UNIVERSITY OF GHANA

EFFECT OF GHANAIAN NURSES’ MENTAL STRESS ON THEIR JOB SATISFACTION: THE ROLE OF WORKLOAD AND TIME PRESSURE

BY
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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL HUMAN RESOURCE MANAGEMENT DEGREE

JUNE, 2015
DECLARATION

I, ELIKPLIM AKU CUDJOE, the author of this work, do hereby declare that except for references cited, which have been appropriately acknowledged, this work is the result of my own research. It has never been presented anywhere in this university or any other university either in part or in whole. I therefore, bear the sole responsibility for any errors and shortcomings.

ELIKPLIM AKU CUDJOE

(10225160)
CERTIFICATION

I hereby certify that, this thesis was supervised in accordance with procedures laid down by the university.

………………………….……..                               …………………………

DR MOHAMMED -AMINU SANDA       DATE
(SUPERVISOR)
DEDICATION

I hereby dedicate this thesis to Mr. F. C. Cudjoe and Family for their unflinching love and support throughout my education. I appreciate your solid encouragement which has helped me attain this height. God richly bless you.
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<tr>
<td>ANA-</td>
<td>American Nurses’ Association</td>
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<tr>
<td>DDNS-</td>
<td>Deputy Director of Nursing Services</td>
</tr>
<tr>
<td>DOH-</td>
<td>Department of Health</td>
</tr>
<tr>
<td>DHHS-</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>GAR-</td>
<td>Greater Accra Region</td>
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<td>GHS-</td>
<td>Ghana Health Service/Sector</td>
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<td>GHWO-</td>
<td>Ghana Health Workers Observatory</td>
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<td>HRSA-</td>
<td>Health Resources and Services Administration</td>
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<td>ICN-</td>
<td>International Council of Nurses</td>
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<td>JDC-</td>
<td>Job Demand Control</td>
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<tr>
<td>KBTH-</td>
<td>Korle-bu Teaching Hospital</td>
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<td>MTHS-</td>
<td>Medium Term Health Strategy</td>
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<td>NASA-TLX</td>
<td>NASA Task Load Index</td>
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<td>OHRM-</td>
<td>Organization and Human Resource Management</td>
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<td>SPSS-</td>
<td>Statistical Package for Social Scientists</td>
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<td>SWAT-</td>
<td>Subjective Workload Assessment Technique</td>
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<td>TBAs-</td>
<td>Traditional Birth Attendants</td>
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<tr>
<td>USA-</td>
<td>United States of America</td>
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<td>WHO-</td>
<td>World Health Organization</td>
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ABSTRACT

The purpose of this study is to identify factors constituting workload, time pressure, mental stress and their job satisfaction of Ghanaian nurses and also to provide an understanding of the influencing relationships among these factors. Guided by theoretical concepts in work physiology and occupational health, a standardized questionnaire was adapted and used to collect data from 300 nurses in four public hospitals in Accra. The collated data was analyzed using factor, correlation and regression analysis. The results from the factor analysis showed that out of the six factors tested, only one was found to be predictive of time pressure (that is high time pressure). For mental stress, out of the nine factors tested only four were found to be predictive (that is psychological stress load, mental load, effort load and time load). For workload, out of six factors tested, only two were predictive (that is demand of work and effort load). For job satisfaction, out of six factors tested, only two were predictive (that is (1) Pay, organizational policies and professional status and (2) task requirement, interaction and autonomy). It was found from the correlation analysis that, mental stress and time pressure have a significant relationship with job satisfaction but workload does not have any significant relationship with job satisfaction, workload was also found to have a significant relationship with mental stress among Ghanaian nurses. Also, the regression results revealed that the presence of increased mental stress was found to decrease job satisfaction. When time pressure was introduced mental stress increased resulting in the reduction of job satisfaction while when workload was introduced, mental stress and job satisfaction neither increased nor decreased. It is concluded that the presence of time pressure increases mental stress while it decreases job satisfaction among Ghanaian nurses. It is therefore recommended that policies should be put in place to limit the number of patients seen by a nurse during a shift so as to reduce time pressure on them which will increase their job satisfaction.
CHAPTER ONE

INTRODUCTION

This chapter provides an introduction to the entire study. Accordingly, it focuses on themes such as background of the study, statement of problem, purpose of the study, objectives of the study, research questions, research hypotheses, significance of the study, scope and limitations of the study, definition of terms, and organization of the study.

1.1 Background

Health workers often experience considerable stressful workload, mental stress and time pressure in their occupation and this can have an effect on their job satisfaction (Keenan & McBain, 2007). Keeping patients safe from unintended harm is an important issue and fundamental for both the patient and the delivery system providing treatment as well as the safety of the caregiver as observed by the Department of Health, UK (DoH, 2000). Within the National Health Service (NHS), as in other developed as well as developing countries, there is inadequate record for patient safety (DoH, 2000).

According to Lang, Hodge and Olson (2004), there are several notable consequences of high nursing workload. Research shows that a heavy nursing workload adversely affects patient safety. In addition to higher patient acuity, work system factors and expectations also contribute to the nurses’ workload, nurses are expected to perform non-professional tasks such as delivering and retrieving food trays, house-keeping duties, transporting patients and ordering, coordinating or performing ancillary services (Aiken, Clarke & Sloane, 2001).
Past studies in the United States indicate that, medication administration, bed baths and patient transport are the aspects of care that have the greatest impact on workload and pose the greatest hazards to patients, provider and environmental safety. From these studies, it was found out that, there is a significant association between nursing workload and patient safety. According to Muller, Dail’Agnol and Marck (2013), it was observed that nursing staff with fewer patients presented the best results of care-related and management-related patient safety indicators. According to Nicklin and McVeety (2004), errors can result in patient care setting at any time during a shift. The likelihood of error increases when wards are busy or the workload is heavy. Many health care professionals feel fatigued, stressed, overburdened, at risk and or in pain and are not in a position to provide consistent quality care (Nicklin & McVeety, 2004).

According to the National Survey on Consumers’ experiences with Patient Safety and Quality Information report (2004), the most important issues affecting medical error rates are workload, mental stress and fatigue among health professionals, inadequate number of nurses and inadequate time spent with patients (National Survey on Consumers’ Experiences with Patient Safety and Quality Information, 2004). The heavy workload of nurses is a major problem for most health care systems worldwide (General Accounting Office USA, 2001). Nurses are experiencing higher workloads, time pressure and mental stress than ever before due to four main reasons 1. Increased demand for nurses, 2.inadequate supply of nurses, 3.reduced staffing and increased overtime, and 4. Reduction in patient length of stay.

First, the demand for nurses is increasing as a result of population aging and migration of health care workers. Between 2000 and 2020 for example, the united states population is expected to
grow by 18 percent (31 million), but the over 65 percent population, with more health care, is expected to grow by 54 percent (19 million) (General Accounting Office USA, 2001). In 2003, UK permits were approved for 5880 health and medical personnel from South Africa, 2825 from Zimbabwe, 1510 from Nigeria and 850 from Ghana (Ministry of Health Ghana Report, 2003).

Second, the supply of nurses is not adequate to meet the current demand, and the shortage is projected to grow more severe as future demand increases and nursing schools are not able to keep up with the increasing educational demand (US DHHS HRSA, 2001; Kuehn, 2007). When nursing shortage occurs, the workload increases for those who remain on the job (Baumann, Giovannetti & O’Brien-Pallas, 2001). In developing countries, the consequence of nursing shortage is the heavy nurse to patient workload, which in turn continues to drive nurse migration. A nurse from the main referral hospital in Lesotho found out that, 70 nurses tend to almost 3,400 patients, an average of close to 50 patients per nurse (Associated Press, 2006). In Malawi, a major hospital found out that, most of its nursing posts were vacant, and only two nurses were available to staff a maternity ward with 40 births a day (International Council of Nurses (ICN), 2004). The Minister of Health Care and Welfare in Zimbabwe estimates the nurse to patient ratio to be 1:700 but researchers found out that, nurses working in provincial hospitals may work with a nurse-patient ratio of 1:522 while in district hospitals, the ratio may be as high as 1:3, 023 (Chikanda, 2005).

Third, in response to increasing health care costs since 1990s, hospitals reduced their nursing staffs and implemented mandatory overtime policies to meet unexpected high demands, which
significantly increased nursing workload and time pressure. Many developing countries lack the resources to implement programs to improve the health of the poor. In Lesotho, research found out that, with a shortage of 700 nurses, the implementation of government campaign for confidential HIV testing and counselling was postponed (IRIN, 2006). In Swaziland, the nursing shortage is considered as the main impediment for the expansion and long term maintenance of critical antiretroviral therapy programs (Kober & Van Damme, 2006).

Fourth, increasing cost pressure forced health care organizations to reduce patient length of stay. As a result, hospital nurses today take care of patients who are sicker than in the past; therefore, their work is more intensive. Past research in the USA found out that, nurses who had a high workload over a shift would be pressured for time. Consequently, Carayon and Gurses (2008), found out that nurses would focus mainly on major patient issues and would not be able to attend to minor issues such as giving bath to patients or brushing patient teeth.

According to the World Health Organization (WHO) (2006), universal access to good quality care and optimal patient safety is the goal of health systems and governments all over the world. Even though developed countries have made significant achievements towards attainment of this goal, many developing countries in Africa lag behind due to financial, material and human resource constraints. Of the estimated global health workforce of 59.2 million, 3% are noted in Africa coping with 25% of the global disease burden. It is estimated that the health sector workforce density per 1000 population in Africa is 2.3 compared to 24.8 in the Americas (WHO, 2006).
According to the Ghana Health Service (GHS) (2011), Ghana is one of sub-Saharan African countries making considerable progress in many health outcome indicators. For instance, the percentage of antenatal and postnatal coverage improved from 42.2% and 33.8% in 2008 to 91.3% and 64.7% in 2011, respectively (GHS, 2011). The percentage of deliveries assisted by skilled health staff also increased from 44.2% in 2008 to 52.3% in 2011. Likewise, the number of outpatient visits per capita improved from 0.77 in 2008 to 1.07 in 2011. An estimated 52,258 people are formally working in the health sector in Ghana, of which 81.5% are employed in the public sector serving more than 24 million people (Ghana Health Workers Observatory (GHWO), 2011). Of the formal sector workers, 56% are non-clinical staff while 44% are clinical staff. There are also 21,791 people registered as engaged in traditional medicine and 367 Registered Traditional Birth Attendants (TBAs) (Ghana Health Workers Observatory (GHWO), 2011).

The doctor-patient ratio in 2006 was 1:14,733 but improved to 1:10,034 in 2011. Likewise, nurse-patient ratio improved from 1:1,537 in 2006 to 1:1,240 in 2011 (Ghana Health Service (GHS), 2011). Two major teaching hospitals in urban Ghana employ more than 45% of the country’s medical doctors. Fewer than 15% of medical doctors work in the district and sub-district health facilities. In total, an estimated 68% of the health workforce work in urban areas where more than 50% of the Ghanaian population lives and 32% in the rural areas (Ghana Health Workers Observatory (GHWO), 2011).

Despite these estimates of staffing in the Ghana health sector, workload of health workers still seems to be an issue in proper and effective healthcare delivery to patients (GHWO, 2011). The
Ghana Health sector (2007) indicated that, the Korle- Bu Teaching Hospital (KBTH) faces on daily basis, challenges such as overcrowding and congestion of departments and wards by patient and this results in a high workload, mental stress and pressure for time for health workers especially nurses.

1.1.1 The Ghana Health Sector

Ghana's healthcare industry is typified by a government sector that serves the majority of the population and a growing private sector that serves 40 percent of healthcare needs (Ghana Health Sector, 2009). The health industry consists of all firms directly engaged in the production and promotion of health care. These include all firms (both public and private) operating in the health market and are involved in the manufacturing of health products, provision of health care, health enhancing services and generation of knowledge in support of health (Ghana Health Sector, 2009).

The overall aim of the health sector is to promote healthy lifestyles and reduce risk factors that arise from environmental, economic, social and behavioral causes.

The structure of the Ghana Health Sector consists of:

i. Health services

ii. Communicable disease control

iii. Non-communicable disease control

iv. Reproductive and sexual health

v. Nutrition

vi. Accident and emergency services
vii. Clinical care

viii. Traditional and alternative medical practice

ix. Rehabilitation

1.1.2 Ghana Health Service

The Ghana Health Service as a Ghanaian government body was established under Act 525 of 1996 (as required by the 1992 constitution) as part of the health sector reform in Ghana. The Health Service is under the Ministry of Health. It is an autonomous Executive Agency responsible for implementation of national policies under the control of the Ghana Minister for Health through its governing council, the Ghana Health Service Council (Ghana Health Service, 2011). The Ghana Health Service still continues to receive public funds and thus remain within the public sector. However, the employees are no longer part of the civil service and their managers are no longer required to follow all civil service rules and procedures. The reason for the independence of the GHS is to ensure that staffs have a certain degree of managerial flexibility to carry out their responsibilities than would be possible if they remain within the civil service.

Ghana Health Service does not include Teaching Hospitals, Private and Mission Hospitals (Ghana Health Service, 2011). The establishment of the GHS was an essential part of the key strategies identified in the Ghana Health Sector Reform process, as outlined in the Medium Term Health Strategy (MTHS). Which were necessary steps in establishing a more equitable, efficient, accessible and responsive health care system (Ghana Health Service, 2011). The Ghana Health Service has a mix of well-motivated workforce or health professional distributed
equitably across the country to manage and provide health services to the population (The Ghana Health Sector, 2007).

- **The Ghana Health Workforce/Human Resources**

The categories of workforce in the health sector in Ghana includes medical officers, dental surgeons, pharmacists, Expatriate staff (Doctors and Technicians), professional nurses, enrolled nurses (health assistants), community health nurses, registered nurses, medical assistants, allied health professionals and non-clinical and clinical staff.

1.1.3 Work orientation of nurses in Ghana

The American Nurses’ Association (2003) in its definition of nursing indicated it in functional terms as “the protection, promotion and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities and populations” (American Nurses’ Association, 2003, p.6).

According to Morris, MacNeela, Scott, Treacy and Hyde (2007) this definition just describes the function (work) in terms of what the nurse does for the patient and the function of the nurse is dependent on the area of health care and the physical environment in which the nurse is working. However, in modern society, nursing work also include non-patient specific activities, for example, nurse education, and management of healthcare systems and administration (Morris, MacNeela, Scott, Treacy & Hyde, 2007).
A more global comprehensive definition of nursing has been given by the International Council of Nurses (ICN) (2004) as undertaking ‘a collaborative and autonomous care of individuals of all ages, families, groups and communities, sick or well in all settings. Nursing involves the promotion of health, prevention of illness, and care for the ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in-patient and health systems management and education are also key nursing roles’ (ICN, 2004).

The definition of nursing however, that has gained prominence and has been adopted by the World Health Organization (WHO) is Henderson’s (2004) definition of nursing as “assisting the individual, sick or well in the performance of those activities contributing to health or its recovery (or to a peaceful death) that a person would perform unaided given the necessary strength, will or knowledge, and to do this in such a way as to help the individual gain independence as rapidly as possible” (Encyclopedia of Nursing Research, 2006, 2nd edition, page 259).

The International Council of Nurses (ICN) (2013), defined nurses as people who care for individuals of all ages, families, groups, communities sick or well in all settings. They also promote health, prevent illness and care for the ill, disabled and the dying. Nurses usually work with doctors and other health care professionals to ensure the wellbeing of patients and to keep them healthy. Nurses’ duty is tantamount to plan and provide medical and nursing care to patients who are suffering from both chronic and acute physical or mental health in a hospital, at home or in other settings (ICN, 2013). Cooper (1994) and McGowan (2001) identified that,
the nursing profession has been increasingly characterized by occupational stress and extreme workload. Cooper (1994) and McGowan (2001) further noted that, most experienced nurse practitioners often face overwhelming stress through caring for clients, individuals, families, groups, communities with multiple, complex and distressing problems.

Ghanaian nurses regularly confront emotionally charged situations and encounter intense interpersonal and inter-professional situations and conflicts in the workplace while trying to make appropriate and safe decisions for their patients (Cooper, 1994). Cooper (1994) further noted that, professional nurses are one occupational group who may be exposed to various types of occupational stressors and these stressors could come from work procedures, the relationship between themselves and medical officers as well as the relationship between them and patients. Semmer (1996) noted that, patients often exhibit different sick behaviors; and these sick behaviors negatively impact nurses’ job satisfaction and make it difficult in choosing the methods of predicting and handling them very stressful and dynamic. Offei and Quansah (2009), pointed out that, the Ministry of Health (MOH) in Ghana is aware of nurses’ plight and workload and had made attempts in finding ways of helping nurses cope with daily stressors but is unsure of where to start. In this light, it is not surprising therefore that, MOH has a policy that entreats nurses in the country to render quality care to the population, and thus there is a growing concern about the quality of service rendered (Offei & Quansah, 2009).

Offei and Quansah (2006) further stressed that, nurses have a major role to play in the provision of timely and quality services but high levels of occupational stress have not made this possible. Also, in Ghana, more males are not willing to choose nursing as a career and this has had an
effect on the nurse-patient ratio and thereby increasing stress on existing staff. Again, the
Ghana Health sector (GHS, 2007) observed that, the Korle- Bu Teaching Hospital (KBTH)
faces on daily basis, challenges such as overcrowding and congestion of departments and wards
by patient and this results in a high workload for health workers especially nurses.

Furthermore, in addition to this, there are obsolete medical equipment and deteriorating
physical structures and this put more stress and workload on the health workers there. Also, a
problem of dwindling nursing staff is occurring as a result of nurse migration to foreign
countries in Ghana leading to increased workload and reduction in employee morale (GHS,
Carried out a survey in three regions of Ghana (Greater Accra, Brong Ahafo and Upper West)
on practicing nurses and job satisfaction and found out that, many respondents reported low
satisfaction. This was influenced by high workload and difficult working conditions of the
nurses.

1.1.4 Categories of nurses in Ghana

The various categories of nurses in Ghana are as follows, general nurses, nurse educators,
community health nurses, government registered midwives, peri-operative nurses, ophthalmic
nurses, psychiatric nurses and critical care nurses. A general nurse can however work as an
inpatient or an outpatient nurse in a health facility.
1.1.5 Main duties and responsibilities of nurses in Ghana

The main duties and responsibilities of nurses according to Nurses and Midwives Association in Ghana are outlined below:

i. Undertake assessment, planning and implementation of interventions for addressing patient care problems.

ii. Evaluate patient responses to interventions and modify plans as needed.

iii. Undertake and demonstrate nursing tasks in the best interest of patient care and professional standards.

iv. Washing and bathing patients

v. Bed Making

vi. Elimination including catheterization, bowel and stoma care

vii. Feeding e.g. oral, nasogastric or parenteral feeding and ensuring adequate nutritional intake for patients in liaison with the dietician.

viii. Obtaining specimens e.g. bodily fluids, wound swabs, blood.

ix. Administration of drugs e.g. oral, intravenous, subcutaneous, rectal and topical and monitoring of effects.

x. Simple and complex dressings.

xi. Monitoring of vital signs (Pause, temperature, BP, respiration)

xii. Demonstrate an enquiring approach towards patient care.

xiii. Read reports and take note of critical cases, do chart rounds and ensure treatment has been given.

xiv. Participate in the ward rounds
xv. Assist with manual handling and transferring of patients in compliance with the hospital policy

xvi. Maintain a safe and therapeutic patient care environment

xvii. Undertake the last offices for deceased patients and give relevant information to relatives/carers

xviii. Advise on the promotion of health and prevention of illness, teaching patients and their relatives where appropriate

xix. Assist the Ward Manager/Unit In-Charge in promoting the right of patients/clients

xx. Maintaining the privacy and dignity of clients/patients and staff

xxi. Perform other official duties assigned by the Ward Manager/Unit In-Charge

1.2. Problem Statement

As highlighted in sub-sections 1.1.3 and 1.1.5 above, it is obvious that nurses in Ghana are overburdened with too much workload, time pressure and mental stress that affect their job satisfaction. Therefore there is the need to study the relationship between workload of nurses, their time pressure, their mental stress as well as their job satisfaction in order to know the factors that constitute and contribute to these in selected public hospitals in Accra so that guidelines can be given to management as to how to effectively manage these components to increase their job satisfaction that will lead to the promotion of effective care delivery.
1.3 Purpose of the Study

The purpose of this study is to determine the effect of mental stress on job satisfaction of Ghanaian nurses and also to provide an understanding of the role of workload and time pressure on this relationship in four Ghanaian public hospitals.

1.4 Objectives of the Study

The research objectives are as follows:

1. To find out what factors constitute workload of nurses.

2. To find out what factors constitutes nurses’ mental stress.

3. To find out what factors constitute nurses’ time pressure.

4. To find out what factors constitute nurses’ job satisfaction.

5. To find out whether workload of nurses will have an effect on their mental stress.

6. To ascertain whether nurses’ mental stress will have an effect on their job satisfaction.

7. To find out whether nurses’ workload will affect the relationship between their mental stress and job satisfaction.

8. To ascertain whether time pressure on nurses will affect the relationship between their mental stress and job satisfaction.
1.5 Research Questions

The research questions are as follows:

1. What factors constitute workload of nurses?

2. What factors constitute nurses’ mental stress?

3. What factors constitutes nurses’ time pressure?

4. What factors constitute nurses’ job satisfaction?

5. What effect will nurses’ workload have on their mental stress?

6. What effect will nurses’ mental stress have on their job satisfaction?

7. How does nurses’ workload affect the relationship between their mental stress and job satisfaction?

8. How does time pressure on nurses affect the relationship between their mental stress and job satisfaction?

1.6 Research Hypotheses

The study test the following hypotheses (derived from chapter two)

H1: Nurses’ workload will have an effect on their mental stress

H2: Nurses’ mental stress will have an effect on their job satisfaction.

H3: Workload of nurses will affect the relationship between job satisfaction and mental stress

H4: Time pressure on nurses will affect the relationship between job satisfaction and mental stress.
1.7 Significance of the Study

The significance of this study contributes to policy, practice and feed into future research.

- **Policy**

The significance of this study is that, after finding out what factors contribute to workload, time pressure, job satisfaction and mental stress among nurses, this research recommends guidelines to the Ministry of Health and management to help alleviate the occupational stress nurses go through which will subsequently enhance their care delivery to patients and the public at large, enhance their job satisfaction and help them perform their jobs well.

- **Practice**

This research also provided guidelines to nurses on how to properly manage their workload, time pressure and mental stress to reduce errors in the execution of their duties.

- **Future research**

Finally, the study contributes to the body of knowledge in the area of workload, time pressure, mental stress and job satisfaction among nurses in developing countries like Ghana. The present study also identifies gaps for future studies and this will help fellow researchers in related area and serve as a source of reference to academia in general.
1.8 Scope and Limitation of the Study

The scope of the study covers selected public hospitals in Accra only. The limitation of the study is that, due to factors relating to time, this study was conducted in only four (4) major public hospitals in Accra which will make it difficult for generalization to the private hospitals and other public hospitals in other regions. Also, only nurses from selected public hospitals in Accra have been chosen for this study and this may affect generalizing of the study to other nurses in especially private hospitals.

Finally, the survey used to gather the data for the study (especially the mental stress scale) contained too many items and there were similarities in the items that is likely to confuse the respondents and could cause them to lose their patience in providing accurate responses.

1.9 Definition of Terms

Nurses: They are those who care for individuals of all ages, families, groups, communities, sick or well in all settings. They also promote health, prevent illness and care for the ill, disabled and the dying (ICN, 2013).

Workload: It is the amount of work an individual has to do or the amount of effort required by a job (Jex, 1998).

Time Pressure: Occurs when people feel rushed, feel interrupted or are asked to repeat something over and over again and this causes anxiety (Beevis, 1999).

Mental Stress: Strain relating to the mind as a result of anxiety or overwork (Ilmarinen, 2001).
Job Satisfaction: Job satisfaction is an affective (that is, emotional) reaction to one's job, resulting from the incumbent's comparison of actual outcomes with those that are desired (Shinde & Kapurka, 2014).

1.10 Organization of the Study

This study is organized in five parts namely: chapter one which is the Introduction consists of background of the study, statement of problem, purpose of the study, objectives of the study, research questions, significance of the study and scope and limitation of the study. Chapter two: Literature review consist of empirical evidence underpinning the study, research frameworks of the study and the conceptual framework of the study. Chapter three: Methodology consist of target and study population, sampling procedure and sample size, research design, types and data source, research instrument, administration of research instrument and data handling. Chapter four: Analysis and Discussions. Chapter five: Summary, Conclusion and Recommendation.
CHAPTER TWO

LITERATURE REVIEW

This chapter presents discussions on relevant literature in the area of work physiology and occupational health including job satisfaction. The review of literature is categorized under employee workload, workload of nurses, nurses’ time pressure, nurses’ mental stress, nurses’ job satisfaction, relationship between nurses’ mental stress and job satisfaction, the role of nurses’ workload on mental stress and job satisfaction, the moderating role of nurses’ time pressure on mental stress and job satisfaction, conceptual framework for the study and finally, research frameworks.

2.1. Employee Workload

Workload is the amount of work an individual has to do (Jex, 1998). According to Hart and Staveland (1988), workload is described as the perceived relationship between the amount of mental processing capability or resources and the amount required by the task. According to Hart and Staveland (1988), if people could accomplish all the requirements imposed on them quickly, accurately, reliably and with little effort using existing resources, the concept of workload will have had minimal practical importance. However, they often cannot; in some cases task demands simply exceed operators’ capabilities while in others, apparently human limitations reflect poorly designed controls or displays, inappropriate or inadequate automation, or insufficient training (Hart & Staveland, 1988). Hart and Staveland (1988) further pointed out that, such decrements in the performance of an individual operator, which may occur if the workload is either too high or too low, can result in the reduction of overall system effectiveness.
Booher (1990) noted that although human adaptability and creativity are essential to the effective functioning of complex systems, human capabilities and limitations are also present in limiting an overall system performance. Hart and Wickens (1990) indicated that, workload is a general term used to describe the cost of accomplishing the task requirement for the human element of machine systems. This ‘cost’ may be reflected in the depletion of attentional, cognitive, or response resources, inability to accomplish additional activities, emotional stress, fatigue or performance decrements (Hart & Wickens, 1990). Hart and Wickens (1990) further noted that there is a difference between the actual amount of work and the individual’s perception of the workload.

Workload can be quantitative (the amount of work to be done) or qualitative (the difficulty of the work). Again, workload can also refer to the total energy output of a system, particularly of a person or animal performing a strenuous task over time (Booher, 1990). Carayon (2006) stated that, one place where workload can be applied is weight-lifting or weight training, where scientific research has shown evidence that it is the total ‘workload’ that is necessary to the growth of the muscle as opposed to just the load or the volume or ‘time under tension’.

Given this analogy, workload can be broken down into “work + load”, which refers to the work done with a given load (Carayon, 2006). As Carayon (2006) exemplified, with weight training, the ‘load’ refers to the heaviness of the weight being lifted; for example, 20 kg is greater than 10 kg, and the ‘work’ refers to the volume, or total number of reps and sets done with that weight; for example, (20 reps is more than 10 reps but 2 sets of 10 reps is the same work as 1 set of 20 reps, it’s just that the human body cannot do 20 reps of heavy weight without a rest,
so it is ideal to think of 2×10 as being 20 reps with the remaining in the middle) (Carayon, 2006).

Carayon and Gurses (2008) noted that, employees’ in practical life seem to be exposed to the problem of workload because it is obvious that the interest of the organizations and employees are not in the same direction. According to Shah, Jaffari, Aziz, Ejaz, Ul-Haq and Raza (2011), workers basically wish to have less work with them while managers try to take optimal production from existing workers by overloading them. According to Carayon and Gurses (2008), workload from the employees’ perspective refers to the intensity of job assignments. Carayon and Gurses (2008) further observed that, workload is a source of mental stress for employees.

According to Robbins (1999), stress is an active state of mind in which human being faces both an opportunity and a constraint. Robbins further stressed that, there are various ways that stress symptoms or outcomes are reflected in the workplace. In stress, Robbins (1999) noted that, outcome that is desired from the employee is generally perceived to be both uncertain and important. Robbins (1999) indicated that, if an outcome of an activity is well known earlier or the employee has no interest to enjoy the fruit of task completion or to avoid the consequences of non-accomplishment, the potential stress cannot become actual stress. Robbins (1999) further pointed out that, many other variables have their impact on the stress level of human beings besides workload.
Previous studies by Robbins (1996) pointed out that, the stress factors at work can be classified into four groups, these are the working conditions (including shift problems, weekend duty, inadequate pay, long working hours, discrimination and safety issues), relationship at work (including poor relationships at horizontal and vertical levels), ambiguity in authority and responsibility (including ill-defined role, functions, expectations and duties), and organizational structure and climate (including communication policy and practice, major changes in the workplace, culture of the organization, and lack of participation in decision-making).

According to Schultz (2002), in organizations, reaction of people toward workload is different. Some are able to handle it much better while others find it difficult to handle. Workload differs as a function of one’s type of occupation just as it differs as a function of the individual. Some occupations are inherently more work loaded than others (Schultz, 2002). A research, further by Schultz (2002) on the same topic of stress describes that, certain individuals, in different occupations are increasingly exposed to be under unacceptable level of workload stress.

However, Robbins (2012) argues that, stress is not necessarily bad in itself, while it is typically discussed in a negative context. Robbins (2012) further stressed that, it is an opportunity when it offers potential gain. Robbins (2012) also viewed that employees who have enough work to do remains more active and energetic while work-less employees leftover inactive and lazy. Robbins (2012) pointed out that, workload pressure can be positive leading to increased productivity. Robbins (2012) further noted that, underutilization of human skills or failing to reach the full potential of the employees is also one reason to increase stress and also, employees who possess the capabilities to perform a job enjoy workload. Murphy (2004) however also
argues that, when this pressure becomes excessive, it has negative impact. In this case, the individuals perceive that they do not possess the necessary skills and abilities require to tackle the stress. Murphy (2004) further stressed that, occupational stress is discomfort at a personal level when it exceeds a person’s coping capabilities and resources to handle them adequately.

Also, a study by Smith and Gray (2001) indicated that, majority of workers report high intensities of stress and are associated with considerable rises in health service utilization. Smith et al (2001) also indicated that, stress is the leads cause of labour turnover, absenteeism, conflict and accidents in any organization. According to DeFrank and Ivancevich (1998); Sparks and Cooper (1999); Taylor, Repetti and Seeman (1997), a number of aspects of working life have been associated with stress. Burke (1988); Nelson and Burke (2000), also highlighted that, aspects of the work itself can be stressful, namely work overload and role-based factors such as lack of power, role ambiguity, and role conflict.

2.1.1. Workload of nurses

According to Morris et al (2007), there is no common definition of nursing workload. While Caplan and Jones (1975) defined ‘workload’ in terms of the amount of performance required to carry out any job, Arthur and James (1994) also defined ‘nursing workload’ as the ‘volume and level of nursing work’ (p.558). The term ‘nursing workload’ is cited in relation to quantify nursing work with the view to inform resource management (Morris et al, 2007). Nurses perform a variety of job duties during their shifts, thus caring for and educating patients about their conditions, as well as establishing trust and building rapport with patients and their families (U.S Department of Labour, 2014).
The professional hazard associated with nursing job is back stress because nurses spend a great deal of their time standing, walking along with bending and lifting. Moreover, nurses are also faced with coming into close contacts with patients who have infectious diseases that might affect their health (U.S Department of Labour, 2014). Workload can be a contributing factor to errors (Reason, 1990; Vincent, Taylor-Adams & Stanhope, 1998). Errors have been classified into two categories by Reason (1990) as: (i) Slips and lapses or execution errors. This is caused by high cognitive workload; for example forgetting to administer medication and (ii) Mistakes or knowledge errors; for example inadequate hand-washing. High workload in the form of time pressure may reduce the attention devoted by a nurse to safety-critical tasks, thus creating conditions for errors and unsafe patient care (Reason, 1990).

Errors can result in the patient care setting at any time during a shift (Reason, 1990). Reason, (1990) further noted that, the likelihood of error increases when wards are busy or the workload is heavy. Many health care professionals feel fatigued, stressed, overburdened, at risk and or in pain and are not able to provide consistent quality care (Nicklin & McVeety, 2004). Donkor & Andrews (2011) noted that, all over the world, nurses whether in a developed or developing country, play an integral role in the healthcare delivery system. Donkor et al. (2011) further indicated that nurses in Ghana, are no exception; they are at the heart of providing health care to individuals, families, and communities. A study by Menzies (1960) discovered that, there are four sources of nervousness and stress among nurses: decision-making, patient care, taking responsibility and change. Menzies (1960) further stressed that, the nurse’s responsibility has long been considered as stress-filled based upon the human suffering physical labour, work hours, interpersonal relationships and staffing that are vital to the work nurses do. Work hours
in this context refer to shift work rotation. Harma, Tannkanen, Sjoblom, Alikoski and Heinsalmi (1998) noted that, complaints of sleep deprivation related to rotating shift has been reported by a number of nurses. Harma et al (1998) further noted that, rotating shift tend to cause more disruption.

Fitzpatrick, While and Roberts (1999) also observed that Persons who rotate shift are the most likely to report sleep disturbances, less job satisfaction, lower mental scores, and more accidents than do permanent night shift workers. However, Roberts et al (1999) again noted that, in the last three decades, the work stress of nurses have been rising due to increasing use of technology, continuing going up in health care costs and unrest in their work environment.

2.2. Time pressure among nurses

According to Beevis (1999), time pressure is the perception that time is scarce. Beevis (1999) further pointed out that, people experience time pressure when the time required to execute tasks is more than 70% of the total time available for the tasks. Furthermore, Beevis (1999) suggested that people experience high time pressure when 85% of the available time is needed to execute the tasks. In this case, performance is often impaired in that some tasks are not (well) executed.

According to Demerouti, Bakker, Nachreiner and Schaufeli (2000), Time pressure may take many forms. For instance, having to do various activities within a fixed period of time leaves little time for each activity. Time pressure may also take the form of working against deadlines. Time pressure has been found as an important strain factor in nursing in general (Demerouti et
al, 2000; Rout, 2000). Rout (2000) found out that time is the most critical resource in nursing to ensure a high quality of care. Rout (2000) further stressed that, lack of time reduces the quality of care as well as increasing the strain on nurses and caregivers. According to Demerouti et al. (2000), time pressure is part of the most common factors for mental work overload. Four out of five nurses often experience time pressure at work. Demerouti et al. (2000) again pointed out that, a common and understandable reason for time pressure in nursing is an insufficient nurse-to-patient ratio in many institutions.

Health care facilities are facing considerable financial pressures and often cut back staff, to reduce their costs. However, as numerous studies have shown, an inappropriate nurse-to-patient ratio leads to a clearly reduced quality of care and even to higher mortality. According to Thompson, Cullum, McCaughan, Sheldon, and Raynor (2004), time is undoubtedly an issue in many nursing environments; a single nurse has been observed facing up to 50 significant clinical judgments in a single 8-hour shift in a medical admissions unit. Bucknall (2000) also revealed similar patterns of multiple judgments and choices in bounded time frames. Bucknall (2000) further found out that intensive therapy unit nurses face a clinical judgment or decision every 30 seconds in Australia.

2.3 Mental Stress among Nurses

Mental stress has been identified as a term comprising mental arousal and/ or emotional stress (Tucker & Spear, 2006). Mental stress can be triggered by a number of mental tasks like mental arithmetic, public speaking among others. Mental stress evokes pathophysiologic responses (for example, myocardial ischaemia) (Tucker & Spear, 2006).
Cognitive functions such as perception, memory, learning, thinking and use of language has become the primary target of research (Ilmarinen, 2001). Redding and Robinson (2009) indicated that, most acute inpatient care requires nurses to constantly shift their attention to make clinical decisions and manage care for groups of patients in a continually changing environment. Nurses must integrate complex thinking processes with psychomotor and affective skills to deliver appropriate interventions (Redding et al, 2009). Redding et al (2009) further noted that, nurses must repeatedly revise their priorities as patients’ conditions change. Roche (2002) further highlighted that, at the same time, nurses must juggle important patient education, family concerns, new admissions, discharges, and numerous other activities for other patients.

In a pilot study of taking clinical decision by Beyea, (2007) it was discovered that, complex thinking by nurses in carrying out their duties was disrupted by multiple interruptions and distractions. These disruptions compete for nurses’ attention and can lead to errors or omissions in care and possibly pose a patient safety risk. Tucker (2004) in his research has shadowed nurses and observed them as they cared for patients throughout their shifts. Tucker (2004) discovered that, the impact of operational failures on hospitals whose studies reported a number of interruptions was great, the number ranged from 4 interruptions per hour to 6 per hour. Tucker (2004) again noted that, nurses were interrupted by patients, family members, physicians, nursing technicians, other nurses, students, and staff from other departments. Nurses were interrupted with telephone calls, pagers, and face-to-face interruptions. Each interruption reflected operational loss and was estimated to cost $95. Tucker and Spear, in their later work in 2006 noted that, many of these interruptions occurred during the intervention
phase of the nursing process. Brixey, Robinson, Tang, Johnson, Zhang and Turley, (2005); Balas, Scott and Rogers (2004) also noted that, nurses were in the process of performing such activities as traveling to patient rooms, gathering supplies, preparing or administering medication, and patient teaching. These interruptions created a risk for medication error and the potential for unintentional omissions in care (Brixey et al. 2005; Balas et al. 2004).

2.4. Nurses’ Job Satisfaction

Job satisfaction has been defined by Shinde and Kapurka (2014) as the degree of positive affect towards the overall job or its components. Several authors distinguished between operational definitions of job satisfaction as a) an overall rating of the job as an entity and b) the sum of evaluative ratings of several job characteristics or ‘facets’. Lu, Barriball, Zhang and While (2012) pointed out that, job satisfaction depends both on the nature of the job and on the expectations health workers have of what their job should provide, and is thus the affective orientation that employees have towards their work.

Stamps and Piedmonte (1986) conceptualized job satisfaction as comprising six components namely: Pay, autonomy, task requirements, organizational policies, interaction and professional status. They further opined that, job satisfaction is derived from the congruence of workers’ expectations about these six components of satisfaction and the degree to which the job fulfills those expectations (rewards). In the opposite, discrepancy between expectations and fulfillment leads to lower job satisfaction. Nurses and job satisfaction survey (2005) revealed that 32% of respondents (nurses) were expected to change their jobs and 18% planned on leaving their present jobs in the next six months due to job dissatisfaction. Overlooking the job satisfaction
of nurses would be unfavorable to the medical sector, as such the managers are responsible for it (Piko, 1991). Piko (1991) further noted that, the care of nurses is the prime feature of the patient analysis of the hospital admission; therefore, happy patients are satisfied because of the better care of nurses.

Ludwig and Strasser (2001) pointed out that, unhappy nurses have a lot of opportunities to pass their distress down if they want. Ludwig et al (2001) further noted that nurses give the medicine to patients and so they are the closest point of service to them, and also, nurses enjoyed their work mostly by helping people and this is what enables them to give quality care and feel good that their care for their patients was good at the end of the day.

Farrel and Dares (1988) assessed the level of job satisfaction of nurses in the general hospital and discovered that they had low satisfaction due to lack of team work among themselves and other members of the health team as compared to those who work in the psychiatric units in Australia. Barker (2001) noted that, nurses are looking for decent salaries and benefits, easy schedules, stability and recognition. Al-Hussami (2008) found out that, job satisfaction among nurses depends on commitment, perceived supports, leadership and education level.

### 2.5. Relationship between Nurses’ Workload and Mental Stress

According to Nichols, Springford and Searle (1981); McGrath, Reid and Borrey (1989), some common stressors in nursing specialties include poor working relationship between Nurses and other health team members, demanding communication and relationship with patients’ relatives, emergency cases, high workload, understaffed and lack of support or feedback from their seniors. Smith (2006) noted that in the USA, it is estimated that work stress costs the nation billions of dollars a year in lost productivity, health care expenses, and stress-related
lawsuits. According to Lu (1997), workload is a timely and important topic for workers, that is the condition in which some factors or combination of factors interferes with the worker to disrupt his or her physical, psychological, or social homeostasis.

According to Greenglass et al (2003), a heavy nursing workload can lead to distress (for example, cynicism, anger and emotional exhaustion) and burnout. They also stressed that, nurses experiencing stress and burnout may not be able to perform efficiently and effectively because their physical and cognitive resources may be reduced and this suboptimal performance may affect patient care and safety. According to Gurses (2005), whereas the distance between the patients’ rooms assigned to a nurse affects physical workload, the conditions of the work environment (noisy versus quiet, hectic versus calm) affects the overall effort spent by the nurse to perform her job. From this observation, the following proposition (H1) can be made pertaining to the work of nurses in Ghana:

H1: Nurses’ workload will have an effect on their mental stress

2.6. The relationship between Nurses’ mental stress and job satisfaction

Lopper and Compton (2004) were of the opinion that, in today’s medical sector, with increased number of patients and lesser trained staffs, some nurses are overburdened and may have long and stressful days. Therefore increasing staff gives control over work and allow them to operate within their boundary and this also help reduce mental stress and increase their job satisfaction (Lopper et al, 2004). Evans (1991) surveyed about 500 nurses annually in a hospital and found a 22% turnover rate. Their pay was not the cause of the turnover as it was above average, but the survey found the cause of the turnover to be less control on the job and less appreciation from senior managers. Evans (1991) again noted that, the nursing department suffering from a
shortage was expected to worsen as job satisfaction was cited as the main cause for the change of job. From this survey, Evans (1991) also found out that, nurses’ dissatisfaction increased from 40 to 60% as they become mentally stressed and burned out.

Other reasons for getting burned out were less staff, demanding workloads, and working hours leading to time away from their homes (Evans, 1991). Fletcher & Payne (1980) identified that a lack of satisfaction can be a source of mental stress, while high satisfaction can alleviate the effects of mental stress. This study reveals that, both mental stress and job satisfaction were found to be interrelated.

However, in a study carried out by Tyler and Cushway (1995), they investigated the possible buffering effects of job satisfaction but found no strong evidence for this despite job satisfaction being negatively correlated with mental stress. Boumans and Landeweerd (1992) equally investigated the effects of coping in a sample of over 500 nurses and found out that active problem solving was positively related to job satisfaction but was not significant. According to Stone, Neale and Shiffman (1993), stress appraisals often produce negative emotions. Previous studies by Stone et al (1993) has found higher levels of both perceived stress and actual stressful events are associated with negative moods. Tyler and Cushway (1995) in their previous studies of nursing stress have found positive relationships between work stress and subjective perception of mental stress. Also, a study of occupational stress by Smith and Sulsky (1995) found out that, the use of avoidance coping as reported by employees was associated with an increase in mental stress and lower job satisfaction. From this observation, a proposition (H2) can be made of the work of nurses in Ghana:

H2: Nurses’ mental stress will have an effect on their job satisfaction.
2.7. The role of nurses’ workload on job satisfaction and mental stress

Kingma (2001) noted that, nurses are experiencing increasing levels of work related stress over time and increased levels of work related stress are associated with lower levels of satisfaction with reward packages and working conditions. Further, Kingma (2001) noted that current workforce shortages among nurses are likely to place greater demands (workload) upon nurses which might be expected to increase their mental stress and may reduce the quality of workplace relationships which has emerged as an important source of job satisfaction and contributes to organizational commitment.

An empirical study by Mathieu (1990) on nurses revealed that, job stress variables have negative impacts on job satisfaction. In the Mathieu’s meeting with nurses, some complained that, supervisors assigned too heavy workloads due to shortages of nurses. Findings of Price and Mueller (1986), also revealed that the net impact of work overload on job satisfaction and mental stress was statistically significant. Price and Mueller argued that whereas adequate workload is expected to result in high satisfaction and less mental stress, both work overload and work underload lead to low levels of satisfaction. According to Rourke (2008); Stenger, Cashman and Savageau (2008), workload characteristics such as number of patients seen per week or time spent on administrative work have been tried and found associated with job satisfaction and mental stress. From this observation, the following proposition (H3) can be made pertaining to the work of nurses in Ghana:

H3: Workload of nurses will affect the relationship between job satisfaction and mental stress
2.8. The moderating role of nurses’ time pressure on job satisfaction and mental stress

A Study conducted by Abaa, Atindanbila, Nyaledzigbor and Abebuoring, (2003) at Ridge and Pantang Hospitals in Ghana, noted that there is a weak negative correlation between work stress and job satisfaction of nurses. According to Bowers, Lauring, and Jacobson (2001), time was found to be an important element of work for all nurses. Time was spontaneously mentioned by each nurse (and referred to repeatedly throughout each interview) as the factor that most affected how she worked, how she went about her work and how her work affected resident outcomes. It was also found out by Bowers et al (2001) that the main source of job dissatisfaction was too little time. According to Green and Tsitsianis (2005), work intensification has been recognized as a major factor affecting job satisfaction.

Macro level analysis and case a study from Europe show that job satisfaction among nurses declines as work becomes intense (Green et al, 2005). In Canada, concerns have been raised about how nurses’ fast pace, mental stress, time pressures and intense work affect their commitment, job satisfaction and the overall quality of their work life (Baumann, O'Brien-Pallas, Armstrong-Stassen, Blythe, Bourbonnais, Cameron, Doran, Kerr, Hall, Zina, Butt & Ryan, 2001; Blythe, Baumann & Giovannetti, 2001). From this observation, the following proposition (H4) can be made pertaining to the work of nurses in Ghana:

H4: Time pressure on nurses will affect the relationship between job satisfaction and mental stress.
2.9. Conceptual Framework for the Study

The literature review and hypotheses on the relationships among study variables (workload, time pressure, mental stress and job satisfaction) give rise to a conceptual framework for the study in (Figure 2.1) as showed below:

Figure 2.1. Conceptual framework for the study.
Mental stress, time pressure and workload represent the independent variables while job satisfaction represents the dependent variable. The study argues that mental stress will be related to job satisfaction while workload and time pressure will be linked to mental stress and job satisfaction. Finally, the study proposes that workload and time pressure will moderate the relationship between mental stress and job satisfaction.

2.10. Research Frameworks

The relationship between occupational stress and job satisfaction was initially developed in establishing Job Demand Control (JDC) model by Karasek (1979). The fundamental idea behind the JDC model is that control buffers the impact of job demands on strain and can help enhance employees’ job satisfaction with opportunity to engage in challenging tasks and learn new skills (Karasek, 1979). According to the JDC model (Karasek, 1979), highly stressed and unhealthy jobs are those with low control and high demand conditions. Low control conditions include de-skilled labour and reduced decision making autonomy. Employees in this position are not granted the autonomy to make decisions regarding their work or work environment. They also do not have the opportunity to learn additional new skills on the job or solve problems. High demand conditions include inadequate time to meet job demands and excessive workload. Thus one basic premise of Karasek’s JDC model is that, employees who can themselves decide how to meet their job demands, do not experience job strain (job-related anxiety, health complaints, exhaustion and dissatisfaction). Accordingly, Karasek (1979) argues that it is the combination between high job demands and low control that leads to high levels of employee strain. The job demands-control-support model (Karasek & Theorell,
1990) adds social support to the model as a buffer against the negative impact of job demands on strain.

Job satisfaction has likewise been widely researched using Edwin A. Locke’s (1976) affect Theory of Job Satisfaction. The principle behind this theory is that, a person’s job satisfaction can depend on two factors: the expectation he has for the job and actual things that he is going to get in that job. The smaller the gap between these two the more chances he is satisfied with his work. For example, lower job satisfaction is recorded among those who had unfulfilled expectations regarding nursing work which suggests that some nurses retain an idealized view of nursing despite most initial nurse education including extended periods of clinical practice to prevent reality shock on entry into the workforce (Kingma, 2001). This theory also states that, a person prioritizes one aspect of work more than other aspects, and that certain aspects can affect how satisfied he is. For example, if an employee prioritizes social connections with his colleagues and this factor is met appropriately he may experience greater job satisfaction.

Lazarus and Folkman’s (1984) transactional theory also highlighted stress issues in that regard. According to Lazarus and Folkman (1984) stress is as a result of an imbalance between demands and resources or as occurring when pressure exceeds one’s perceived ability to cope. Stress management was developed and premised on the idea that stress is not a direct response to a stressor but rather one’s resources and ability to cope mediate the stress response and are amenable to change, thus allowing stress to be controllable. It is the interpretation of stress that focuses on the transaction between people and their external environment (Lazarus & Folkman, 1984).
One basic premise in the JDC, the Affect Theory of Job Satisfaction and the Lazarus and Folkman’s transaction theory is that the negative impact of job demands on employee well-being can be reduced if employees have the appropriate resources to deal with those demands (Bakker & Demerouti, 2007).
CHAPTER THREE

METHODOLOGY

This chapter presents the philosophical assumptions underpinning this research as well as outlining the steps and procedure followed in obtaining data for the study. The chapter also gave an introduction to the statistical techniques employed to the study. Accordingly, major issues considered under this heading are: research design, target and study population, sampling procedure and sample size, types and sources of data, research instrument, administration of research instrument, data handling and finally ethical consideration.

3.1 The Research Design

The research design that was adopted is the descriptive research design and cross-sectional survey. This is primarily informed by resource constraints. Quantitative technique was employed in gathering data on independent variables (workload, time pressure and mental stress) and dependent variable (job satisfaction) from nurses working in Ghanaian public hospitals. According to Fischler (2012), quantitative research allows the collection of quantifiable data from a large number of participants in an unbiased and objective manner. Close ended questionnaires was used to answer research questions.

3.2 Target and Study Population

The target population for the study consists of all nurses working in public hospitals in the Greater Accra Region of Ghana. However, accessible population was restricted to four (4) major public hospitals selected for the study in Accra, the nation’s capital. These hospitals, selected based on accessibility to the researcher are the La General Hospital, Korle-bu Teaching
Hospital, Ridge Hospital and 37 Military Hospital. The location of these hospitals in the Greater Accra Region (GAR) which serves as a hub of one of the highest populated regions, a good representation of the nursing population and the large number of patients they serve daily makes it appropriate for the study. Besides, the high population in the Greater Accra Region according to The Ghana Statistical Service (2010), the cosmopolitan city is an attractive location for many business activities, corporate institutions, health institutions and educational institutions which transcends into high health issues. A prominent business active population will mean that, health issues and risks will be associated with them and they will seek health care in these hospitals and this will result in high workload, mental stress and time pressure on nurses. Based on the information from the Human Resource Departments and websites of the hospitals the total number of nurses was 2,770. This population consists of both males and females from age 18 and above. This target population also consisted of nurses who work in different wards of the hospitals with different levels of education and also work in day and night shifts.

3.3 Sampling Procedure and Sample Size

Purposive sampling was used to select the four (4) hospitals and convenience sampling was used to select the respondents. Purposive sampling was used to select the four hospitals because, these hospitals have been considered as major public hospitals in Accra having the largest number of respondents and patients. Also, according to Holistic Assessment of the Health Sector Programme of Work Report (2013), Greater Accra Region has the highest number of nurses and patients in its hospitals. For example, in 2013, Greater Accra has nursing staff strength of 5,320 as against a population of 24, 533 compared to the other nine (9) regions in Ghana. Convenience sampling was used to select the respondents because of the shift nature of
nurses’ work. Nurses were chosen as a sample within which to study these relationships because, according to Tyler and Cushway (1995), nursing has been identified as a stressful occupation. Criteria for selection of sample size was the inclusion criteria:

a. Nurses working in the selected public hospitals in Accra.

b. Those who were present during period of data collection and were willing to participate.

Exclusion criteria was those nurses who will not be present during the data collection period and those who will not be willing to participate in the study. Out of the accessible population of 2,770 nurses, a sample size approximated to 350 was selected for the study. This was based on sample size determination by Miller and Brewer (2003) at 95% confidence level. The model is expressed as

\[ n = \frac{N}{1 + N(a)^2} \]

Where;

- \( n \) is desired sample size
- \( N \) is target population
- \( a \) is the level of statistical significance set

\[ N = 2,770, \quad a = 0.05 \]

\[ N = \frac{2,770}{1 + 2,770 (0.05^2)} \]

\[ = \frac{2,770}{1 + 2.770 (0.0025)} \]

\[ = \frac{2,770}{1 + 0.06925} \]

\[ = \frac{2,770}{1 + 6.925} \]

\[ = \frac{2,770}{7.925} \]

\[ = 349.52 \]
3.4 Types and Sources of Data

Data collection was done through primary and secondary sources. Primary data was obtained through questionnaire administration to solicit the views of nurses pertaining to workload, time pressure, mental stress and job satisfaction. Secondary data on the other hand comprised of information from human resource departments of the four public hospitals, websites of Ministry of health and the various hospitals in the study pertaining to staff strength.

3.5 Research Instrument

The instrument that was used in the study is close-ended structured/standardized questionnaire that consists of five parts / sections (Sections A-E). Closed ended questionnaire provides responses and make coding and analysis easy (Neuman, 2003).

Section A: Demographic data of participants (age, sexual orientation, educational level, years spent with hospital, number of working hours).

Section B: NASA TLX scale of workload consisting of six (6) items developed by Hart and Staveland (1988). This scale is an adapted version of the original. Certain sentences were rephrased to allow for easy understanding; for example “how hurled or rushed was the pace of the task?” was changed to “the pace of the job assigned to me is” This scale has six (6) dimensions consisting of mental demand, physical demand, temporal demand, performance, effort and frustration.

Section C: Subjective Workload Analysis Technique (SWAT) scale consisting of nine (9) items (for measuring mental stress) by Reid and Nygren (1988). The SWAT scale used in this study
was adopted. The dimensions and scales of SWAT were reproduced from Wickens et al. (2000). This scale has three (3) dimensions namely: time load, mental effort load and psychological stress load.

Section D: Effort Scale consisting of six (6) items by Peter et al; (1998) for measuring time pressure was adopted. This scale has only one dimension.

Section E: Schriesheidm and Tsui (1980) scale consisting of six (6) items for measuring job satisfaction. This scale is an adopted scale. The items were rated on a 5-point Likert scale (1= completely dissatisfied low, 5= completely satisfied).

The workload scale, the mental stress scale and the time pressure scale are measured using a five-point Likert scale (1=very low to 5=very high).

3.6 Administration of Research Instrument

Introductory letters were derived from the department of Organization and Human Resource Management (OHRM) of the University of Ghana Business School to the hospital administrators of the four hospitals in Accra. Hospital administrators then gave the researcher a cover letter (obtained from the Ghana Health Service, Greater Accra Regional Health Directorate) and attached to the introductory letter to be given to the heads (specifically the Deputy Director of Nursing Services (DDNS)) of the various wards of the hospitals. For 37 Military hospital, an ethics committee sat on the research proposal and an ethics clearance form was given after two months of giving them an introductory letter from the department. Copies
of questionnaires were then distributed to the nurses in these wards after introduction of the researcher by the DDNS to the respondents (nurses) in the various wards. Out of the 350 questionnaires administered, 310 of them were successfully retrieved but 10 of them were incompletely filled; sections for the mental stress and workload scales were incompletely filled so only 300 of them were deemed fit to form part of data analysis. The period for the data collection ranged from 10\textsuperscript{th} March to 20\textsuperscript{th} May 2015.

3.7 Data Handling

Data was analyzed quantitatively with the aid of IBM Statistical package for Social Sciences (SPSS) version 20 and on-line Sobel test calculator. Pearson’s product moment correlation and regression analysis were used for data analysis. Pearson’s product moment correlation and regression analysis were used to test the linear relationship and the association among the variables. (Workload and mental stress) for hypothesis 1: Nurses’ workload will have an effect on their mental stress and (Mental stress and job satisfaction) for hypothesis 2: Nurses mental stress will have an effect on their job satisfaction. Regression analysis was used to test how mental stress, workload and time pressure predicts job satisfaction and how workload also predicts mental stress. Two- step hierarchical multiple regression was used to test the moderating role of workload and time pressure on the interaction between mental stress and job satisfaction; that is for hypothesis 3: Workload of nurses will affect the relationship between job satisfaction and mental stress and hypothesis 4: Time pressure will affect the relationship between job satisfaction and mental stress. Furthermore, on-line Sobel test calculator was used to test the mediation effect of workload on the relationship between mental stress and job satisfaction. Regression analysis was first used to find the regression coefficients and standard
deviations between the independent variable (mental stress) and the mediating variable (workload) and also between the dependent variable (job satisfaction) and the mediating variable (workload). The values were then substituted into the Sobel test calculator to find if the mediating role of workload is significant. Finally, path analysis was carried out to identify how the conceptual framework used for the study has transformed.

3.8 Ethical Consideration

The ethical issues considered in this research were: ensuring informed consent of participants, confidentiality and anonymity, privacy and voluntary participation. First of all, informed consent was sought from the management of the four hospitals by serving them with introductory letters from University of Ghana Business School, Organization and Human Resource Department, informing them about the purpose and the nature of the study. Secondly, confidentiality and Anonymity was ensured in such a way that certain sensitive questions were excluded in the demography like the names of respondents, religious background and telephone numbers. Respondents were also assured that, their responses will be used solely for the purpose of this research. Also, respondents were also assured of their privacy by the researcher giving the questionnaire to each respondent and sitting with them as they answered and were taken back there and then by the researcher. Finally, voluntary participation was ensured whereby respondents were informed that it was voluntary on their part to withdraw if they feel not to participate any more.
CHAPTER FOUR

ANALYSIS AND DISCUSSIONS

This chapter presents analysis and discussion of findings. SPSS and Sobel test calculator were the tools used in analyzing the data. The dispositions of this chapter includes demographic characteristics of respondents, statistical analysis of psychometric tools, analysis of measured variables, discussion of findings and path analysis of the conceptual framework. Three hundred (300) duly completed questionnaires representing 85.71% of a total three hundred and fifty (350) administered for data collection were used in the data analysis. Even though 310 (88.57%) of the total number of administered questionnaires were retrieved, 10 were not usable because the sections for the mental stress and workload scales were incompletely filled therefore 300 (85.71%) were deemed duly completed to form part of data analysis.

4.1 Demographic Characteristics of Respondents

The demographic characteristics of respondents which include gender, age, educational level, number of years spent in the nursing profession and number of working hours spent at work are analyzed in the sections that follow.

4.1.1 Gender Distribution of respondents

The gender of the respondents in this study has been analyzed and results presented in table 4.1 and figure 4.1 below
Table 4.1: Gender distribution of respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>49</td>
<td>16.3</td>
</tr>
<tr>
<td>Female</td>
<td>251</td>
<td>83.7</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 4.1 Gender distribution of respondents

Of 300 respondents, 251 (83.7%) were females and 49 (16.3%) of respondents were males. Female nurses were therefore, more than their male counterparts.

4.1.2 Age distribution of respondents

The age of respondents has been analyzed and the results displayed in the table 4.2 and Figure 4.2 below.
Table 4.2: Age distribution of respondents

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24 years</td>
<td>53</td>
<td>17.7</td>
</tr>
<tr>
<td>25-34 years</td>
<td>169</td>
<td>56.3</td>
</tr>
<tr>
<td>35-44 years</td>
<td>39</td>
<td>13.0</td>
</tr>
<tr>
<td>45-55 years</td>
<td>20</td>
<td>6.7</td>
</tr>
<tr>
<td>over 55 years</td>
<td>19</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 4.2: Age distribution of respondents

Looking at their ages, the 18-24 age group was 53 (17.7%) the 25-34 age group was 169 (56.3%) the 35-44 age group constituted 39 (13.0%) the 45-55 age group also formed 20 (6.7%) and then the over 55 years group was made up of 19 (6.3%) of the respondents, indicating that nurses were largely within the youthful age group.
4.1.3 Distribution of educational level of respondents

The level of education of the respondents has been analyzed and the results displayed in table 4.3 and Figure 4.3 below;

Table 4.3: Distribution of educational level of respondents

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WASSCE</td>
<td>24</td>
<td>8.0</td>
</tr>
<tr>
<td>Diploma</td>
<td>122</td>
<td>40.7</td>
</tr>
<tr>
<td>First Degree</td>
<td>88</td>
<td>29.3</td>
</tr>
<tr>
<td>Professional</td>
<td>58</td>
<td>19.3</td>
</tr>
<tr>
<td>Post Graduate Degree</td>
<td>8</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 4.3: Distribution of educational level of respondents
When it comes to nurses educational level, those who completed WASSCE constituted 24 (8.0%), those holding diploma in nursing also formed 122 (40.7%) those holding first degree formed 88 (29.3%) those who hold professional certificate in nursing also constituted 58 (19.3%) and finally, those holding post graduate degree in nursing also were made up of 8 (2.7%) respectively. This indicates that, most of the nurses hold a diploma in nursing.

4.1.4 Distribution of number of years spent in the nursing profession

The number of years spent by respondents in the nursing profession has been analyzed and the results presented in table 4.4 and figure 4.4 below

Table 4.4: Distribution of number of years spent in the nursing profession by respondents

<table>
<thead>
<tr>
<th>Number of years spent in the nursing profession</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than a year</td>
<td>31</td>
<td>10.3</td>
</tr>
<tr>
<td>1-3 years</td>
<td>83</td>
<td>27.3</td>
</tr>
<tr>
<td>4-6 years</td>
<td>79</td>
<td>26.3</td>
</tr>
<tr>
<td>7-9 years</td>
<td>38</td>
<td>12.7</td>
</tr>
<tr>
<td>10 years and above</td>
<td>69</td>
<td>23.0</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
</tr>
</tbody>
</table>
When it comes to the number of years spent in the nursing profession, those who are practicing for less than a year formed 31 (10.3%), those who fell between 1-3 years of practice constituted 83 (27.3%), those who have been practicing from 4-6 years formed 79 (26.3%), those who fell within the year range of 7-9 years formed 38 (12.7%) and finally, nurses who have been practicing from 10 years and above constituted 69 (23.0%). This indicates that, most of the nurses have not been practicing for many years.

**4.1.5 Distribution of the number of working hours by respondents**

The number of working hours spent by each respondent has been analyzed and the results displayed in table 4.5 and Figure 4.5 below.
Table 4.5: Distribution of the number of working hours by respondents

<table>
<thead>
<tr>
<th>Number of working hours in the current profession</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 5 hours</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>5-7 hours</td>
<td>82</td>
<td>27.3</td>
</tr>
<tr>
<td>8-10 hours</td>
<td>180</td>
<td>60.0</td>
</tr>
<tr>
<td>10-12 hours</td>
<td>27</td>
<td>9.0</td>
</tr>
<tr>
<td>over 12 hours</td>
<td>9</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 4.5: Distribution of the number of working hours by respondents

Regarding nurses’ number of working hours in current profession, majority of the nurses work between 8-10 hours 180 (60.0%), those who work 5-7 hours formed 82 (27.3%) also, those who work between 10-12 hours constitute 27 (9.0%) finally, those who work over 12 hours and less than 5 hours constitute 9 (3.0%) and 2 (0.7%) respectively. This indicates that, on the average, majority of nurses spend between 8 to 10 hours at work when they are on duty.
4.2 Statistical Analysis of Psychometric Tool

The psychometric tool that was used in this study has been tested for the following: normality, validity and reliability. These tests have been explained in the sections below.

4.2.1 Analysis of Normality

Regression assumes there should be normal distributions of variables (Hair, Black, Babin & Anderson, 2010). To ascertain this assumption, the skewness, kurtosis and Kolmogorov Smirnov tests of the variables reveal that no variable departed significantly from normal distribution. (See appendix D). Moreover, Histograms and Q-Q plots (See appendix D) shows normal distribution of the data.

4.2.2 Analysis of Validity

Validity refers to how well a test measures what it is meant to measure (Cronbach, 1971). Construct validity is the extent to which an instrument measures the construct it is intended to measure (Cronbach & Meehl, 1955). From the factor analysis conducted in this section, all the scales used in measuring the variables can be said to be valid because they all constitute what they are supposed to measure.

4.2.3 Analysis of Reliability

Reliability is where data is sufficiently complete and error free to be convincing for its purpose and context (Cronbach, 1971). Descriptive statistics (means and standard deviations), correlations and Cronbach Alphas are shown in the table below: Cronbach alphas vary from 0.64 to 0.82 indicating that the measures used in this study are fairly reliable (George & Mallery, 2003).
Table 4.6: Estimates of Means, Standard Deviations, Cronbach Alphas and Correlation of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (1)</td>
<td>1.84</td>
<td>0.37</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (2)</td>
<td>2.28</td>
<td>1.04</td>
<td>0.11</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level (3)</td>
<td>2.68</td>
<td>0.96</td>
<td>0.07</td>
<td>0.42**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of years spent in the nursing profession (4)</td>
<td>3.10</td>
<td>1.32</td>
<td>0.10</td>
<td>0.77**</td>
<td>0.49**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of working hours spent by nurses (5)</td>
<td>2.86</td>
<td>0.70</td>
<td>-0.05</td>
<td>0.36**</td>
<td>0.28**</td>
<td>0.41**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Workload (6)</td>
<td>21.16</td>
<td>2.70</td>
<td>-0.08</td>
<td>0.17**</td>
<td>0.18**</td>
<td>0.16**</td>
<td>0.14*</td>
<td>(0.66)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Stress (7)</td>
<td>31.62</td>
<td>4.95</td>
<td>0.00</td>
<td>0.08</td>
<td>0.02</td>
<td>0.04</td>
<td>0.01</td>
<td>0.14*</td>
<td>(0.64)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Time Pressure (8)</td>
<td>20.53</td>
<td>3.49</td>
<td>-0.06</td>
<td>0.19**</td>
<td>0.22**</td>
<td>0.17*</td>
<td>0.16**</td>
<td>0.54**</td>
<td>0.17**</td>
<td>(0.82)</td>
<td>-</td>
</tr>
<tr>
<td>Job Satisfaction (9)</td>
<td>17.19</td>
<td>3.24</td>
<td>-0.01</td>
<td>-0.12</td>
<td>0.06</td>
<td>-0.04</td>
<td>-0.05</td>
<td>-0.10</td>
<td>-0.19**</td>
<td>-0.23**</td>
<td>(0.70)</td>
</tr>
</tbody>
</table>

**p<0.01, *p<0.05 (Reliability estimates (Cronbach Alphas) in parentheses; n=300**

For the purpose of this study, demographic variables are the control variables.
4.3 Factor Analysis of Workload Factors

The first objective of the study was to find out what factors constitute workload of nurses. Hence, the question one for the study was what factors constitute workload of nurses? As stated in chapter one, sections 1.4 and 1.5 respectively. In order to find an answer to this question, the 6 items of workload variables were subjected to factor analysis to identify the factors that constitute workload among Ghanaian nurses. Inspection of the correlation matrix revealed the presence of many coefficients of 3.0 and above. KMO and Bartlett’s test results are shown in table 4.7 below.

Table 4.7: Results from KMO and Bartlett’s test for workload

<table>
<thead>
<tr>
<th>Kaiser-Meyer- Olkin Measure of Sampling Adequacy.</th>
<th>0.755</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Chi- Square</td>
<td>256.624</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>df</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

The Kaiser Meyer- Olkin value was 0.76, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Bartlett’s test of Sphericity (Bartlett, 1954) reached a statistical significance, that is 0.000 (p< 0.05) therefore supporting the factorability of the correlation matrix. Table 4.8 shows the component (C) matrix for workload variables conducted.
Table 4.8: Component matrix for workload variables

<table>
<thead>
<tr>
<th>Workload Factors</th>
<th>Component Regression Values (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C1</td>
</tr>
<tr>
<td>The mental demand for the job assigned to me is</td>
<td>0.647</td>
</tr>
<tr>
<td>The physical demand for the job assigned to me is</td>
<td>0.687</td>
</tr>
<tr>
<td>The pace of the job assigned to me is</td>
<td>0.704</td>
</tr>
<tr>
<td>The success I achieve in accomplishing what I am assigned to do is</td>
<td>0.686</td>
</tr>
<tr>
<td>The effort I have to put in to accomplish my current level of performance is</td>
<td>0.852</td>
</tr>
<tr>
<td>The frustration I go through in performing my duty is</td>
<td>0.624</td>
</tr>
</tbody>
</table>

Method: Principal Component Analysis
Rotation method: Varimax with Kaiser Normalization
Rotation converged in 3 iterations

From Table 4.8 above, all the factors of workload loaded on the component matrix. The component matrix gave two components. All the factors are reflective of workload. Five of loadings are high for component C1 and are manifestations of demand of work:

i. The mental demand for the job assigned to me is \((r=647)\)

ii. The physical demand for the job assigned to me is \((r=687)\)

iii. The pace of the job assigned to me is \((r=0.704)\)

iv. The success I achieve in accomplishing what I am assigned to do is \((r=686)\)

v. The frustration I go through in performing my duty is \((r=0.624)\)

The remaining sixth one in this component (C1) is low:

vi. The frustration I go through in performing my duty is \((r=0.140)\).
In component C2, only one of the loadings is high and this is a manifestation of an effort load.

i. The effort I have to put in to accomplish my current level of performance is (r=0.852)

The rest of the five loadings in this component are low

ii. The mental demand for the job assigned to me is (r=0.387)

iii. The physical demand for the job assigned to me is (r=0.264)

iv. The pace of the job assigned to me is (r=0.054)

v. The success I achieve in accomplishing what I am assigned to do is (r=0.002)

vi. The frustration I go through in performing my duty is (r=-0.449)

Furthermore, correlation is ascertained among the workload components (C1 and C2) to observe how these factors are related among themselves. The result is presented in table 4.9 below;
Table 4.9: Results of correlation estimates for the relationship between demand of work and effort load

<table>
<thead>
<tr>
<th>Demand of work (C 1)</th>
<th>Effort load (C 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The mental demand for the job assigned to me is</td>
<td>0.310</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td>The physical demand for the job assigned to me is</td>
<td>0.315</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td>The pace of the job assigned to me is</td>
<td>0.376</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td>The success I achieve in accomplishing what I am assigned to do is</td>
<td>0.130</td>
</tr>
<tr>
<td></td>
<td>0.012*</td>
</tr>
<tr>
<td>The frustration I go through in performing my duty is</td>
<td>0.269</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
</tbody>
</table>

*P<0.05

**P<0.01

From the correlation table above, all the items in component one (C1) are correlated with items in component 2 (C2) at p<0.05 and p<0.01.

In answering question one, “what factors constitute workload of nurses?” the identified factors of workload are demand of work and effort load. These results from the factor analysis performed indicated that all the variables under Karasek’s (1979) Job-Demand Control model which is demand of work and effort load prevailed among Ghanaian nurses in these four hospitals. This includes highly stressed and unhealthy jobs with low control and high demand conditions. Employees (nurses) in this position should be given the autonomy to take decisions regarding their work or environment. Through this, they will also have the opportunity to learn new skills on the job or solve problems. Karasek (1979) further states that, social support should be added to employees’ work as a buffer against the negative impact of job demand.
This finding attests to literature; according to Hart and Staveland (1988), workload is the perceived relationship between the amount of mental processing capability or resources and the amount required by the task. Thus if workers perceive workload to be demanding, they also think about whether they have the capacity to accomplish such task; if they do not, they tend to experience excessive workload which they think does not match the effort they put in that work. According to Hart and Staveland (1988), if people could complete all the requirements imposed on them quickly, accurately, reliably and with little effort using existing resources, the concept of workload will have had minimal practical importance.

However, they often cannot; in some cases task demands simply exceeds operators’ capabilities while in others, apparently human limitations reflect poorly designed controls or displays, inappropriate or inadequate automation, or insufficient training (Hart & Staveland, 1988). Hart and Staveland (1988) further noted that, such decrements in the performance of an individual operator, which may occur if the workload is either too high or too low, can result in the reduction of overall system effectiveness. In a nutshell, if nurses put in a lot of effort but still are not able to accomplish their assigned tasks within a certain timeframe, they tend to experience excessive work demand and effort load.

### 4.4 Factor Analysis of Mental Stress Factors

The second objective of the study was to find out what factors constitute nurses’ mental stress as highlighted in Chapter 1, section 1.4. Hence, the second question of the study was what factors constitute nurses’ mental stress? (See chapter 1, section 1.5). In order to find an answer to this question, 9 items of mental stress variables were subjected to factor analysis to identify the factors that constitute mental stress among Ghanaian nurses. Inspection of the correlation matrix revealed the presence of many coefficients of 3.0 and above. The KMO and Bartlett’s test results are shown in table 4.10 below.
Table 4.10: Results from KMO and Bartlett’s test for mental stress

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>0.698</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Chi-Square</td>
<td>304.895</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>36</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Kaiser Meyer-Olkin value was 0.698, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Bartlett’s test of Sphericity (Bartlett, 1954) reached a statistical significance, that is 0.000 ($p < 0.05$) therefore supporting the factorability of the correlation matrix. Table 4.11 shows component (C) matrix for mental stress variables conducted.

Table 4.11: Component matrix for mental stress variables

<table>
<thead>
<tr>
<th>Mental Stress factors</th>
<th>Component Regression Values (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C1</td>
</tr>
<tr>
<td>I often have spare time</td>
<td>0.183</td>
</tr>
<tr>
<td>I occasionally have spare time</td>
<td>-0.105</td>
</tr>
<tr>
<td>I almost never have spare time</td>
<td>0.070</td>
</tr>
<tr>
<td>My work requires little conscious effort or concentration</td>
<td>0.227</td>
</tr>
<tr>
<td>My work requires moderate conscious effort or concentration</td>
<td>0.179</td>
</tr>
<tr>
<td>My work requires extensive mental effort or concentration</td>
<td>0.193</td>
</tr>
<tr>
<td>I get a little confused, feel at risk, frustrated and anxious</td>
<td>0.769</td>
</tr>
<tr>
<td>I am moderately stressed due to confusion, anxiety and frust</td>
<td>0.670</td>
</tr>
<tr>
<td>I get highly stressed due to confusion, frustration or anxiety</td>
<td>0.727</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis
Rotation method: Varimax and Kaiser Normalization
a. Rotation converged in 8 iterations
The rotated component matrix gave four components. All the mental stress factors loaded on the component matrix and they are reflection of mental stress. In answering question two, “what factors constitute nurses’ mental stress?” the identified factors for mental stress are psychological stress load, time load, mental load and effort load.

The first component (C1) has three loadings which were high; these factors are manifestations of Psychological stress load.

i. I get a little confused, feel at risk, frustrated and anxious \( (r=0.769) \)

ii. I am moderately stressed due to confusion, anxiety and frustration \( (r=0.670) \)

iii. I get highly stressed due to confusion, frustration or anxiety \( (r=0.727) \)

The rest six of the loadings in this component were low

iv. I often have spare time \( (r=0.183) \)

v. I occasionally have spare time \( (r=-0.105) \)

vi. I almost never have spare time \( (r=0.070) \)

vii. My work requires little conscious effort or concentration \( (r=0.227) \)

viii. My work requires moderate conscious effort or concentration \( (r=0.179) \)

ix. My work requires extensive mental effort or concentration \( (r=0.193) \)

The second component (C2) has only one component that was high and this is an expression of time load.

i. I often have spare time \( (r=0.844) \)

The rest eight of the loadings in this component were low

ii. I occasionally have spare time \( (r=0.589) \)

iii. I almost never have spare time \( (r=0.224) \)
iv. My work requires little conscious effort or concentration (r=0.477)

v. My work requires moderate conscious effort or concentration (r=-0.100)

vi. My work requires extensive mental effort or concentration (r=-0.157)

vii. I get a little confused, feel at risk, frustrated and anxious (r=0.077)

viii. I am moderately stressed due to confusion, anxiety and frustration (r=0.138)

ix. I get highly stressed due to confusion, frustration or anxiety (r=0.019)

The third component (C3) has only two loadings that were high and this is a manifestation of mental load

i. I almost never have spare time (r=0.660)

ii. My work requires extensive mental effort or concentration (r=0.742)

The rest seven of the loadings in this component are low

iii. I often have spare time (r=0.006)

iv. I occasionally have spare time (r=0.354)

v. My work requires little conscious effort or concentration (r=-0.218)

vi. My work requires moderate conscious effort or concentration (r=0.115)

vii. I get a little confused, feel at risk, frustrated and anxious (r=-0.137)

viii. I am moderately stressed due to confusion, anxiety and frustration (r=0.197)

ix. I get highly stressed due to confusion, frustration or anxiety (r=-0.351)

The fourth component (C4) also has only one loading that was high and this is a manifestation of effort load.

i. My work requires moderate conscious effort or concentration (r=0.850)

The rest of the factor loadings in the component were low

ii. I often have spare (r=-0.211)

iii. I occasionally have spare time (r=0.418)
iv. I almost never have spare time (r=0.145)

v. My work requires little conscious effort or concentration (r=0.474)

vi. My work requires extensive mental effort or concentration (r=-0.059)

vii. I get a little confused, feel at risk, frustrated and anxious (r=0.252)

viii. I am moderately stressed due to confusion, anxiety and frustration (r=0.162)

ix. I get highly stressed due to confusion, frustration or anxiety (r=-0.118)

From the rotated component matrix, it can be noted that “I occasionally have spare time” and “My work requires little conscious effort or concentration” does not contribute to mental stress at all because they have low loadings which cannot be accepted as significant.

To further explore the compatibility of the mental stress variables among each other, a correlation analysis has further been carried out to substantiate how these variables are correlated in the tables below.

Table 4.12: Results of correlation estimates for the relationship between psychological stress load and time load

<table>
<thead>
<tr>
<th>Psychological stress load (C1)</th>
<th>Time load (C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I often have spare time</td>
</tr>
<tr>
<td>I get a little confused, feel at risk, frustrated and anxious</td>
<td>0.311</td>
</tr>
<tr>
<td></td>
<td>0.011*</td>
</tr>
<tr>
<td>I am moderately stressed due to confusion, anxiety and frustration</td>
<td>0.170</td>
</tr>
<tr>
<td></td>
<td>0.002**</td>
</tr>
<tr>
<td>I get highly stressed due to confusion, frustration or anxiety</td>
<td>0.135</td>
</tr>
<tr>
<td></td>
<td>0.010*</td>
</tr>
</tbody>
</table>

*p<0.05  
*p<0.01
From table 4.12 it can be observed that, I get a little confused, feel at risk, frustrated and anxious in C1 is correlated with I often have spare time in C2 with a P-value of $P<0.05$. I am moderately stressed due to confusion, anxiety and frustration in C1 is correlated with I often have spare time in C2 with a P-value of $P<0.01$. I get highly stressed due to confusion, frustration or anxiety C1 is also highly correlated with I often have spare time in C2 with a P-value of $P<0.05$.

Table 4.13: Results of correlation estimates for the relationship between psychological stress load and mental load

<table>
<thead>
<tr>
<th>Psychological stress load (C1)</th>
<th>Mental load (C3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I get a little confused, feel at risk, frustrated and anxious</td>
<td>I almost never have spare time 0.111</td>
</tr>
<tr>
<td></td>
<td>My work requires extensive mental effort or concentration 0.051</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td>I am moderately stressed due to confusion, anxiety and frustration</td>
<td>0.194</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td>I get highly stressed due to confusion, frustration or anxiety</td>
<td>0.214</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
</tr>
</tbody>
</table>

* $P<0.05$  
** $P<0.01$

From the above table, it can be observed that matching items in C1 and C3, all the items in C1 are correlated at $p<0.01$ and $p<0.05$ with items in C3 except one item in C1 “I get a little confused, feel at risk, frustrated and anxious” which is not correlated (0.188>0.05) with an item in C3 “My work requires extensive mental effort or concentration”
Table 4.14: Results of correlation estimates for the relationship between mental load and time load

<table>
<thead>
<tr>
<th>Mental load (C3)</th>
<th>Time load (C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I often have spare time</td>
<td></td>
</tr>
<tr>
<td>I almost never have spare time</td>
<td>0.031</td>
</tr>
<tr>
<td>My work requires extensive mental effort or concentration</td>
<td>-0.020</td>
</tr>
</tbody>
</table>

*P<0.05

**P<0.01

From the above, the correlation matrix for C2 and C3 shows that, the item in C2 correlated (p<0.01) with only one item in C3 but did not correlate with the second item (0.365>0.05).

Table 4.15: Results of correlation estimates for the relationship between psychological stress load and effort load

<table>
<thead>
<tr>
<th>Psychological stress load (C1)</th>
<th>Effort load (C4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>My work requires moderate conscious effort or concentration</td>
<td></td>
</tr>
<tr>
<td>I get a little confused, feel at risk, frustrated and anxious</td>
<td>0.249</td>
</tr>
<tr>
<td>I am moderately stressed due to confusion, anxiety and frustration</td>
<td>0.231</td>
</tr>
<tr>
<td>I get highly stressed due to confusion, frustration or anxiety</td>
<td>0.120</td>
</tr>
</tbody>
</table>

*P<0.05, **P<0.01

Comparing C1 and C4, it could be realized from table 4.15 that the items in C1 are correlated (p<0.01, p<0.05) with the item in C4.
Table 4.16: Results of correlation estimates for the relationship between mental load and effort load

<table>
<thead>
<tr>
<th>Mental load (C3)</th>
<th>Effort load (C4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I almost never have spare time</td>
<td>0.144</td>
</tr>
<tr>
<td>My work requires extensive mental effort or concentration</td>
<td>0.121</td>
</tr>
</tbody>
</table>

*P<0.05

**P<0.01

From table 4.16, comparing C3 to C4, it can be noted that, none of the items in C3 is correlated (0.121 >0.05 and 1.122>0.05) with the items in C4 so these items are not related in any way.

Table 4.17: Results of correlation estimates for the relationship between effort load and time load

<table>
<thead>
<tr>
<th>Effort load (C4)</th>
<th>Time load (C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>My work requires moderate conscious effort or concentration</td>
<td>0.033 0.286</td>
</tr>
</tbody>
</table>

*P<0.05, **P<0.01
From correlation table, 4.17 it can be noted that, the item in C2 is not correlated with the item in component C4 so there is no relationship between these components.

These results from the factor analysis performed indicated that all four variables predicted what constitute mental stress among nurses. This is consistent with the work of Redding and Robinson (2009) which indicated that, most acute inpatient care requires nurses to constantly shift their attention to make clinical decisions and manage care for groups of patients in a continually changing environment. Nurses must integrate complex thinking processes with psychomotor and affective skills to deliver appropriate interventions (Redding et al, 2009). Roche (2002) also shared the same view that, nurses have varieties of duties to perform at the same time, nurses must juggle important patient education, family concerns, new admissions, discharges, and numerous other activities for other patients and this requires complex thinking and concentration. Tucker (2004) therefore suggested that, hospital administration should make sure nurses are exempt from interruptions and disturbances which compete for their attention and concentration for effective care delivery.

Nevertheless, Reid and Nygren (1988) in their SWAT scale which was adopted has three (3) factors under it namely: time load, mental effort load and psychological stress load. But the findings from this study identified four (4) factors under mental stress. This reason may be due to changes in context; Reid and Nygren (1998) tested this instrument in developed country but my study was carried out in a developing country (Ghana) where more than three aspects of mental stress might be an issue, Secondly, Reid and Nygren (1998) also tested this instrument on a different target group thus aircraft cockpit and other crew station environments and not on nurses. This could account for the difference in findings on the factors that comprise mental stress among nurses. Mental stress has been found to be a
prevailing issue among Ghanaian nurses; the Ghana Health sector (2007) for instance indicated that, the Korle- Bu Teaching Hospital (KBTH) faces on daily basis, challenges such as overcrowding and congestion of departments and wards by patient and this results in a high mental stress for health workers especially nurses. Thus Ghanaian nurses have to juggle issues of overcrowding of patients (low nurse-patient ratio) thus the huge number of patients they attend to daily with convoluted thinking of administering medications, injections, writing report on every patient among others.

4.5 Factor Analysis of Time Pressure Factors

The third objective of the study was to find out what factors constitute nurses’ time pressure. Hence, the question for the study was what factors constitute nurses’ time pressure? As stated in chapter one, sections 1.4 and 1.5 respectively. In order to find an answer to this question, 6 items of time pressure variables were subjected to factor analysis to identify the factors that constitute time pressure among Ghanaian nurses. Inspection of the correlation matrix revealed the presence of many coefficients of 3.0 and above. The KMO and Bartlett’s test of Sphericity is shown in table 4.18 below

Table 4.18: Results from KMO and Bartlett’s test for time Pressure variables

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer- Olkin Measure of Sampling Adequacy.</td>
<td>0.863</td>
</tr>
<tr>
<td>Approx. Chi- Square</td>
<td>542.391</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>df</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Kaiser Meyer-Olkin value was 0.86, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Bartlett’s test of Sphericity (Bartlett, 1954) reached a statistical significance, that is 0.000 ($p < 0.05$) therefore supporting the factorability of the correlation matrix. Table 4.19 shows the component (C) matrix for time pressure variables conducted.

Table 4.19. Component matrix for time pressure variables

<table>
<thead>
<tr>
<th>Time Pressure factors</th>
<th>Component Regression Values (r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C1</td>
</tr>
<tr>
<td>The constant time pressure I encounter due to heavy workload at work is</td>
<td>0.733</td>
</tr>
<tr>
<td>The many interruptions I experience in my work is</td>
<td>0.736</td>
</tr>
<tr>
<td>The level of responsibility I have in the work assigned to me is</td>
<td>0.691</td>
</tr>
<tr>
<td>The pressure I encounter in working overtime is</td>
<td>0.658</td>
</tr>
<tr>
<td>Over the past few years, my job has become</td>
<td>0.768</td>
</tr>
<tr>
<td>The overwhelming time pressure I encounter at work is</td>
<td>0.791</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis

a. 1 components extracted.

The component matrix gave only one component. All the factors of time pressure loaded on the component (C) matrix and these factors are reflective of time pressure. All the factor loadings of time pressure are high on component C1 and this is a manifestation of high time pressure.
i. The constant time pressure I encounter due to heavy workload at work is (r=0.733)

ii. The many interruptions I experience in my work is (r=0.736)

iii. The level of responsibility I have in the work assigned to me is (r=0.691)

iv. The pressure I encounter in working overtime is (r=0.658)

v. Over the past few years, my job has become (r=0.768)

vi. The overwhelming time pressure I encounter at work is (r=0.791)

In answering question three, “what factors constitute nurses’ time pressure?” the identified factor for time pressure is high time pressure. This attest to the fact that the finding gave us one strong factor that constitute time pressure which is high time pressure among nurses in Ghana. This finding is in line with the work of Beevis (1999). Beevis (1999) pointed out that people experience high time pressure when 85% of the available time are required to execute the tasks. In this case, performance is often impaired in that some tasks are not (well) executed. Four out of five nurses often experience time pressure at work (Demerouti, Bakker, Nachreiner & Schaufeli, 2000) Demerouti et al (2000) again pointed out that, a common and understandable reason for time pressure in nursing is an insufficient nurse-to-patient ratio in many institutions. From literature reviewed, time pressure has been observed as an important strain factor in nursing in general (Demerouti, Bakker, Nachreiner & Schaufeli, 2000).

It can be pointed out that, from the factors that constitute workload, nurses with excessive workload compete for time. When workload is heavy, nurses need a lot of time to accomplish so many duties but it was found out that they lack adequate time and this
transcends into high time pressure which competes for nurses’ attention resulting in mental stress and subsequently increases their workload.

4.6 Factor Analysis of Job Satisfaction Factors

The fourth objective of the study was to find out what factors constitute nurses’ job satisfaction. Hence, the question for the study was what factors constitute nurses’ job satisfaction? (See chapter 1, sections 1.4 and 1.5). To answer this question, 6 items of job satisfaction variables were subjected to factor analysis to identify the factors that constitute job satisfaction among Ghanaian nurses. Inspection of the correlation matrix revealed the presence of many coefficients of 3.0 and above. The table below shows the KMO and Bartlett’s test result.

Table 4.20: Results from KMO and Bartlett’s test for job satisfaction

<table>
<thead>
<tr>
<th>Kaiser-Meyer- Olkin Measure of Sampling Adequacy.</th>
<th>0.703</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Chi- Square</td>
<td>333.877</td>
</tr>
<tr>
<td>Bartlett’s Test of Sphericity</td>
<td>df 15</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Kaiser Meyer- Olkin value was 0.70, exceeding the recommended value of 0.6 (Kaiser, 1970, 1974) and Bartlett’s test of Sphericity (Bartlett, 1954) reached a statistical significance, that is 0.000 (p< 0.05) therefore supporting the factorability of the correlation matrix. Table 4.21 shows component (C) matrix for job satisfaction variables conducted.
Table 4.21: Component matrix for job satisfaction variables

<table>
<thead>
<tr>
<th>Job satisfaction factors</th>
<th>Component 1 (C1)</th>
<th>Component 2 (C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How satisfied are you with the nature of the work you perform?</td>
<td>0.161</td>
<td>0.678</td>
</tr>
<tr>
<td>How satisfied are you with the person who supervises you?</td>
<td>0.107</td>
<td>0.828</td>
</tr>
<tr>
<td>How satisfied are you with the relationship with your co-workers?</td>
<td>0.091</td>
<td>0.752</td>
</tr>
<tr>
<td>How satisfied are you with the pay you receive for your job?</td>
<td>0.726</td>
<td>0.117</td>
</tr>
<tr>
<td>How satisfied are you with the opportunity which exist in this organization for advancement and promotion?</td>
<td>0.839</td>
<td>0.017</td>
</tr>
<tr>
<td>Considering everything, how satisfied are you with your current job situation?</td>
<td>0.753</td>
<td>0.287</td>
</tr>
</tbody>
</table>

Extraction method: Principal Component Analysis
Rotation method: Varimax and Kaiser Normalization
a. Rotation converged in 3 iterations

All the factors of job satisfaction are loaded on the component matrix and these factors are reflective of job satisfaction. The rotated component matrix gave two components. The first component C1 has three significant loadings which were high and this is an expression of pay, organizational policies and professional status.

i. How satisfied are you with the pay you receive for your job? (r= 0.726)

ii. How satisfied are you with the opportunity which exists in this organization for advancement and promotion? (r=0.839)

iii. Considering everything, how satisfied are you with your current job situation? (r=0.753)
The rest three of the factor loadings of this component (C1) are low

iv. How satisfied are you with the nature of the work you perform? \( (r=0.161) \)

v. How satisfied are you with the person who supervises you? \( (r=0.107) \)

vi. How satisfied are you with the relationship with your co-workers? \( (r=0.091) \)

The second component C2 also had three significant loadings which were also high and this is a manifestation of task requirement, interaction and autonomy.

i. How satisfied are you with the nature of the work you perform? \( (r=0.678) \)

ii. How satisfied are you with the person who supervises you? \( (r=0.828) \)

iii. How satisfied are you with the relationship with your co-workers? \( (r=0.752) \)

The rest three of the factor loadings in this component (C2) are low

iv. How satisfied are you with the pay you receive for your job? \( (r=0.117) \)

v. How satisfied are you with the opportunity which exist in this organization for advancement and promotion? \( (r=0.017) \)

vi. Considering everything, how satisfied are you with your current job situation? \( (r=0.287) \)

To answer question four, “what factors constitute nurses’ job satisfaction?” the identified factors for job satisfaction are pay, organizational policies and professional status and task requirement, interaction and autonomy. These results from the factor analysis performed indicated that all two variables predicted what constitute job satisfaction among nurses. This is in line with the work of Stamps and Piedmonte (1986) who conceptualized job satisfaction as comprising six components namely: Pay, autonomy, task requirements, organizational policies, interaction and professional status. These six components are classified into two in which C1 consist of pay, organizational policies and professional status; whereas C2 consist
of task requirement, interaction and autonomy. Stamps et al (1986) further opined that, job satisfaction is derived from the congruence of workers’ expectations about these six components of satisfaction and the degree to which the job fulfills those expectations (rewards). In the opposite, discrepancy between expectations and fulfillment leads to lower job satisfaction.

Since the factor component matrix identified two components, correlation analysis has been ascertained to determine whether these variables under job satisfaction are correlated among themselves. The correlation matrix results are shown in table 4.22 below

Table 4.22: Results for correlation estimates for the relationship between pay, organizational policies, professional status and task requirement, interaction and autonomy

<table>
<thead>
<tr>
<th>Pay, organizational policies and professional status (C1)</th>
<th>Task requirement, interaction and autonomy (C2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How satisfied are you with the pay you receive for your job?</td>
<td>How satisfied are you with the nature of the work you perform?</td>
</tr>
<tr>
<td>How satisfied are you with the opportunity which exist in this organization for advancement and promotion?</td>
<td>0.241</td>
</tr>
<tr>
<td>Considering everything, how satisfied are you with your current job situation?</td>
<td>0.100</td>
</tr>
<tr>
<td>Considering everything, how satisfied are you with your current job situation?</td>
<td>0.222</td>
</tr>
</tbody>
</table>

*P<0.05, **P<0.01
From Table 4.22 above, all the items in C1 are correlated with items in C2 with a P-value of \( P<0.01 \) and P-value of \( P<0.05 \) respectively. Therefore all the items are important to job satisfaction among Ghanaian nurses.

The result indicated that two factors constitute job satisfaction among nurses in Ghana. These factors have been grouped into two namely (i) pay, organizational policies and professional status (ii) task requirement, interaction and autonomy as in the works of Stamps and Piedmonte (1986). The first component (C1); pay is a very key issue when it comes to job satisfaction. If employees (specifically nurses) are adequately paid, they tend to enjoy the work they do and this transcends into job satisfaction as mentioned in the work of Barker (2001) that, nurses are looking for decent salaries and benefits.

During the data collection process, most nurses complained of low pay and high job demands so most of them feel dissatisfied. When organizational policies are not congruent with the expectations of the job holder, they are often dissatisfied. Nurses with low professional status tend to experience low job satisfaction. Low professional status includes low rank nurses, low educational qualification among others. From the demography characteristics with regards to educational level of respondents, most of the nurses have a diploma in nursing which means after nursing training they did not further their education. So in essence, they will experience low job satisfaction compared to the degree and professional nurses as pointed out by Al-Hussami (2008) that, job satisfaction among nurses depends on commitment, perceived supports, leadership and education level.

With regards to the second component (C2) of job satisfaction, nurses with high task requirement and little time will experience job dissatisfaction; nurses who have problem
with interacting with patients and their fellow workers will also experience job dissatisfaction as pointed out by Farrel and Dares (1988) who assessed the level of job satisfaction of nurses in the general hospital and discovered that they had low satisfaction due to lack of team work among themselves and other members of the health team. Also, according to Cooper (1994) professional nurses are one occupational group who may be exposed to various types of occupational stressors and these stressors could come from work procedures, the relationship between themselves and medical officers as well as the relationship between them and patients. In this study, professional nurses formed 19.3% (see Table 4.3 in this chapter) and they are the third group after Diploma and first degree holders. Finally, nurses who have control or autonomy over their jobs tend to also get satisfied (Karasek, 1979).

4.7 Analysis on the Effect of Workload on Mental stress

The assessment of the effect of workload on mental stress is based on research question five; As highlighted in question five, what effect will nurses’ workload have on their mental stress? This question generated in research objective five; to find out whether nurses’ workload will have an effect on their mental stress (See chapter 1, sections 1.4 and 1.5). Based on this question, Hypothesis one (H1) of this study is tested

H1: Nurses’ workload will have an effect on mental stress.

Pearson’s product moment correlation and regression analysis were used for the test. A summary of Pearson’s product moment correlation between mental stress and job satisfaction is presented in table 4.23 below.
Table 4.23: Pearson’s moment correlation between workload and mental stress

<table>
<thead>
<tr>
<th></th>
<th>Mental stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.137</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.017</td>
</tr>
<tr>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
</tr>
</tbody>
</table>

**p<0.01, *p<0.05

A summary of Pearson’s product moment correlation presented in table 4.23 (α= 0.137 n=300, p=0.017<0.05) above ascertains the relationship between workload and mental stress. The correlation value (0.137) is positive and significant since 0.017 is less than 0.05. This shows that there is a significant positive relationship between workload and mental stress. In addition, a summary of regression analysis on how workload predicts mental stress is presented in table 4.24 below.

Table 4.24: Regression of workload and mental stress

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized B</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
<th>T</th>
<th>Sig.</th>
<th>R² Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (constant)</td>
<td>26.295</td>
<td>2.243</td>
<td></td>
<td>11.724</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Workload</td>
<td>0.252</td>
<td>0.105</td>
<td>0.137</td>
<td>2.395</td>
<td>0.017</td>
<td>0.016</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Mental Stress

The summary of regression analysis shows how workload predicts mental stress (β=0.137, n=300, p=0.017<0.05). The regression model was fit and workload explained 1.6% of the variation in mental stress. The result has a Beta (β) of 0.137 with a significant value of 0.017 which is less than 0.05. This indicates a statistically significant positive relationship between workload and mental stress implying that a unit increase in workload increases mental stress for nurses by 0.137.
The finding attests to a positive relationship between workload and mental stress. Therefore, hypothesis (H1) holds.

H1: Nurses’ workload will have an effect on their mental stress

Accordingly, in answering question five, the results shows that, nurses’ workload has an effect on their mental stress. The finding suggests that workload has a positive implication on mental stress of nurses. Increase in workload therefore increases mental stress of nurses in selected public hospitals in Ghana.

This finding is in line with the work of Greenglass et al (2003) that a heavy nursing workload can lead to mental stress (for example, cynicism, anger and emotional exhaustion) and burnout. He further stressed that, nurses experiencing stress and burnout may not be able to perform efficiently and effectively because their physical and cognitive resources may be reduced and this suboptimal performance may affect patient care and safety. This implies that when nurses’ workload increases, their mental stress also increases.

4.8 Analysis on the Effect of Mental Stress on Job Satisfaction

The assessment of the effect of mental stress on job satisfaction is based on research question six; As highlighted in question six, what effect will nurses’ mental stress have on their job satisfaction? This question generated in research objective six; to ascertain whether nurses’ mental stress will have an effect on their job satisfaction (See chapter 1, sections 1.4 and 1.5). Based on this question, Hypothesis two (H2) of this study is tested

H2: Nurses’ mental stress will have an effect on their job satisfaction.
Pearson’s product moment correlation and regression analysis were used for the test. A summary of Pearson’s product moment correlation between mental stress and job satisfaction is presented in table 4.25 below.

Table 4.25: Pearson’s moment correlation between mental stress and job satisfaction

<table>
<thead>
<tr>
<th>Mental Stress</th>
<th>Job Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>-0.190</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.001</td>
</tr>
<tr>
<td>N</td>
<td>300</td>
</tr>
</tbody>
</table>

**p<0.01, *p<0.05

A summary of Pearson’s product moment correlation presented in table 4.23 (α = -0.190, n=300, p=0.001<0.01) above ascertains the relationship between mental stress and job satisfaction. The correlation value (-0.190) is fairly weak correlation but highly significant since 0.001 is less than 0.01. This shows that there is a significant negative relationship between mental stress and job satisfaction. In addition, a summary of regression analysis on how mental stress predicts job satisfaction is presented in table 4.26 below.

Table 4.26: Regression of mental stress on job satisfaction

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized B</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
<th>T</th>
<th>Sig.</th>
<th>R² Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (constant)</td>
<td>21.112</td>
<td>1.192</td>
<td></td>
<td>17.705</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Mental Stress</td>
<td>-0.124</td>
<td>0.037</td>
<td>-0.190</td>
<td>-3.332</td>
<td>0.001</td>
<td>0.036</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Job Satisfaction
The summary of regression analysis shows how mental stress predicts job satisfaction ($\beta=-0.190$, $n=300$, $p=0.001<0.05$). The regression model was fit and the independent variable (mental stress) explained 3.6% of the variation in the dependent variable (job satisfaction). The result has a Beta ($\beta$) of -0.190 with a significant value of 0.001 which is less than 0.05. This indicates a statistically significant negative relationship between mental stress and job satisfaction implying that a unit increase in mental stress decreases job satisfaction for nurses by -0.190.

The finding attests to a negative relationship between mental stress and job satisfaction. Therefore, hypothesis (H2) holds.

**H2**: Nurses’ mental stress will have an effect on their job satisfaction

Accordingly, in answering question six, the results shows that, nurses’ mental stress has an effect on their job satisfaction. The finding suggests that mental stress has a negative implication on the job satisfaction of nurses. Increase in mental stress therefore decreases job satisfaction while a decrease in mental stress increases job satisfaction of nurses in selected public hospitals in Ghana.

This is in tune with Cooper (1994) finding that Ghanaian nurses regularly face emotionally charged situations and encounter intense interpersonal and inter-professional situations and conflicts in the workplace while trying to make appropriate and safe decisions for their patients and this reduces their job satisfaction. In essence, when nurses are mentally stressed due to factors such as overcrowding and congestion of wards and the vast number of patients they have to attend to daily, it tend to decrease their satisfaction of their jobs because the stress they undergo is beyond them. This is attested by Semmer (1996) who noted that, patients often exhibit different sick behaviors; and these sick behaviors negatively
impact nurses’ job satisfaction and make it difficult in choosing the methods of predicting and handling them very stressful and dynamic.

This finding is also in line with Evans (1991) who found out about his research on nurses’ job satisfaction and mental stress in the US that, nurses’ job dissatisfaction increased from 40 to 60% as they become mentally stressed and burned out. Also this finding is consistent with Fletcher and Payne (1980) findings also in the US who identified that lack of satisfaction can be a source of mental stress, while high satisfaction can alleviate the effects of mental stress. This study reveals that, both mental stress and job satisfaction were found to be interrelated. Again, this finding is consistent with Abaa, Atindanbila, Nyaledzigbor and Abepuoring, (2003) research on nurses at Ridge and Pantang Hospitals in Ghana, they noted that there is a weak negative correlation between work stress and job satisfaction of nurses.

This finding however is at variance with the findings of a study carried out by Tyler and cushway (1995), who investigated the possible buffering effects of job satisfaction on nurses but found no strong evidence for this despite job satisfaction being negatively correlated with mental stress. Also, from literature, there are other factors that affect the job satisfaction of nurses other than mental stress; according to Fitzpatrick, While and Roberts (1999) shift rotation is also one major factor that affects job satisfaction; Persons who rotate shift are more likely to report sleep disturbances, less job satisfaction, lower mental scores, and more accidents than do permanent night shift workers.

Moreover, Locke (1976) Affect Theory of Job Satisfaction states that, a person’s job satisfaction can depend on two factors: the expectation he has for the job and actual things
that he is going to get in that job. The smaller the gap between these two the more chances he is satisfied with his work. Which implies that, most nurses before entering the profession only thought of the benefits they are going to derive from the job without any knowledge of the stress that the job is characterised with so when they enter and start facing the demands of the job, they tend to get more mentally stressed and less satisfied.

Also another reason for nurses mental stress is the problem of nurse-patient ratio. Most hospitals in Ghana, have less nurses and more patients and this exerts strain and stress on them; this could be a problem of the fact that more males are unwilling to take up the nursing job in Ghana as attested by the GHS (2007) that in Ghana, more males are unwilling to choose nursing as a career and this has had an effect on the nurse-patient ratio and thereby increasing stress on existing staff; for instance , the nurse-patient ratio in 1:1240 in 2011 (Ghana Health Service (GHS), 2011) . This finding is also buttressed by the demography results in this study with regard to gender; female nurses dominate (88.7%) their male counterparts (16.3%).

4.9 Analysis on the Moderating Effect of Nurses’ Workload

The assessment of the moderating role of nurses’ workload on job satisfaction is based on the research question seven; how does nurses’ workload affect the relationship between their mental stress and job satisfaction? This question has generated in research objective seven; to find out whether nurses’ workload will affect the relationship between their mental stress and job satisfaction (See chapter 1, sections 1.4 and 1.5). In assessing the veracity of this question, Hypothesis three (H3) of this study is tested

H3: Workload of nurses will affect the relationship between job satisfaction and mental stress.
From the correlation result, workload is positively but significantly ($\alpha = 0.137$, $p = 0.017 < 0.05$) related to mental stress but not significantly ($\alpha = -0.014$, $p = 0.073 > 0.05$) related to job satisfaction. A two-step hierarchical multiple regression as proposed by Cohen, Cohen, West and Aiken (2003) is used. In the first step, the dependent variable is regressed on the independent variable. In the second step, the dependent variable is regressed on both the independent and the moderating variable. The moderating effect is supported when the regression coefficient associated with the moderating variable is significant ($p < 0.05$). The result of the two-step hierarchical multiple regression is presented in table 4.27 below.

Table 4.27: Moderated Two-Step Hierarchical Regression of Workload

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized B</th>
<th>Std. Error</th>
<th>Standardized Beta</th>
<th>T</th>
<th>Sig.</th>
<th>R² Square</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (constant)</td>
<td>21.112</td>
<td>1.192</td>
<td></td>
<td>17.705</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Stress</td>
<td>-0.124</td>
<td>0.037</td>
<td>-0.190</td>
<td>-3.332</td>
<td>0.001</td>
<td>0.032</td>
<td>1.000</td>
</tr>
<tr>
<td>2 (Constant)</td>
<td>22.896</td>
<td>1.758</td>
<td></td>
<td>13.026</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental stress</td>
<td>-0.117</td>
<td>0.039</td>
<td>-0.179</td>
<td>-3.116</td>
<td>0.002</td>
<td></td>
<td>1.019</td>
</tr>
<tr>
<td>Workload</td>
<td>-0.095</td>
<td>0.069</td>
<td>-0.079</td>
<td>-1.380</td>
<td>0.169</td>
<td></td>
<td>1.019</td>
</tr>
</tbody>
</table>

Dependent Variable: Job Satisfaction

The result of the hierarchical multiple regression in Table 4.27 reveals that workload does not moderate the relationship between mental stress and job satisfaction ($\beta = -0.079, p > 0.05$). Therefore, hypothesis three (H3) does not hold.

H3: Workload of nurses will affect the relationship between job satisfaction and mental stress
From the regression model, the moderating variable (workload) explains only 0.6% of the variation in the dependent variable (job satisfaction). The result has a Beta (β) of -0.079 with an insignificant value of 0.169 which is greater than 0.05. This indicates a statistically insignificant negative relationship of the moderating role of workload on the relationship between mental stress and job satisfaction implying that if job satisfaction is low, mental stress is already high so workload does not have any significant effect when it is introduced. In other words, workload contributes only an insignificant 0.6% to the relationship between mental stress and job satisfaction.

In order to fully ascertain the veracity of this question, a mediating test is also carried out in the section below.

### 4.10 Analysis on the Mediating Effect of Workload

From the regression analysis above (table 4.27), it can be noted that, workload does not moderate the relationship between mental stress and job satisfaction hence a further test that is the mediation test has been carried out to ascertain whether workload significantly carries the effect of mental stress to job satisfaction. Sobel test by Sobel (1982) was used to test the mediating effect of workload on the relationship. The mediation test result is presented in table 4.28 below.

<table>
<thead>
<tr>
<th>Workload</th>
<th>Sobel test value</th>
<th>Standard Error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload</td>
<td>-1.108</td>
<td>0.009</td>
<td>0.268</td>
</tr>
</tbody>
</table>

*P<0.05
From the mediated Sobel test result in table 4.28, workload does not have any statistically significant (St=0.268, p˃0.05) mediating effect on the relationship between mental stress and job satisfaction. Therefore, it can be said that, workload does not moderate nor mediate the relationship between mental stress and job satisfaction. Accordingly, in answering question seven, the results shows that workload of nurses does not affect the relationship between their mental stress and job satisfaction.

This finding is in line with an empirical study by Mathieu (1990) on nurses which revealed that, job stress variables have negative impacts on job satisfaction. In this study, workload was found to be related negatively to job satisfaction but not significant.

This finding is at variance with the findings of Kingma (2001) who noted that current workforce shortages among nurses are likely to place greater demands (workload) upon nurses which might be expected to increase their mental stress and may reduce the quality of workplace relationships which has emerged as an important source of job satisfaction and contributes to organizational commitment. Workload has a significant positive relationship with mental stress but it (workload) has a negative but insignificant relationship with job satisfaction. Findings of Price and Mueller (1986), also revealed that the net impact of work overload on job satisfaction and mental stress was statistically significant; and several other authors (Rourke, 2008; Stenger, Cashman & Savageau, 2008).

However, not much work has been achieved in this area to support this finding. The reason for the variance in findings could be ascribed to a lot of factors. (i) Differences in the definition of workload: In this study, workload has been defined as the amount of work an individual has to do or the amount of effort required by a job. In the study of other authors
like Hart and Wickens (1990) workload was defined in terms of the cost of accomplishing the task requirement for the human element of machine systems. This ‘cost’ may be reflected in the depletion of attentional, cognitive, or response resources, inability to accomplish additional activities, emotional stress, fatigue or performance decrements. In the latter’s definition workload goes beyond amount of work to be done and the effort required by the job. The problem therefore may not be the amount of work and effort put in the job but may go beyond these and may include other elements like emotional stress, depletion in attentional and cognitive resources before a task could be accomplished.

In addition, in the works of Hart and Staveland (1998), there are six dimensions of workload but in this study, there are only two. These could therefore explain the variance in findings. (ii) Also another reason may be difference in respondents and context used for the study; Hart and Staveland (1988) carried out this study among aircraft cock-pit operators in a developed country but this study was conducted in a developing country among nurses whose workload levels and job assignments are different. (iii) The last reason for the variance in findings is that, according to literature, apart from workload, other reasons which may account for job dissatisfaction are: increasing use of technology, continuing going up in health care cost and unrest in the work environment.

However, despite the findings that, workload does not moderate the relationship between mental stress and job satisfaction, the researcher further went ahead and carried out a mediation test to find out whether workload mediates the relationship. However, the Sobel test result revealed that workload does not mediate (St=0.268, p<0.05) in the relationship. Therefore it can be said that, workload of Ghanaian nurses neither mediates nor moderates the relationship between their mental stress and job satisfaction but workload is rather
positively and significantly related to mental stress ($\alpha =0.137$, $p=0.017>0.05$) but though it is negatively related to job satisfaction, it is not significant ($\alpha =-0.014$, $p=0.073>0.05$). So in essence, workload has no impact on the relationship between mental stress and job satisfaction.

### 4.11 Analysis on the Moderating Effect of Nurses’ Time Pressure

The assessment of the moderating role of nurses’ time pressure on job satisfaction is based on the research question eight; how does time pressure on nurses affect the relationship between their mental stress and job satisfaction? This question resulted in the generation of research objective eight; to ascertain whether time pressure on nurses will affect the relationship between their mental stress and job satisfaction (See chapter 1, sections 1.4 and 1.5). To be able to achieve this objective, the hypothesis four is tested (H4)

H4: Time pressure on nurses will affect the relationship between job satisfaction and mental stress. A two-step hierarchical multiple regression as proposed by Cohen et al. (2003) which was utilized to test the second hypotheses is again used to test this one. From the correlation result, time pressure was found to be positively and significantly ($\alpha =0.171$, $p=0.003<0.01$) associated with mental stress and negatively but significantly ($\alpha =-0.233$, $p=0.000<0.01$) related to job satisfaction. The result of the two-step hierarchical multiple regression is displayed in table 4.29 below.
The result of the hierarchical multiple regression in Table 4.29 reveals that time pressure moderate the relationship between mental stress and job satisfaction ($\beta = -0.207, p > 0.05$). Therefore, hypothesis four (H4) is supported.

H4: Time pressure on nurses will affect the relationship between job satisfaction and mental stress.

Therefore, in answering question eight, the results shows that time pressure of nurses has an effect on the relationship between their mental stress and job satisfaction.

From the regression model, the moderating variable (time pressure) explains 4.2% of the variation in the dependent variable (job satisfaction). The result has a Beta ($\beta$) of -0.207 with a highly significant value of 0.000 which is less than 0.05. This indicates a statistically significant negative relationship of the moderating role of time pressure on the relationship between mental stress and job satisfaction meaning that if job satisfaction is low and mental stress is high, time pressure also has a statistical significant effect (will also be high),
implying that a unit increase in mental stress and time pressure decreases job satisfaction for nurses by -0.190 and -0.207 respectively. Therefore, in answering question eight, the results indicates that time pressure on nurses affects the relationship between their mental stress and job satisfaction.

This finding is in concordance with Lazarus and Folkman’s (1984) transactional theory which states that stress is as a result of an imbalance between demands and resources or as occurring when pressure exceeds one’s perceived ability to cope. It is the interpretation of stress that focuses on the transaction between people and their external environment. In other words, if workers (nurses) feel workload pressure but have little time to accomplish the task they have on hand, they tend to experience mental stress and job dissatisfaction because they do not have the resource (time) to cope (accomplish what they have to do). Therefore, it is not the workload in itself that causes job dissatisfaction but rather the unavailability of time (not having enough time) to accomplish the work on hand.

This in essence is reflected in the demography results with regards to number of hours spent at work by nurses; most of them spend between 8-10 hours at work but yet feel rushed throughout their duties for the day and are not able to accomplish most of their tasks before handing over to the next shift nurses. This sometimes also results in overtime work, because if they are not able to accomplish what they have to do before their shifts end, they tend to extend their working hours (which they claimed they do not get paid for) to finish the work they have on hand. Also, this finding is in concordance with the findings of Bowers et al (2001) that the main source of job dissatisfaction among nurses was too little time.
Also several other authors also found time pressure to be a significant moderator (Baumann, O’Brien-Pallas, Armstrong-Stassen, Blythe, Bourbonnais, Cameron, Doran, Kerr, Hall, Zina, Butt & Ryan, 2001; Blythe, Baumann & Giovannetti, 2001; Green & Tsitsianis, 2005; Bowers, Lauring, & Jacobson, 2001). The finding suggests that time pressure is a phenomenon that permeates and adversely affects job satisfaction together with mental stress among Ghanaian nurses. Finally, this is also in tune with Karasek’s JDC model which states that high demand conditions include inadequate time to meet job demands and excessive workload.

4.12 Path Analysis of Conceptual Framework

The study was based on a framework that establishes a relationship between mental stress and job satisfaction with workload and time pressure as moderating variables. The study argued that mental stress will be related to job satisfaction while workload and time pressure will be linked to mental stress and job satisfaction. Finally, the study proposes that workload and time pressure will moderate the relationship between mental stress and job satisfaction. The proposed conceptual framework is presented in figure 4.6 below.
Figure 4.6. Proposed conceptual framework for the study

An analysis was conducted to ascertain the veracity of the conceptual framework and the proposed conceptual framework with its estimated values is presented in Figure 4.7 below
However, as discussed in the analysis the orientation of the conceptual framework has transformed into a new one. The study discovered that, mental stress has a negative significant relationship with job satisfaction. Also, workload does not moderate nor mediate the relationship between mental stress and job satisfaction but rather positively and
significantly related to mental stress and also related but not significantly with job satisfaction. Again, time pressure was found to moderate the relationship between mental stress and job satisfaction and also positively and significantly related to mental stress but negatively and significantly related to job satisfaction. From this model, work physiological factors comprise of time pressure, mental stress and workload and these interact with a motivation factor which is job satisfaction. Among the three work physiological factors too, mental stress was found to be moderating the relationship between time pressure and workload. From the model, mental stress is seen as a dependent variable with respect to workload according to work physiological literature. Future research can therefore be guided by this knowledge. The modified conceptual framework for this study is therefore presented in the figure below.
Figure 4.8. Modified conceptual framework for the study
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of findings, conclusions and recommendations based on data analyzed in the previous chapter.

5.1 Summary of Findings

Research findings discussed under the previous chapter are summarized in line with research questions.

Research question one (1): What factors constitute workload of nurses?

With respect to the first research question, after conducting factor analysis to ascertain what factors constitute workload, the component matrix gave two components. Five of loadings are high for component 1 (0.647, 0.687, 0.704, 0.686 and 0.624). The last loading in this component is very low (0.140); in component 2, only one of the loadings is high (0.852); the rest are very low (0.387, 0.264, 0.054, 0.002 and -0.449). The first workload component can be referred to as demand of work and the second component can be named as effort load. The study found out that, the variables under Karasek’s (1979) job-demand control model workload which is demand of work and effort load prevailed among Ghanaian nurses in these four hospitals.

Research question two (2): What factors constitute nurses’ mental stress?

With the aid of factor analysis, the factor rotated component matrix identified four components of mental stress. The first component has three loadings which were high (0.769, 0.670 and 0.727); these items make up psychological stress load. The second
component had only one loading that was high (0.844). This item can be termed as time load. The third component has only two loadings which were high (0.660 and 0.742). These items can be explained as mental load. The fourth component also has only one loading that was high (0.850), the rest are low; this can be termed as effort load. From the rotated component matrix, it can be noted that “I occasionally have spare time” and “my work requires little conscious effort or concentration” does not contribute to mental stress at all because they have low loadings which cannot be accepted as significant. These results from the factor analysis performed indicated that all four variables predicted what constitute mental stress among Ghanaian nurses.

Research question three (3): What factors constitute nurses’ time pressure?

With respect to question three, the factor analysis result gave only one component as the factor that constitutes nurses’ time pressure. All the variable loadings of time pressure are high (0.733, 0.736, 0.691, 0.658, 0.768 and 0.791). All these items constitute only one factor of time pressure which is high time pressure. The result of the factor analysis indicated that high time pressure prevailed among Ghanaian nurses.

Research question four (4): What factors constitute nurses job satisfaction?

To answer this question, factor analysis was carried out to highlight the factors that really constitute job satisfaction. The rotated matrix gave two component loadings as factors that constitute job satisfaction. The first component has three significant loadings which were high (0.726, 0.839 and 0.753). These items are summarized as pay, organizational policies and professional status. The second component also had three significant loadings which were also high (0.678, 0.828 and 0.752). These items can be summarized as task
requirement, interaction and autonomy. These results from the factor analysis performed indicated that all two variables predicted what constitute job satisfaction among Ghanaian nurses.

Research question five (5): What effect will nurses’ workload have on their mental stress?

With respect to research question five, correlation and regression analysis was carried out to find out whether workload among nurses have an effect on their mental stress. The correlation result indicated that there is a significant positive relationship between workload and mental stress ($\alpha =0.137$, $n=300$, $p=0.017<0.05$). Which means when workload increases, mental stress also increases. Furthermore, the regression results revealed that the regression model was fit and workload explains 1.6% of the variation in mental stress. The result has a Beta ($\beta$) of 0.137 with a significant value of 0.017 which is less than 0.05. This indicates a statistically significant positive relationship between workload and mental stress implying that a unit increase in workload increases mental stress for nurses by 0.137.

Research question six (6): What effect will nurses’ mental stress have on their job satisfaction?

With respect to research question six, correlation and simple linear regression was carried out to find out whether mental stress among nurses have an effect on their job satisfaction. The correlation result indicated that there is a significant negative relationship between mental stress and job satisfaction ($\alpha = -0.190$ $n=300$, $p=0.001<0.01$).Which means that, as mental stress increases, job satisfaction decreases or as job satisfaction increases, mental stress decreases. Furthermore, the result of the regression analysis revealed that the regression model was fit and the independent variable (mental stress) explained 3.6%
of the variation in the dependent variable (job satisfaction). The result has a Beta (β) of -0.190 with a significant value of 0.001 which is less than 0.05. Therefore, mental stress has a statistically significant effect on Ghanaian nurses’ job satisfaction.

Research question seven (7): How does nurses’ workload affect the relationship between their mental stress and job satisfaction?

A two-step hierarchical multiple regression and Sobel mediating test were conducted to answer this question. The result found out that workload does not have any statistically significant effect on the relationship between mental stress and job satisfaction (β=-0.079, p>0.05). From the result, moderating variable (workload) explains only 0.6% of the variation in the dependent variable (job satisfaction). The result has a Beta (β) of -0.079 with an insignificant value of 0.169 which is greater than 0.05. This indicates an insignificant negative relationship of the moderating role of workload on the relationship between mental stress and job satisfaction implying that if job satisfaction is low, mental stress is already high so workload does not have any significant effect when it is introduced. In other words, workload contributes only an insignificant 0.6% to the relationship between mental stress and job satisfaction. In addition, the Sobel test result indicated that workload does not also mediate (St=0.268, p>0.05) the relationship between mental stress and job satisfaction. However, from the correlation result, workload was found to rather have a significant positive (α =0.137, p=0.017<0.05) relationship with mental stress but not with job satisfaction (=α -0.014, p=0.073>0.05). Therefore, it can be possible to conclude that workload does not affect (it neither moderates nor mediates) the relationship between mental stress and job satisfaction.
Research question eight (8): How does time pressure on nurses affect the relationship between their mental stress and job satisfaction?

Finally, the study found out that, time pressure has a statistically significant effect on the relationship between mental stress and job satisfaction ($\beta=-0.207$, $p>0.05$). Time pressure explains 4.2% of the variation in the dependent variable (job satisfaction). The result has a Beta ($\beta$) of -0.207 with a highly significant value of 0.000 which is less than 0.05. This indicates a statistically significant negative relationship of the moderating role of time pressure on the relationship between mental stress and job satisfaction meaning that if job satisfaction is low and mental stress is high, time pressure also has a statistical significant effect (will also be high) when it is introduced, implying that a unit increase in mental stress and time pressure decreases job satisfaction for nurses by -0.190 and -0.207 respectively.

Also, time pressure was found to be positively and significantly ($\alpha=0.171$, $p=0.003<0.01$) related to mental stress and negatively but significantly ($\alpha=-0.233$, $p=0.000<0.01$) related to job satisfaction.

5.2 Conclusions

Based on the findings of the data analysis, the study has come out with the following conclusions:

i. Demand of work and effort load are the factors that constitute workload among Ghanaian nurses.

ii. Four factors constitute nurses’ mental stress in Ghana. They are psychological stress load, mental load, effort load and time load.
iii. Two factors constitute job satisfaction among Ghanaian nurses, they are; (1) Pay, organizational policies and professional status and (2) task requirement, interaction and autonomy.

iv. High time pressure is the only factor that constitutes time pressure among Ghanaian nurses.

v. Increase in nurses’ workload leads to a statistical increase in their mental stress.

vi. Increase in nurses’ mental stress leads to a statistically significant decrease in their job satisfaction in Ghana.

vii. Workload does not play any statistically significant moderating nor mediating role in the relationship between mental stress and job satisfaction among nurses in Ghana.

viii. Time pressure moderates the relationship between mental stress and job satisfaction among Ghanaian nurses.

5.3 Recommendations

Finally, based on research findings and conclusions, the following recommendations are being put forward for management, practitioners as well as future research.

- In understanding workload of nurses, it is important for management to know the two factors that are predictive of workload in the Ghanaian setting.

- To understand nurses’ mental stress, there is the need to note the four factors that constitute mental stress of nurses in Ghanaian hospitals.

- In order to understand nurses’ job satisfaction, there is the need to take note of the two factors that constitute job satisfaction of nurses in Ghana.
In understanding time pressure, the time pressure factor identified in this study has to be taken into account.

- Nurses should be assigned duties that can be accomplished before their shift ends in order to decrease their workload as well as decrease their mental stress.

- Mental stress was found to be a very important factor that adversely affects nurses’ job satisfaction in Ghana therefore, as according to Lazarus and Folkman (1984) transactional theory, stress is as a result of an imbalance between demands and resources or as occurring when pressure exceeds one’s perceived ability to cope. Management should therefore endeavour to design stress management programs and organize workshops in that area for nurses so to help reduce the high mental stress that adversely decreases their job satisfaction.

- Management should also endeavour to increase nursing staff in the various hospitals to decrease the mental stress on nurses.

- Management should also endeavour to match pay and incentives to the level of workload of nurses so as to create a perfect match between the payment and amount of work done in order to reduce their job dissatisfaction.

- Policies should be put in place to limit the number of patients seen by a nurse during a shift so as to reduce time pressure on them which will increase their job satisfaction and decrease their mental stress.

- Also, management within the health sector must ensure that nurses do not exceed their normal working hours in order to minimize time pressure on them and this will consequently increase their job satisfaction and even if they work overtime, appropriate pay must be given unto them.
5.3.1 Directions for future research

- Future research could look at a comparative study in this same area, comparing nurses in the public and private hospitals to find out whether there is a difference in how these variables impact on their job satisfaction.

- Once again, future research can adopt a mixed method by combining both quantitative and qualitative research to explore further an in-depth study among these relationships not only in the health sector but also other sectors like mining, education, oil and gas.

- Also, future research could also look at age, number of working hours and the number of years spent in current profession as moderating variables on mental stress and job satisfaction within the health sector.

- Future studies could also explore the relationship between time pressure and workload with mental stress as a moderating variable.

- Finally, workload was found to be insignificantly related to job satisfaction. Future research could find out why workload did not have any significant relationship with job satisfaction using a qualitative approach.
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U.S Department of Labour, 2014


APPENDICES

APPENDIX I (RESEARCH QUESTIONNAIRE)

Department of Organization and Human Resource Management
University of Ghana Business School
P.O.Box LG 78, Legon, Accra, Ghana

RESEARCH QUESTIONNAIRE
Influence of Ghanaian Nurses’ Mental Stress on Job
Satisfaction: The Moderating Effect of Workload and Time Pressure

Synopsis
This research is being undertaken to understand the influence of nurses’ mental stress on their job satisfaction as well as the contribution of workload and their time pressure on this influence in public hospitals in Accra. The aim of this study is to provide an understanding into the relationship between workload of nurses, time pressure, mental stress and job satisfaction in selected public hospitals in Accra, Ghana.

This study will thereby provide an understanding of how much mental stress, workload and time pressure nurses are faced with and how these can have an effect on their job satisfaction.

I undertake that information provided will be used for the purpose of this research only and will be treated anonymously.

Thank You.

Elikplim Aku Cudjoe
MPhil, Research Student
Contact: 0548250538/ 0208864658
E-mail: elikplim2009@yahoo.com
SECTION A
DEMOGRAPHY

Please kindly answer the following by ticking (✓) the appropriate answer of your choice.

1. Gender:
   [ ] Male                        [ ] Female

2. Age:
   [ ] 18-24years                       [ ] 25-34years                      [ ] 35-44years
   [ ] 45-55years                       [ ] Over 55years

3. Educational level:
   [ ] WASSCE                              [ ] Diploma
   [ ] First Degree                          [ ] Professional            [ ] Post Graduate
degree

4. Number of years spent in the nursing profession:
   [ ] Less than a year                  [ ] 1-3 years                  [ ] 4-6 years
   [ ] 7-9 years                               [ ] 10years and above

5. Number of working hours in current position:
   [ ] Less than 5hours  [ ] 5-7hours  [ ] 8 - 10hours  [ ] 10-12hours
   [ ] over 12 hours
**SECTION B: Nurses’ Workload**

The seven elements below give a description of how much workload a nurse is faced with. Please kindly indicate your assessment of each item from 1- very low to 5- very high estimates for each point by ticking (✓) the appropriate answer of your choice.

<table>
<thead>
<tr>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q6. The mental demand for the job assigned to me is

Q7. The physical demand for the job assigned to me is

Q8. The pace of the job assigned to me is

Q9. The success I achieve in accomplishing what I am asked to do is

Q10. The effort I have to put in to accomplish my current level of performance is

Q11. The frustration I go through in performing my duty is
### SECTION C: Nurses’ Mental Stress

The nine (9) statements below give a description of the mental stress nurses go through during their daily routine. Please kindly indicate your assessment of each item from 1- very low to 5- very high estimates for each point by ticking (√) the appropriate answer of your choice.

<table>
<thead>
<tr>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q12 I often have spare time. The probability that interruptions or overlap among activities occur infrequently or not at all at work is

Q13 I occasionally have spare time. The probability that interruptions or overlap among activities occur frequently at work is

Q14 I almost never have spare time. The probability that interruptions or overlap among activities are very frequent, or occur all the time at work is

Q15 My work requires little conscious mental effort or concentration. Activities that I perform at work are almost automatic, requiring little or no attention at a...level

Q16 My work requires moderate conscious effort or concentration. Complexity of activities is moderately high due to uncertainty, unpredictability or unfamiliarity. Considerable attention required is

Q17 My work requires extensive mental effort and concentration. Very complex activity requiring total concentration is at a...level

Q18 I get a little confused, feel at risk, frustrated and anxious and can be easily accommodated at a...level

Q19 I am moderately stressed due to confusion, frustration or anxiety noticeably adds to my workload. Significant compensation is required to maintain adequate performance at a...level

Q20 I get highly stressed due to confusion, frustration or anxiety. High to extreme determination or self-control is required at a...level
SECTION D: Nurses’ Time Pressure

The following Six (6) items below give a description of time pressure on nurses. Please kindly indicate your assessment of each item from 1- very low to 5- very high estimates for each point by ticking (√) the appropriate answer of your choice.

<table>
<thead>
<tr>
<th>Very Low</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q21 The constant time pressure I encounter due to a heavy workload at work is

Q22 The many interruptions and disturbances I experience in my work is

Q23 The level of responsibility I have in the work assigned to me is

Q24 The pressure I encounter in working overtime is

Q25 Over the past few years, my job demand has become

Q26 The overwhelming time pressure I experience at work is
SECTION E: Nurses’ Job Satisfaction

The statements below give a description of your job satisfaction. Please kindly indicate your level of satisfaction with each of the statements from 1- completely Dissatisfied to 5- completely Satisfied by ticking (√) the appropriate answer of your choice.

<table>
<thead>
<tr>
<th>Completely Dissatisfied</th>
<th>Dissatisfied</th>
<th>Not Sure</th>
<th>Satisfied</th>
<th>Completely Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Q27 How satisfied are you with the nature of the work you perform? 1 2 3 4 5
Q28 How satisfied are you with the person who supervises you? 1 2 3 4 5
Q29 How satisfied are you with the relationship with your co-workers? 1 2 3 4 5
Q30 How satisfied are you with the pay you receive for your job? 1 2 3 4 5
Q31 How satisfied are you with the opportunity which exists in this organization for advancement and promotion 1 2 3 4 5
Q32 Considering everything, how satisfied are you with your current job situation? 1 2 3 4 5

End of Survey

Thank you for taking out time off your busy schedule to complete this questionnaire!!!
APPENDIX II (LETTER OF INTRODUCTION TO RIDGE HOSPITAL)

INTRODUCTORY LETTER MS. ELIKPLIM AKU CUDJOE

This serves to introduce to you the above named student from University of Ghana Business School who has been granted permission for assistance to use your facility to gather data to complete her project work.

Attached is an introductory letter from the College for your perusal.

Thank you.

MR PETER MENSAH
DEPUTY DIRECTOR, ADMINISTRATION FOR: REGIONAL DIRECTOR OF HEALTH SERVICES GREATER ACCRA REGIONAL HEALTH DIRECTORATE

In case of reply the number and date of this Letter should be quoted.

My Ref No GAR ADMIN 2/15
Your Ref. No.

Ghana Health Service
Greater Accra Regional Health
Directorate
P 0 Box 184
Accra.

April 3, 2015
Tel.0302 – 234225
APPENDIX III (ETHICAL CLEARANCE FORM FROM 37 MILITARY HOSPITAL)

Institutional Review Board
37 Military Hospital
Neghelli Barracks
ACCRA

Tel: 0302-775958
Email: irb37mihosp@hotmail.com
8th May 2015

Our Ref: IRB/37MH/085/15

37MH-IRB IPN 026/2015

ETHICAL CLEARANCE

On 21st February 2015 the 37 Military Hospital (37MH) Institutional Review Board (IRB) at a full Board meeting reviewed and approved your protocol.


PRINCIPAL INVESTIGATOR: Elikplim Aku Cudjoe

Please note that a final review report must be submitted to the Board at the completion of the study.

Please report all serious adverse events related to this study to 37MH-IRB within seven (7) days verbally and fourteen (14) days in writing.

This certificate is valid till 21st February 2016

Dr Edward Asumanu
(37MH-IRB, Vice Chairperson)

Cc: Brig Gen (Dr) Ralph Ametepi
Commander, 37 Military Hospital

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# APPENDIX IV (ACCEPTANCE LETTER FROM 37 MILITARY HOSPITAL)

MEMO

<table>
<thead>
<tr>
<th>FROM</th>
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<tr>
<td>TO</td>
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</tr>
<tr>
<td>INFO</td>
<td>MATRON D/MATRON (ADMIN) D/MATRON (CLINICAL)</td>
</tr>
<tr>
<td>SUBJ</td>
<td>CONDUCT OF RESEARCH – MS ELIKPLIM AKU CUDJOE</td>
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</table>

**DATE:** 11 May 2015

1. Approval has been granted the above-named student of the University of Ghana Business School to conduct research on the Topic: “Influence of Ghanaian Nurses” Mental Stress On Job Satisfaction: The Moderating Effect of workload and Time Pressure.

2. Grateful request assist her in the completion of the questionnaire. Attached please find copy of Ethical Clearance from the IRB of the Post Graduate College.

3. Pse accept for action.

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<td>SNR ADMIN OFFR (MED)</td>
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APPENDIX V (NORMALITY OF DATA AND Q-Q PLOTS)

Mental stress

Time pressure

Mean = 31.62
Std Dev. = 4.953
N = 330

Mean = 30.53
Std Dev. = 3.487
N = 300
Workload

Job satisfaction
# Workload

<table>
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<sup>a</sup> Lilliefors Significance Correction

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# Mental stress

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<sup>a</sup> Lilliefors Significance Correction

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Time pressure

Tests of Normality

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a. Lilliefors Significance Correction

Skewness -.560 .141
Kurtosis .050 .281

Job satisfaction

Skewness -.459 .141
Kurtosis 1.336 .281

Tests of Normality

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a. Lilliefors Significance Correction