. Between 8 and 10 km

f. More than 10km

8. How long does it take you to get to work?

a. Less than 15minutes

b. 16-30minutes

c. 31-45minutes

d. 46-60minutes

e. 61-90minutes

f. 91minutes and above

WORK HISTORY

9. Job designation

a. Doctor [ ]
b. Physician Assistant [ ]
c. Nurse [ ]
d. Healthcare Assistant [ ]
e. Pharmacist [ ]
f. Physiotherapist [ ]
g. Laboratory technologist [ ]
h. Anaesthetist [ ]

10. Rank

a. Junior staff [ ]
b. Senior staff [ ]
c. Management staff [ ]

11. How many years have you worked in the health profession?

a. Less than 5 years [ ]
b. 5-10 years [ ]
c. 11-15 years [ ]
d. 16-20 years [ ]
e. Above 20 years [ ]

12. Work pattern for the past one month

a. Day shift [ ]
b. Night [ ]
c. Both [ ]

13. How long ago was your last promotion?

a. Less than a year [ ]
b. 1-2 years [ ]
c. 3-4 years [ ]
d. 5 years and above [ ]

WORKPLACE STRESS

These sets of questions bring out your level of stress with regards to the workplace. Please read each statement and circle a number, 1, 2, 3, 4 or 5 to indicate how much the statement applied to you. There are no right or wrong answers. Do not spend too much time on any statement.

The rating of the scale is as follows:

1= Never 2= Rarely 3= Sometimes 4= Often 5= Very often

ITEM	1	2	3	4	5
1. Conditions at work are unpleasant or sometimes even unsafe	1	2	3	4	5
2. I feel my job is negatively affecting my physical or emotional well being	1	2	3	4	5
3. I have too much work to do	1	2	3	4	5
4. I find it difficult to express my opinions or feelings about my job conditions to my superiors	1	2	3	4	5
5. I feel that my job pressure interferes with my family or personal life.	1	2	3	4	5
6. I have adequate control or input over my work duties	1	2	3	4	5
7. I receive appropriate recognition or rewards for good performance	1	2	3	4	5
8. I am able to utilize my skills and talents to the fullest extent at work.	1	2	3	4	5

***Items 6, 7 and 8 are reversed scored**

PART 3: JOB STRESSORS

This section seeks to identify causes of stress in the workplace. Please indicate in the table below how often you experience the following stressful situations at work. Please read the statements carefully and tick [√] the answer from the corresponding box that best describes your choice of response. The rating is as follows:

1 – Never; 2 – Rarely; 3 – Sometimes; 4 – Often; 5 – Always.

SOURCES	1	2	3	4	5
JOB DEMAND					
1. I have to work very fast					
2. I have to work very intensively					
3. I do not have enough time to do everything					
4. My work demand too much effort					
JOB CONTROL					
5. I do not have the possibility of learning new things through your work					
6. My work demand a high level of skill or expertise					
7. My job require me to take the initiative					
8. I do not have a choice in deciding how I do my work					
9. I do not have a choice in deciding what I do at work					
SOCIAL SUPPORT					
10. There is no calm and pleasant atmosphere at where I work.					
11. I do not get on well with each other where I work.					

SOCIAL SUPPORT	1	2	3	4	5
12. I lack resources and materials needed to work effectively and efficiently					
13. My salary is not satisfactory					
14. I do not get on well with my supervisors.					
15. The others do not understand if I					

have a bad day.					
16. I do not enjoy working with my co-workers.					

PART 4: COPING STRATEGIES

This final section seeks to find out your coping strategies. Please read each sentence carefully and circle which number best describes the frequency of using that strategy.

The rating is as follows:

1= Almost never 2= Rarely 3= Sometimes 4= Quiet often 5= Most of the time

ITEM	1	2	3	4	5
1. I watch TV or film	1	2	3	4	5
2. Listen to radio or music	1	2	3	4	5
3. I cry	1	2	3	4	5
4. I keep busy at work	1	2	3	4	5
5. I ignore the situation	1	2	3	4	5
6. I pray or find faith in God or my religion	1	2	3	4	5
7. Try to get the person responsible to change his/her mind	1	2	3	4	5
8. I learn to leave stress at the office	1	2	3	4	5
9. I increase my effort to make things work	1	2	3	4	5
10. I make a plan of action and follow it	1	2	3	4	5
11. Seek help from friends	1	2	3	4	5
12. Seek help from relatives	1	2	3	4	5
13. Seek help from a counsellor or priest	1	2	3	4	5
14. Talk to somebody about the situation	1	2	3	4	5
15. Drink alcohol	1	2	3	4	5
16. Take tranquilizers	1	2	3	4	5
17. I smoke more	1	2	3	4	5
18. I eat more	1	2	3	4	5
19. I eliminate unpleasant thoughts and emotions from memory	1	2	3	4	5

THANK YOU!!!