ENSIGN COLLEGE OF PUBLIC HEALTH, KPONG EASTERN REGION,

GHANA

WORK-ASSOCIATED LIFESTYLE AND STRESS AMONG STAFF OF COMMERCIAL BANKS IN ACCRA, GHANA

by

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MASTER OF PUBLIC HEALTH

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DECLARATION AND CERTIFICATION

I, Dzah Adolphine Akpene, declare that this submission is my own work towards the MPH and that to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate this work to my beloved parents who have been of enormous help to me during the course of my study.

ACKNOWLEDGEMENT

I wish to state with humility that this piece of intellectual work is solely the effort of Adolphine Akpene Dzah. Many people have assisted me morally, spiritually, intellectually and materially in the accomplishment of this dissertation.

I would first of all like to mention with gratitude, Dr. Frank Baiden who supervised this study. His suggestions and views helped to organize the thoughts expressed in this study.

I will also like to express my profound gratitude to lecturers, fellow colleagues and research assistants whose views, comments and dedication helped me complete this piece of work.

I also wish to acknowledge with much gratitude to the Operations and Customer Care Managers for the field component of this study whose support helped me to successfully collect my data.

DEFINITIONS OF TERMS

EQ VAS - Records the respondent's self-rated health on a vertical, visual analogue scale where the endpoints are labelled 'Best imaginable health state' and 'Worst imaginable health state'. This information can be used as a quantitative measure of health outcome as judged by the individual respondents.

Leptin level - Leptin is a hormone that is tied closely to regulating energy intake and expenditure, including appetite, metabolism and hunger. It is the single most important hormone when it comes to understanding why we feel hungry or full. When present in high levels, it signals to our brain that we're full and can stop eating. When low, we feel hungry and crave food.

Synapse - a junction between two nerve cells, consisting of a minute gap across which impulses pass by diffusion of a neurotransmitter.

Synaptic plasticity is the ability of a synapse to change in strength in response to use or disuse.

ABBREVIATIONS / ACRONYMS

CRH - Corticotropin-Releasing-Hormone

HPA - Hypothalamic–Pituitary–Adrenal

MIS - Management Information System

NCD - Non Communicable Disease

NIOSH - The National Institute of Occupational Safety and Health

OR - Odds Ratio

QOL - Quality Of Life

S.D - Standard Deviation

ABSTRACT

Introduction: Stress has been associated with the development of non-communicable diseases. Reduction of work-related stress is therefore a major occupational health intervention. Anecdotally, staff of commercial banks in Ghana are considered to be among workers most prone to work-related stress. Very little is however known about how work-associated lifestyle is related to stress at early age and hence vulnerability to non-communicable disease.

Methods: This is a cross-sectional study that used a self-administered questionnaire. Staff of commercial banks located in the Central Business District and along the Spintex Road in Accra completed the questionnaire that included questions on sociodemographic background, eating habit and work-home schedule. Workers also completed the PRO MIND stress assessment questionnaire. Analytical statistical techniques were used to explore the association between sociodemographic background, work-related lifestyle and level of stress All analysis were performed using Stata version 14.

Results: Three hundred and sixty-nine (females=52%) bank workers below 30years were studied (average age of 27years, S.D=2.3). About half (51%) of bank staff left home for work earlier than 6 am, with 6% leaving before 5 am. About a third (33%) left the office after 7 pm while 29% took their last meal after 7 pm. About 13% did so after 8 pm. The prevalence of normal stress among staff was 80% while moderate stress is 20%. None of the explored socio-demographic characteristics of staff was associated with the level of stress experienced by staff. Staff who took their last meal after 8 pm were however three times more likely (OR=3.10, 95% CI: 1.40 - 6.88, $p < 0.017$) to be stressed.

Conclusion: There is a high level of stress among the surveyed bank staff and mitigation interventions are needed to reduce the risk of development of non-communicable diseases. There is possibly a relationship between the eating habits of bank staff and the level of stress they experience. Longitudinal studies are needed to overcome possible reverse causality, and to confirm the association.

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

The work environment has changed over the years with the emergence of globalisation. Employers' expectations of their staff have increased as employment opportunities decline. To meet employer expectations, employees have to work long hours or run shifts to deal with the increased workload (Sauter *et al*, 1998). This pressure worsens when people think they cannot cope with it and do not have the means to avert its effect. These stressors in turn trigger a response which becomes evident as stress.

Stress is a vigorous state in which a person is confronted with an opportunity, demand, or resource related to what the individual wishes and for which the outcome is perceived to be both vague and vital (Ahmed and Ramzan, 2013).

Over the past few decades stress is emerging as an increasing problem in organizations.

Stress, has been confused with challenges that arise from our day to day activities. The usual phrase "a little stress is good" can be associated with the description of challenges which in effect is beneficial to arouse the physiological and physical aspect of an individual to deal with situations that seem out of the norm. These usually result in developing new skills and to a larger extent, sharpen the acquired knowledge of an individual. When challenges at work are not met, it translates into a stressful situation (Sauter *et al*., 1998).

When one realizes the pressures on them, or the requirements of a situation are wider than their recognition that they can handle and if these requirements are huge and continue for a

longer period of time without any interval, mental, physical or behavioural problems may occur, (Health &Safety Executive UK).

As reported by Jayashree (1988), when organizational stress is mismanaged, it affects the human potential in the organization. It further leads to reduced quality, productivity, health as well as wellbeing and morale.

Today, workplace stress is becoming a major issue and a matter of concern for the employees and the organizations. It has become a part of life for the employees, as life today has become so complex at home as well as outside that it is impossible to avoid stress (Ongori H. & Agolla J.E., 2008).

Workers these days are faced with structural lag in the interface between their work and family roles. Increasing numbers of workers experience both workplace and domestic responsibilities. The involvement of women into the labour force in the second half of 20th century has created another period of structural lag. Families are besieged with internal and external stressors which invariably results in increased divorced rates, number of reconstituted families and labour force participation of mothers.

Invariably lifestyles have a relation to stress and this in turn has possible consequences on quality of life and risk of non-communicable diseases.

Current theories establish that quality of family life and the level of social support are crucial for the resilience of the family in the light of stress (Lloyd & S.A., 1988).

1.2 Problem Statement

In Ghana working in the banking sector is seen to be one of the lucrative occupations to be engaged in. Generally bankers are seen to be staff who enjoy a higher standard of living compared to other Ghanaians.

The banking sector in the country has undergone tremendous transformation over the past two decades. Liberalization and competition have become the hallmark of the sector in Ghana. The management and staff of banks are under increasing pressure to attract, retain and trade with customers. Customers are presented with an abundance of choice and are increasingly exercising that right. Bank staff who for many years used to sit in offices are increasingly being required to step out in a physical chase for customers. Banking hours are increasingly being stretched with staff having to work for long hours, and on weekends. These are potential point of stress for staff, with potential effect on their quality of life and risk of non-communicable diseases.

This study was undertaken to explore work-associated lifestyle and determine level of stress of staff of banks in Accra, Ghana. The findings are discussed within the context of the potential risk of non-communicable diseases among these workers.

1.3. Significance of the Study

This study seeks to provide information on the lifestyle of staffs of banks and their stress level. It is also to put forward the common diseases they are prone to.

It is hoped that findings from this study will be relevant to employers of bank workers to support their workers through policy development to protect their health as well as advice

staff on what other colleagues are doing right that maximise their quality of life and helps them to cope well with the stress at work.

Findings may also serve as a reference for further research into related issues.

1.4 OBJECTIVES

1.4.1 Goal

Towards promoting the health and social wellbeing of Ghanaian workers.

1.4.2 Aim

To determine the prevalence of stress among staff of banks.

1.4.3 Specific Objectives

1. To assess stress-levels of staff using the stress assessment scale
2. To describe how workplace demands impacts on the lifestyle of the workers
3. To explore the factors influencing stress among the workers
4. To identify possible interventions to reduce stress and improve quality of life

1.5 Hypothesis

This study will examine the hypothesis that there is an association between lifestyle of staff of banks and stress level experienced by workers.

1.6 Conceptual framework

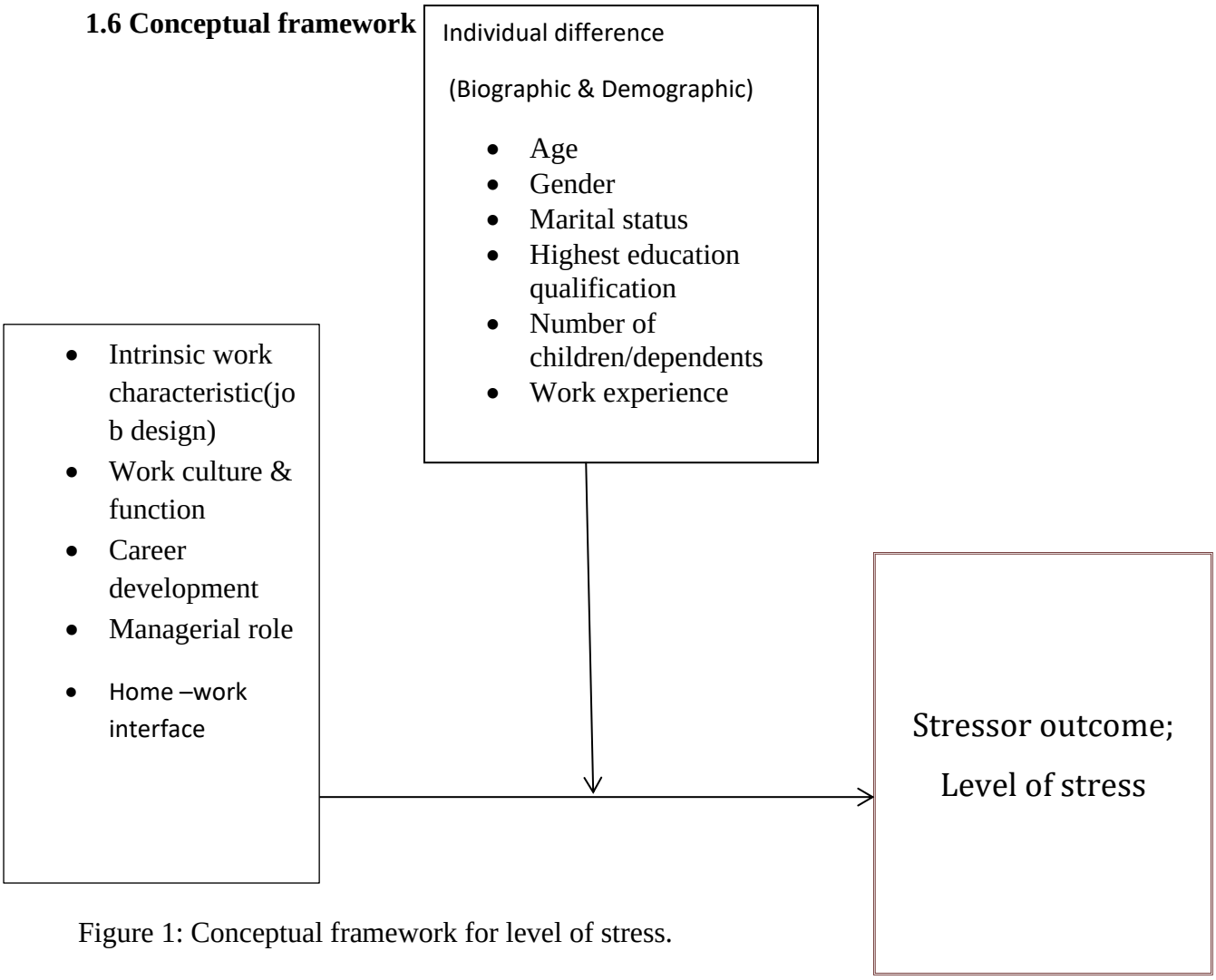


Figure 1: Conceptual framework for level of stress.

The work design of bank workers has couched a work culture such that staff have a routine time of leaving home in order to beat traffic. The work load has made it impossible to have regular break to eat on time and even relax in-between working hours to deal with boredom. Staff who aim at securing promotions endeavour to upgrade their knowledge hence enrol in weekend or evening school. This situation worsens if they are married and have to attend to home affairs or have children that ought to be assisted at home. This routine lifestyle of staff of bank coupled with individual differences in terms of gender, age, marital status, number of children/dependents and work experience are contributing factors to the level of stress they are likely to experience.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter therefore reviews relevant theoretical and empirical literature on employee stress and quality of life. In this chapter, I will throw more light on employee work related lifestyle and stress making reference to various concepts of employee stress, stress model, the forms of stress, source of stress and how we can improve employee copying mechanism to stress in light of their lifestyle.

2.2 Concept of stress

Stress was called "The Disease of the Century" in the last century, but apparently, continues growing and developing at present (Streparava, 2014). Till date, there is an ambiguity in the definition of stress and this can be attested to by the initial definition of stress by Selye (1973) “the non-specific Neuro-endocrine response of the body to any demand made on it.” He then came up with a more convincing definition which points to the fact that other organ systems are affected in the stages of stress response but never gave up on the fact that it is a non-specific response of the body to stressors.

Job stress is said to be the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. It encompasses a perception of the inability of individuals meeting the environmental demands placed on them daily (Sauter *et al*., 1998; Topper, 2007).

The work environment has changed over the years with the emergence of globalisation. Employers' expectations of their subordinates have increased though workers are under staffed. To meet these expectations, employees are made to work long hours or run shifts to deal with the increased workload and this leaves them frustrated, unable to use their break; communication and socialisation is not possible due to workload and their raising concerns for keeping their job builds up over their working lives. Stress, however has been confused with challenges that arise from our day to day activities. The usual phrase "a little stress is good" can be associated with the description of challenges which in effect is beneficial to arouse the physiological and physical aspect of an individual to deal with situations that seem out of the norm. These usually result in developing new skills and to a larger extent, sharpen the acquired knowledge of an individual. When challenges at work are not met, it translates into a stressful situation (Sauter *et al*., 1998).

2.3.0 Stress Model

There are several models which elaborate on the concept of stress. It attempts to put into perspective the reasoning behind the word stress and provides a basis for a better understanding.

The diathesis–stress model is a psychological theory that explains behaviour as a pre-dispositional vulnerability together with stress from life experiences. It interacts with the subsequent stress response of an individual. In effect, the diathesis–stress model serves to explore how biological or genetic traits (*diatheses*) interact with environmental influences (*stressors*) to produce disorders, such as depression, anxiety, or schizophrenia. The diathesis–

stress model asserts that if the combination of the predisposition and the stress exceeds a threshold, the person will develop a disorder. The diathesis–stress model is used in many fields of psychology, specifically for studying the development of psychopathology. Diathesis–stress models can also assist in determining who will develop a disorder and who will not. For example, in the context of depression, the diathesis–stress model can help explain why Person A may become depressed while Person B does not, even when exposed to the same stressors. More recently, the diathesis–stress model has been used to explain why some individuals are more at risk for developing a disorder than others.

Stress can be conceptualized as a life event that disrupts the equilibrium of a person's life. For instance, a person may be vulnerable to become depressed, but will not develop depression unless he or she is exposed to a specific stress, which may trigger a depressive disorder. However, psychologists have also identified that not all individuals who are stressed, or go through stressful life events, develop a psychological disorder (Igngram et al, 2005; Ornel et al, 2013; Oatley et al, 2006; Lazarus R.S., 1993; Signelman & Rider, 2009).

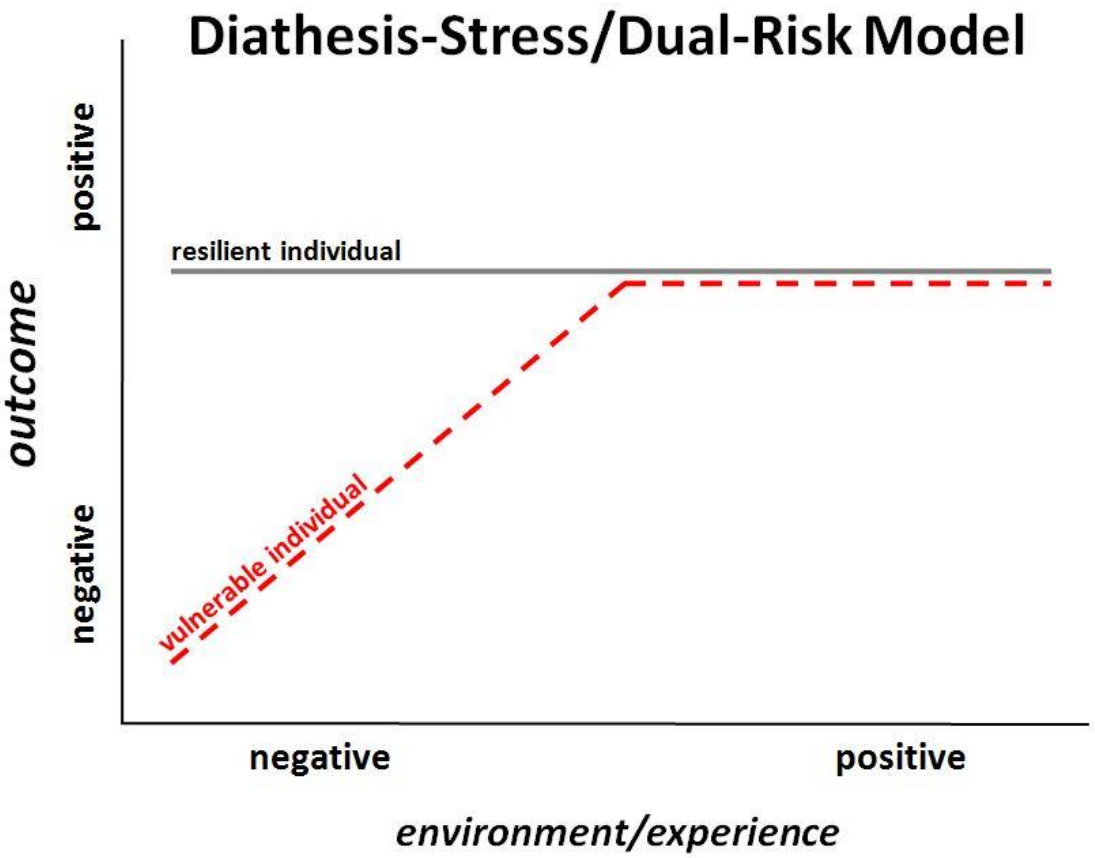


Figure 2.1: Diathesis – Stress model.

Sourse: Anon - Journal of Stress Management.

2.3.1 Stress as a Response

Stress as a response model, initially introduced by Hans Selye (1956), describes stress as a physiological response pattern. This model describes stress as a dependent variable and includes three concepts:

1. Stress is a defensive mechanism.

2. Stress follows the three stages of *alarm*, *resistance*, and *exhaustion.*

3. If the stress is prolonged or severe, it could result in diseases of adaptation or even death.

In 1973, Selye Hans conducted a research on laboratory animal to reveal the chemical reactions that occur when they were exposed to external / physical stressor.

- **Alarm stage**

When the body is first faced with an agent who is foreign to it, it goes into a state best described as “call to arm” which in effect puts the body in a defensive state. The adrenal cortex discharges its secretory granules into the bloodstream and becomes depleted of the corticoid-containing lipid storage materials.

Stress sets off an alarm in the brain, which responds by preparing the body for defensive action. This response (sometimes called the fight or flight response) is important because it helps us defend against threatening situations. The response is pre-programmed biologically. Everyone responds in much the same way, regardless of whether the stressful situation is at work or home (Sauter et al, 1998).

- **Resistance stage**

Many stress researchers agree that the body has a finite adaptive energy to deal with stress. The body transforms into the resistance stage as it tries to adapt to the constant presence of the stressors daily. In other words, no one stays in the state of alarm forever unless the agent is so drastic that its continuous presence leads to death within the first hours or days of the body’s exposure. The body in this stage strives to ensure equilibrium in the somatic response to this stress. However when there is disequilibrium, it becomes harmful (Gary W.E., 1982)

❖ **Exhaustion stage**

The un-bearing presence of the noxious agent forces the body into exhaustion. Resistance to a noxious agent or stressor does not go on indefinitely. If somatic defence becomes depleted exhaustion occurs and the body loses its capacity to withstand the adverse effect of stress (Gary W.E., 1982).

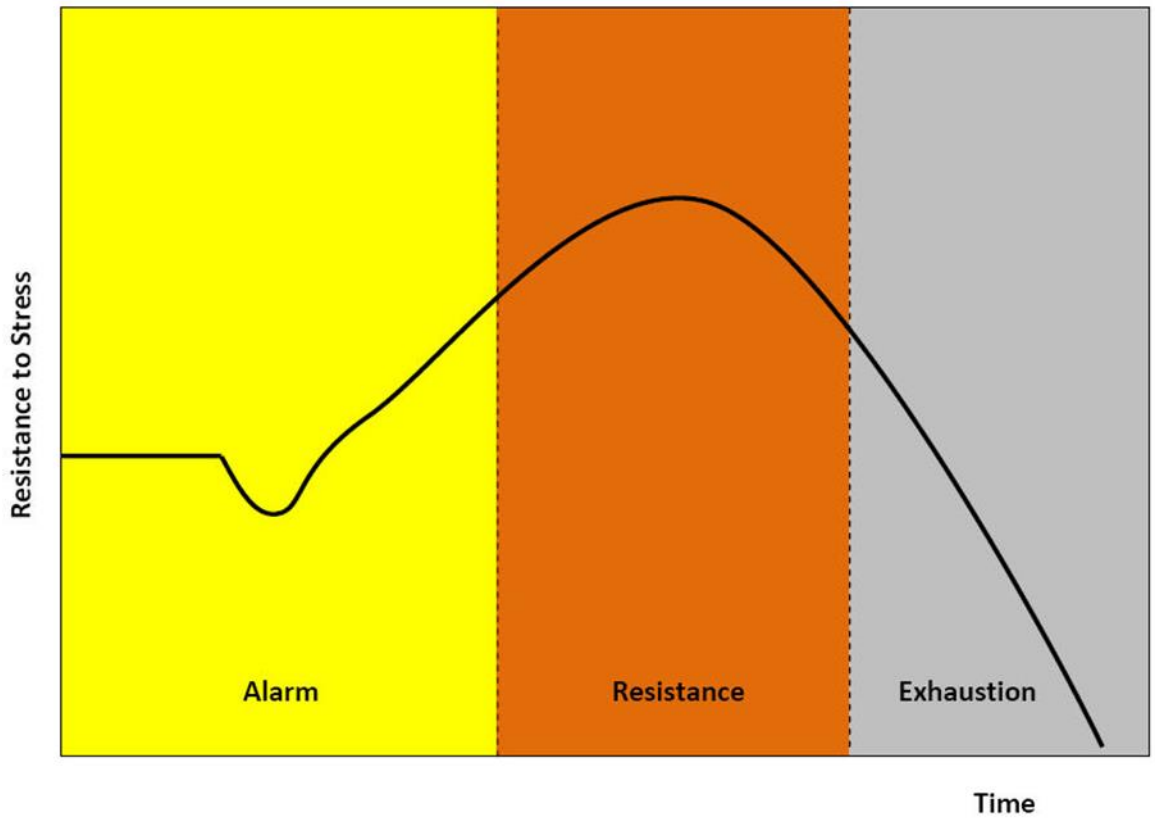


Figure 2.2: General Adaptation to Stress (GAS) Model

Source: Jennifer Walinga, 2008

2.3.2 Stress as Stimulus

Stress is a significant life event or change that demands response, adjustment or adaptation. The stress as stimulus theory assumes that:

1. Change is inherently stressful
2. Life events demand the same levels of adjustment across the population
3. There is a common threshold of adjustment beyond which illness will result

The human being is suggested to be a passive recipient of stress and has no role in determining the degree or intensity of the stressor. Holmes and Rahe concluded from their research that, stress is the cause of an experience rather than the experience itself hence stress is an independent variable.

However, it is argued that this theory ignored the important variables such as prior learning, environment, support network, personality and life experience (Walinga, 2008).

2.3.3 Stress as a Transaction

Stress is a transaction between a person and his/her complex environment. This theory was propounded from the concept of hardiness. Hardiness is a personality characteristic that differentiates people who remain healthy under life stress from those who develop health problems (Kobasa et al, 1985). The concept has bearing on locus of control, sense of coherence, self-efficacy and dispositional optimism (Rotter, 1966; Antonousky, 1987; Bandura, 1997; Scheier and Carver, 1985).

From this research, the nature of stress was described as; acute, episodic or intermittent and chronic.

Acute stress (short term) results from events, pressures, and demands of the recent past and anticipated in the near future. Episodic stress (frequent) is acute stress that occurs frequently. This type of stress is common in people whose lives are extremely busy or disorganized, and in those who tend to worry excessively. Short-lived or infrequent episodes of stress pose little risk. But when stressful situations go unresolved, the body is kept in a constant state of activation, which increases the rate of wear and tear to biological systems. Ultimately, fatigue or damage results, and the ability of the body to repair and defend itself can become seriously compromised. As a result, the risk of injury or disease escalates (Sauter et al, 1998). Chronic stress (long term) however is a serious condition, it occurs when a stressful situation is prolonged and continuous, often causes severe physical and emotional symptoms (American Psychological Association, 2016).

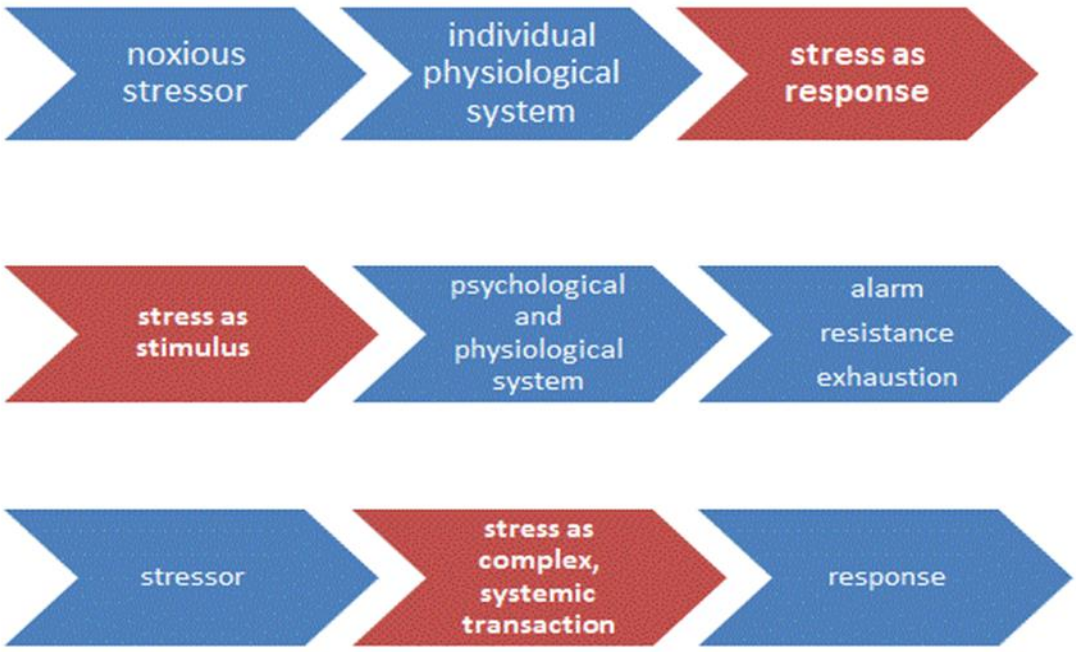


Figure 2.3: Theories of stress as response, stimulus, and transaction

Source: Jennifer Walinga, 2008

2.4 TYPES OF STRESS

Stress is inevitable in nature. Whatever one does, there is an element of stress produced. However, not all stress reactions are equal. Stress reactions can be beneficial (Positive) or harmful (Negative) based on cognitive and emotional factors (Rahe &Arthur, 1978).

Positive stress also known as good stress elicits responses that motivate, inspire, promote enthusiasm and improve assignment performance. In contrast, Negative stresses bring about bad consequences and these include anxiety, depression, social dysfunction and suicidal intention (Ongori & Evans, 2008; Ahmed & Ramzan, 2013).

2.6 SOURCE OF STRESS.

Stressors are factors or agents that trigger the stress response. A stress response can be justified only when several of different types of stressors produce the same biological stress effect (Selye, 1973.) The knowledge of stressors and their source is a great stride in coping with or preventing stress.

I. Physical /Environmental stressor

Stress can be said to be a process central to the relationship between human and their surroundings. Noise (Cohen, 1981), heat and cold (Hancock, 1984) are examples of environmental stressors that explain the unexplainable behaviours of persons and underpins the human –environmental interaction that produce stress. Unpleasant or dangerous physical conditions such as crowding, noise, air pollution, or ergonomic problems were identified as environmental stressors by NIOSH research. In addition to that, role overload, ambiguity, lack of support from managers and colleagues and lack of job security are stressors that reduce employees satisfaction of their job and can result in an employee experiencing anger

and frustration toward persons believed responsible for the overload in work (Alexandros-Stamatios et. al., 2003; Osipow et al, 1998; Marini et al., 1995). Causes of job stress include perceived loss of job and security, sitting for long periods of time or heavy lifting, lack of safety, complexity of repetitiveness and lack of autonomy in the job (Ongori and Evans, 2008). Occupational stress often shows high dissatisfaction among the employees, job mobility, burnout, poor work performance and less effective interpersonal relations at work (Manshor et al, 2003).

II. Psychological stressor

The knowledge of individual's cognitive interpretation of environmental stressors comes to play in determining if a particular stressor is harmful or will require somatic response. Individual's attitude about stressor, prior experience with it, knowledge of its cost and evaluation of alternative course of action influence the coping strategy to the stressor. Example, if an individual perceive a stressor to be mild, short lived and not harmful, he/she can psychologically ameliorate any adverse effect (Cohen, 1981). Occupational stressors and the performance of employees in an organization can affect the employees psychologically (Beehr et al., 2000).

A random sample of 305 blue-collar and 325 managerial workers in Canadian firm surveyed with variables of job stress, job performance, and organizational commitment revealed a negative linear relationship between job stress and job performance (Jamal M., 1984). In as much as situational factor may intensify the effects of stressful working conditions, individual and situational factors that can help to reduce the effects of stressful working conditions include, balance between work and family or personal life, a support network of friends and co-workers and a relaxed and positive outlook (Sauter et al, 1998).

A high strain job which is characterised by combination of high job demand and low control leaves workers frustrated and unproductive while task enjoyment, learning, and personal growth will be highest in jobs characterized by the combination of high job demands and high job control (Bakker et al, 2010).

Furthermore, a survey by Al-alawi, A.I. & Al-alawi, E.I., (2014) among management information systems (MIS) workers and users in the financial services sector, measuring their occupational stress suggested that over a third of MIS users in banks reported that their jobs were highly stressful. The bankers are exposed to high job stressors such as job design (overload, long working hours, deadlines and time pressure, repetitive task and lack of variety, and shortages of staff); and career development (under promotion and working at a level below their level of abilities and skills) .

III. Chemical /Physiological stressor

Physiological stressors include rapid growth of adolescence, menopause, illness, aging, giving birth, accidents, lack of exercise, poor nutrition, and sleep disturbances (Cohen, 1981). These stressors elicit responses that compromise the body's equilibrium of reaction.

Two studies conducted to test the hypotheses that individuals with a somatic response pattern would experience a higher frequency of physical symptoms, experience greater sleep disturbance and utilize an available health service facility more frequently among *Ss*' senior year in college and *Ss*' freshman year support the hypotheses that somatic response to stress is associated with a greater frequency of physical symptoms, sleep disturbance and health service use (Frost et al, 1986).

2.6 Stress, Health and Illness

Organizational changes leading to increase in shifts, weekend work, part time and over time work and general intensification of work accounts for the increase in job stress worldwide. Managers are tasked to ensure that employees put out their best to achieve company's goal by increasing workload. Workload has been identified to be the leading cause of stress among Winneba University lecturers with chronic back ache as an immediate effect (Kwaku E., 2012). Exhaustion and negative attitude such as workers cutting in sick to get a break from work underpins workers strategy to cope with stressful job. In 2014/15, stress accounted for 35% of all work related ill health cases and 43% of all working days lost due to ill health as reported by the Labour force survey, Great Britain.

Many studies have looked at the relationship between job stress and a variety of ailments. Mood and sleep disturbances, upset stomach and headache, and disturbed relationships with family and friends are examples of stress-related problems that are quick to develop and are easily noticed. But the effects of job stress on chronic diseases are more difficult to see because chronic diseases take a long time to develop and can be influenced by many other factors. National Institute for Occupational Safety and Health (NIOSH) suggests that though it is difficult to draw a link between job stress and the risk of chronic disease because it takes time to develop, current evidence is pointing to this relationship, thus, job stress causing diseases such as cardiovascular disease, musculoskeletal disorders, and psychological disorders. Persistent job stress at work place is also a cause of injuries, suicide, ulcer, cancers and impaired immune functions.

Early warning signs of stress are headache, sleep disturbances, difficulty in concentrating, short temper, upset stomach, job dissatisfaction and low morale (Sauter et al, 1998). This is the basis for the development of stress assessment questionnaire for workers to determine

their somatic response to stressors and thereby assess their current stress level upon which relevant recommendations will be given to avert potential damage to health.

Stress is more prevalent in public service industries, such as education, health and social care and public administration and defence. Nearly 80% of Non-Communicable Disease (NCD) deaths occur in developing countries. NCDs are rising rapidly and are projected to exceed communicable diseases, maternal and perinatal death as the most common causes of death by 2030 (WHO, 2010). The experience of stress at work contributes to ill health in at least two ways. First, stress is associated with changes in attitude and behaviours, which contribute to the maintenance of a health state. This may be manifested either by inhibiting health-promoting behaviours such as exercise, entertainment and relaxation, and by increasing health threatening behaviours such as smoking and excessive alcohol consumption. Secondly, responses to stress may interfere with normal physiological function, inhibiting the body's natural defences or promoting pathogenic change (Simpson, 2000).

A research conducted by global workplace provider in Ghana shows that 75% of workers say the economy has caused increase pressure on them making them suffer more stress related illness. However, 84% believe that flexible working conditions are critical to help ease this work related stress. A striking finding from this study points out that 30% of Ghanaian workers have sleepless nights wondering about their work (Anon -News Ghana, 2013). Studies show that stressful working conditions are actually associated with increased absenteeism, tardiness and intention to quit job (Jayashere R., 1988)

NIOSH research has identified that, recognition of employees for good work performance, opportunities for career development, an organizational culture that values the individual worker and management actions that are consistent with organizational values are associated with healthy, low-stress work and high levels of productivity.

2.7 Coping with stress

There are many ways that people strive to cope with stressors and feelings of stress in their lives. Many techniques are available to help individuals cope with the stresses that life brings. Stress management techniques are more general and range from cognitive (mindfulness, cognitive therapy, meditation) to physical (yoga, art, natural medicine, deep breathing) to environmental (spa visits, music, pets, nature) – walinga (2008).

The appraisal literature explains the response or coping process in terms of problem-focused coping or emotion-focused coping (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984), also referred to as active and passive coping styles (Jex et al, 2001).

How an individual appraises a stressor determines how he or she copes with or responds to the stressor. Whether or not a stressor is experienced as discomforting is influenced by a variety of personal and contextual factors including capacities, skills and abilities, constraints, resources, and norms (Mechanic, 1978). Lazarus and Folkman (1984) unpacked the concept of interpretation further in their model of stress appraisal, which includes primary, secondary, and reappraisal components.

Primary appraisal involves determining whether the stressor poses a threat.

Secondary appraisal involves the individual's evaluation of the resources or coping strategies at his or her disposal for addressing any perceived threats.

The process of reappraisal is on-going and involves continually reappraising both the nature of the stressor and the resources available for responding to the stressor (walinga, 2008).

The adaptive process comprises all forms of activities undertaken by a person in a situation of stress. This process is dependent on situational and individual factors. Styles and strategies of coping in difficult situations are made up of individual factors. Just as situational factors are

an essential context of the choice of a coping strategy, the style of coping is a relatively permanent predisposition of an individual – a set of strategies and ways of overcoming stress in life characteristic for a given person (Katarzyna et al, 2013).

Stress is inevitable and when it is realised as such, its management is less expensive and practical, hence the term preventive stress management.

The guiding principles, which constitute the central element in the philosophy of preventive stress management, are as follows:

(a) Individual and organizational health are interdependent;

(b) Leaders have a responsibility for individual and organizational health;

(c) Individual and organizational distress are not inevitable;

(d) Each individual and organization reacts uniquely to stress; and

(e) Organizations are ever-changing, dynamic entities.

Preventive stress management aims at promoting individual and organizational health and minimizing individual and organizational distress, as manifested in a variety of asymptomatic and symptomatic diseases (Quick et al, 1997).

Coping with stress is found to have positive outcome on individuals' health and relationship. Being optimistic in managing stress is the first step in alleviating and dealing with the stress in one's life (Walinga, 2008)

2.8 Quality of Family Life

Quality of life is culturally dependent. For example in some cultures quality of life is associated with the degree of satisfaction with material needs while in other cultures it is measured by the degree to which people succeed in subduing and reducing their material needs. One of the facets of quality of life is family life. Individuals view their primary loyalty to be towards their parents, relatives or clan. Their life fulfilments depend on living up to that loyalty. In such a society, a high quality job is one allowing individuals to fulfil obligations to their family and a high quality life is defined much more in family and group (Hofstede, 1984). Reproduction is necessary for the perpetuation of society and in a society as ours, where reproduction is left to the personal whims of individuals and where children are economic burden, potential parents in bid of surmounting any financial problems take up jobs in preparation for their reproductive roles.

Contemporary workers these days are faced with structural lag in the interface between their work and family roles. Increasing numbers of workers experience both workplace and domestic responsibilities. In addition, the involvement of women into the labour force in the second half of 20th century has created another period of structural lag. Families are besieged with internal and external stressors which invariably results in increased divorced rates, number of reconstituted families and labour force participation of mothers. Current theories establish that quality of family life and the level of social support are crucial for the resilience of the family in the light of stress (Lloyd et al, 1988).

The most emotionally charged area of human existence is our relationship with our family precisely our children. Great emotional investments are placed on our offspring and anticipated returns are high indeed. The meaning and value assigned to parental role has

fluctuated due to the various social, economic and political developments over the previous decade (Goetting A., 1986).

Additional stress which is associated with our current social structure has made parenting much difficult. Consider for example the trend in increase report of child neglect and abuse in the United Nation (U.S. Department of Justice 1983) which reflects the extreme “iceberg tip” of parental disillusionment.

In bid to explore components of midlife parental satisfaction using the parent-focal child information, Mitchell (2010) found that income satisfaction, emotional closeness to the study child, parents’ main activity (e.g., paid work, retired, or other), health, age, ethnic background, and perceptions of how children “turn out” influence midlife Canadian parents’ subjective levels of satisfaction. Parenting is a job on its own and requires all attentions, skills and intelligence to run it successfully. The working class hereby is left in a state of confusion and helplessness in this regard. The stress at work coupled with having to manage the family is a hard nut to crack.

Caregivers can feel overwhelmed by the responsibilities that come with providing care to a family member. They report significantly higher levels of stress than the general population and believe they are doing a poor job of managing and preventing their stress, and perceive themselves to be in poor health (America psychological association, 2016).

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter generally considers the methodology adopted in the design of the questionnaire, sampling of respondents and collection of data, data management and analysis. The profile of the study area is presented.

3.2 Research Design

This is an exploratory cross-sectional questionnaire survey conducted among a non-representative sample of staff of banks in Accra Ghana.

3.3. Research setting

The survey was conducted among staff of banks in major commercial areas of Accra. These are the Central Business City and Spintex Road to the East of the city. Accra is the capital of Ghana and a city of 4 million people. The main administrative and business district runs north from the coastline and the coastal forts of Jamestown and Usher town, the city's original settlements although many government and administrative offices and embassies are found in other parts of city. The climate in Accra is largely hot and humid.

It is reported that Accra plays host to 1,547 million visitors from other part of the country daily. Out of this number, about 70% remain in the city. The majority of migrants are attracted by the commercial and cosmopolitan characteristics of the city.

The commercial areas of Accra are generally considered to be congested. Several sources of stress confront the inhabitants of Accra. These include pressure of accommodation facilities, enormous traffic, and high levels of unemployment, social vices and crime.

The areas around Spintex, Nungua and Tema, all suburbs of the city of Accra are residential areas that have attractive new housing developing. The traffic problems and rapid development tend to overshadow the fact that empty land still abounds in these three towns and that the areas where expatriates live and work are quite green. With main roads of rare quality in Africa, easily identifiable neighbourhoods and a reasonable population density, these towns cannot be considered as difficult or oppressive. Additionally, the number or suitable residential areas is not as limited as in many other developing countries and include traditional expatriate areas, new residential or improved areas and more affordable ones.

Traffic congestion is a major part of life in Accra. It influences the times that people working in the city wake and set off to work. It is reported that people who live in the outskirts of the city often have to wake as early as 4.00a.m, if they are to make it to work in the commercial areas of the city. The majority of offices on the commercial districts in Accra open between 8.00 and 8.30a.m, each morning, with slight variations on Saturdays and often complete closure on Sundays.

3.4.1 Data Collection Tool

PRO MIND stress assessment questionnaire, developed from the book; Adrenalin and Stress by Archibald D. Hart was used for this study. It contained 20 questions with a scale from zero to three (0-3). This gives a total sum of 60 highest level of stress that can be experienced. This stress assessment scale has its interpretation that enabled me to categorize the level of stress of respondents.

The questions were pretested in three different banks in Nungua since they bear similar characteristics of banks in Accra. This enabled me to revise the questions and also know the time required to answer the questions. A total of 15 minutes is required to successfully complete the questionnaire. The questionnaire contained open and closed-ended questions and were divided into various sections to capture the critical areas spelt out in the objectives for the study.

Section one: Socio-Demographic Data; Section two: Lifestyle and Section three: Perceived Stress Level. The questionnaires were self-administered. The questions were in very simple English language tense for easy understanding of respondents and to ensure the genuineness of their responses. Two research assistants were trained to assist in the distribution and collection of data.

3.4.2 Data Collection Technique

Random sampling was used in selecting Banks for the study. Introductory letters from the school were given to the Operations/Customer care manager (OM/CM) and a brief insight into the aim and relevance of the study to the staffs were discussed with the managers. When given the nod to proceed with the survey, questionnaires were distributed to participants by

the OM/CM after they were briefed on what the research seek to uncover using a convenient sampling technique. They endeavoured to obtain equal numbers of males and females for the study. This technique helped to select the participants from different department in the banks as well as provide opportunity for staffs to freely join the study.

However, questionnaires were distributed to all senior staff present in the banks. The population comprised of all staff of banks from top management to lower level staff. They are all included in order to get the level of stress of employees at all levels since the work load differs at each level. Frequent reminders were sent to the OM/CM by the research assistants to speed up the answering process. Upon completion of the questionnaires the research assistants go to pick it up and hand it over to me for data entry.

3.4.3 Sample Size and Justification

The target number of respondents was determined more by financial and time constraints. I targeted to enrol 400 staffs within the context of a larger project, 700 bank staff across Banks in the two commercial districts. This sample was to afford determine the prevalence of stress using the stress assessment scale within a margin of error of 3.7% at 95% confidence level, given that the total number of Bank staff in the City to be about 5000 and the best estimate of prevalence of stress is 50% (selected in the absence of data and to achieve maximum variance). The target includes a factored non-response rate of 10%.

3.5 Pre-testing

The questionnaire was pre-tested in Banks located outside of the study area but which had characteristics as those in the commercial districts. The objectives were to test the accuracy of the questions to elicit the intended result as well as ascertain the duration needed for completion of the questionnaire.

3.6 Data Handling

Data entry was done using Stata version 14. Data from the completed questionnaire was checked for double entry and consistency. The items in the questionnaire were grouped based on the responses given by the respondents and coded for easy usage of STATA.

3.8 Data Analysis

Stata version 14 and Microsoft Excel 2010 was used to analyse the data collected. Tables and other statistical inferences were made from the data gathered. Representations like pie charts and bar charts were used to ensure easy and quick interpretation of data. Responses were also expressed in percentages.

The data was analysed in consonance with the set objectives of the study.

3.8 Sampling Variables

The dependent variable (response variable) is the level of stress experienced by the staffs of bank while the independent variables are lifestyle and physical activity level.

3.11Ethical Consideration

Consent was sort from the review board of the university and introductory letters were handed to me to formally introduce me to the banks for permission to undertake the study. Written Informed consent was also given to respondents who took part in the study. Some staff opted to complete the questionnaire without signing the consent form because the consent form required them to write their names, which they did not want to do.

3.12 Limitations of the study

There was a response rate of 92.3% (369/400). This was realised as a result of the research assistants' persistent visit to the banks as well as phone calls to the OM/CM after the questionnaires were distributed. The non-response rate of 7.7% is not desirable since invariably, staffs that did not return their questionnaires were those who have the characteristics the study sort to explore.

3.13 Assumptions

I assume that stress will be highest in workers in the two commercial districts and this sample of respondents will be generalizable to banks in the Greater Accra Region.

CHAPTER 4

RESULTS

4.0 Introduction

A total of Four Hundred (400) questionnaires were sent to twenty-nine prospective banks. The overall response rate was 92.3% (369/400). The result from the twenty-nine banks were combined together to establish an overall impression of stress experienced by staff working in banks.

4.1 Personal Profile and stress related data

As shown in figure 01, the majority of bankers who completed the survey were females. The mean age of respondents is 27years with a standard deviation (SD) of 2.3. The median age is 27years with 25^{th} and 75^{th} interquartile of 25years and 29years respectively. Table -01 and table -02 further shows that of the majority, 52% of staff that were females, 51% (n=187) were below 27years while 49% (n= 182) were 27years to 30years old. Of those who were below 27 years, 48% are females while among those 27 to 30 years, 57% are females.

As demonstrated in Figure-02, majority of the staff are Akans with Ewes and Ga/Adamgbe being second highest with few respondents who were Dagbanis, Grusi and non-Ghanaian. Majority of the staff were Christians with Non-Christians' being dominated by Muslim. Figure-03 exemplify that there were more singles among the staff that were studied compared to the married and very few numbers who were cohabiting, divorced or widowed while majority of the staff had tertiary education. Figure-04 and figure-05 demonstrates that majority of the staff had no child/dependants under 12years and under 5years with few having only one (1) children under these age brackets.

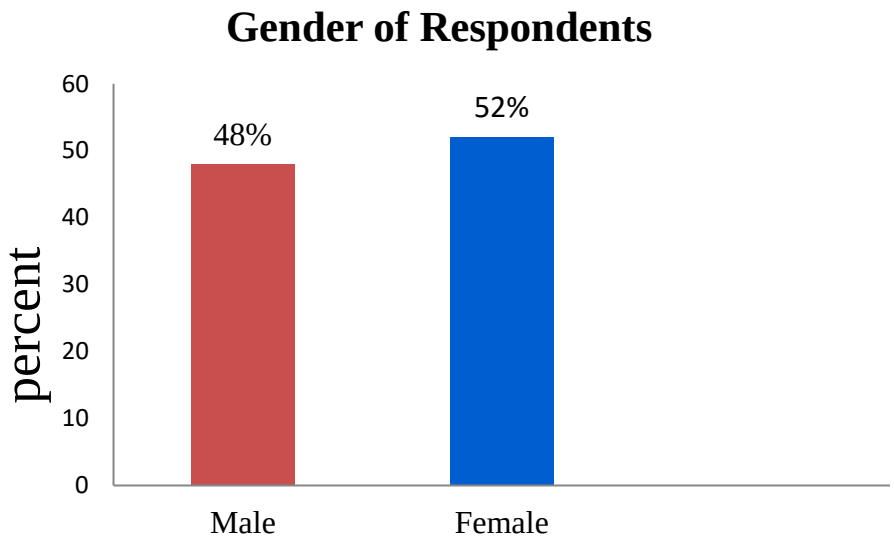


Figure 01: Gender of Respondents

Source: Field Survey, 2017

Table -01: Age distribution

Age	**Frequency**	**Percentage (%)**
Below 27 years	187	51
27 years to 30 years	182	49
Total	369	100

Table -02: Age and Gender

Age	Gender		Total
	Male	Female	
Below 27 years	52% (98)	48%(89)	100(187)
27 years to 30 years	43%(78)	57%(104)	100(182)

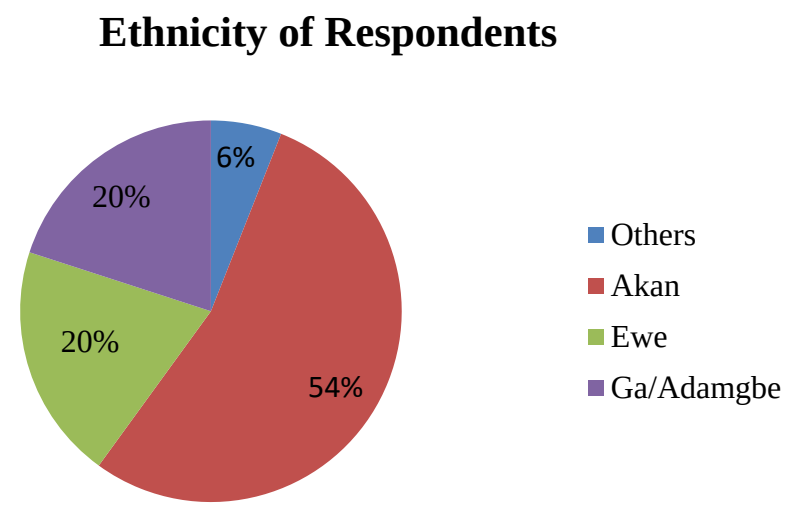


Figure 02: Ethnicity of Respondents

Source: Field Survey, 2017

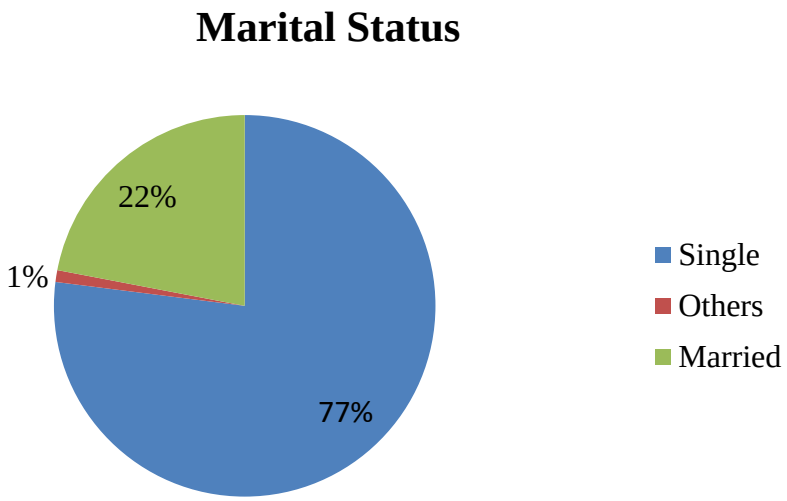


Figure 03: Marital Status of Respondents

Source: field Survey, 2017

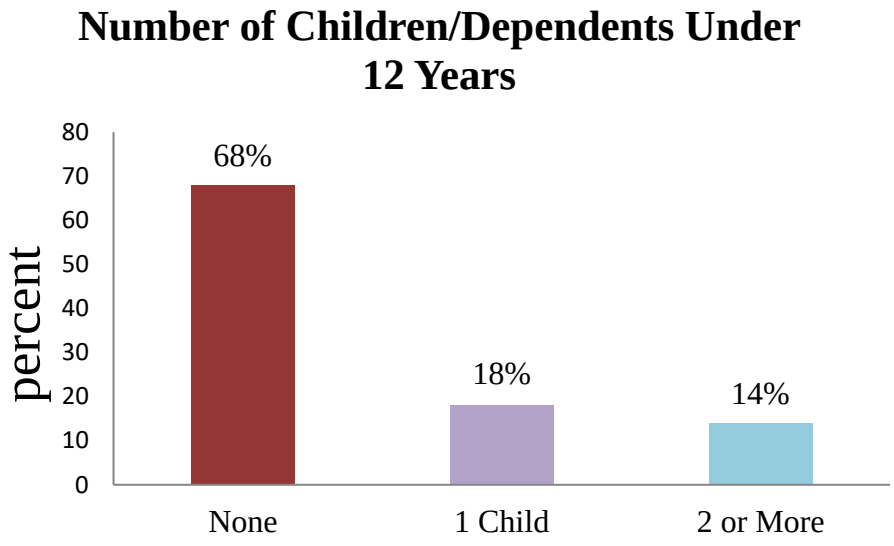


Figure 04: Number of Children/Dependants under 12years

Source: Field Survey, 2017

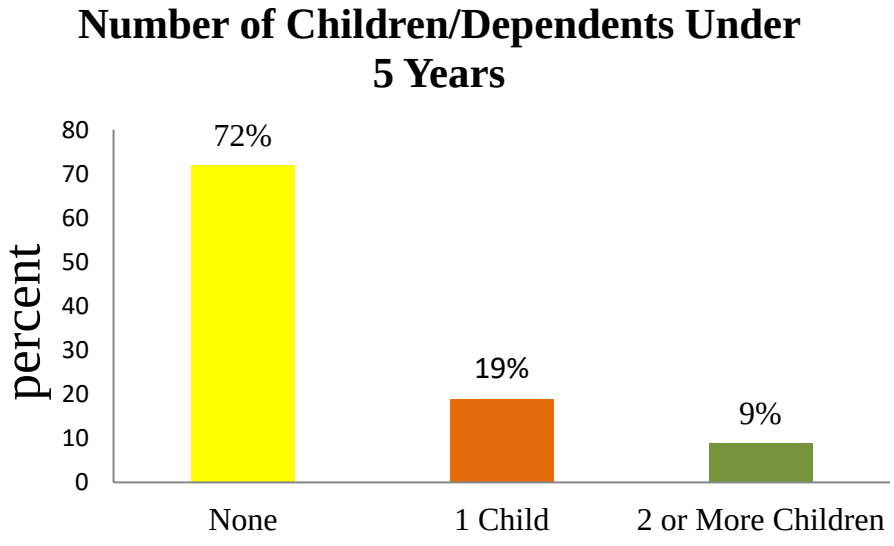


Figure 05: Number of Children/Dependants under 5years

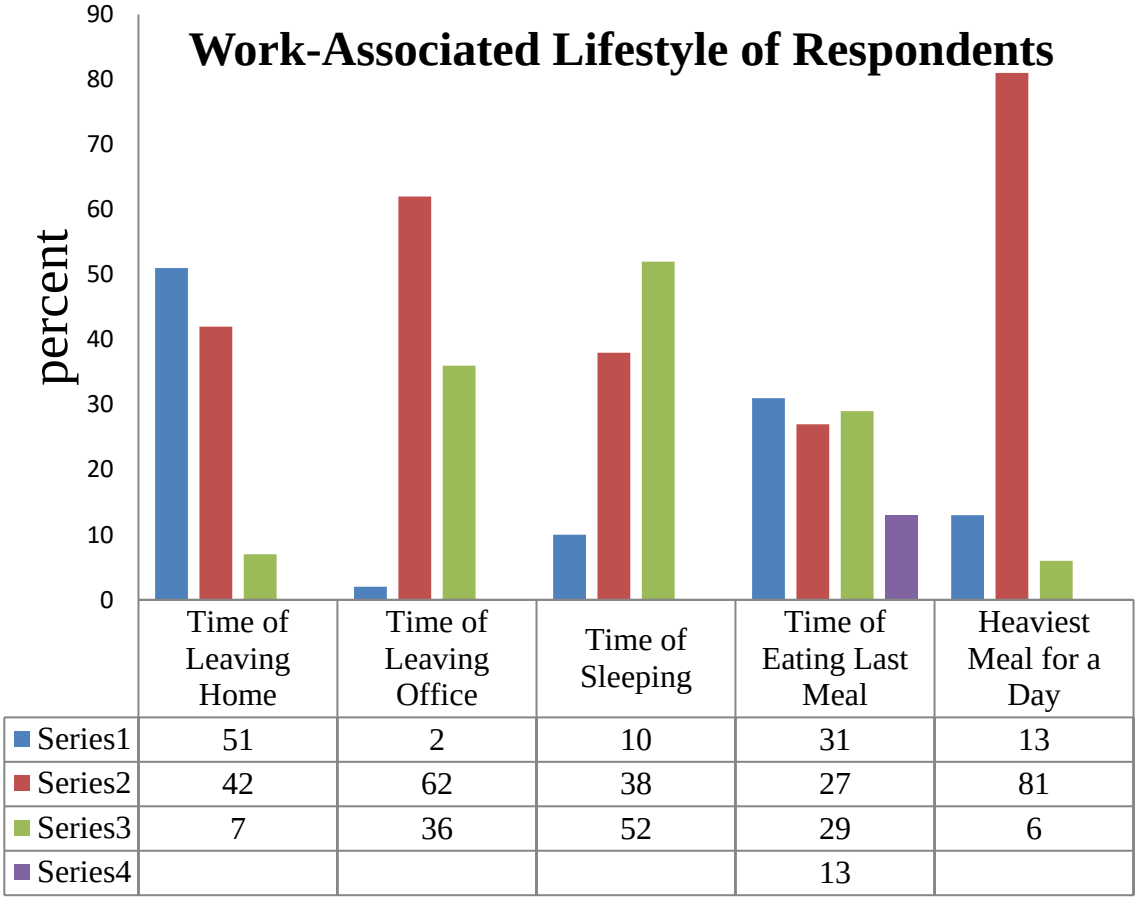
Source: Field Survey, 2017

4.2 Lifestyle of Respondents

The study sort to determine the lifestyle of staff of banks that is influenced by their occupation.

Following the survey, majority of staff of banks leave home to work before the hour of 6 in the morning with very few leaving home after the hours of 7am. The time respondents leave office is mostly within the hours of 5 and 6 in the evening. Majority of the staff retire to bed after 10pm when they arrive home while few sleep earlier than 9pm.The heaviest meal of the day is eaten most often during lunch. A few of the respondents eat within the hours of 6 and 7pm, with majority (42%) consuming their last meal after 7pm

Figure 06 illustrates this finding.



	Time of Leaving Home	Time of Leaving Office	Time of Sleeping	Time of Eating Last Meal	Heaviest Meal for a Day
Series1	51	2	10	31	13
Series2	42	62	38	27	81
Series3	7	36	52	29	6
Series4				13	

Figure 06: Work-Associated Lifestyle of Respondents

Source: Field Survey, 2017

Table 03: Common Symptoms Experienced by Respondents

		Number/Percentage of Respondents experiencing Stress Symptoms			
	Symptoms of stress	**I have never experienced this symptoms**	**I suffer from it sometimes(about / month)**	**I have suffered from it more than once /month but not more than once a week**	**I often suffer from it(more than once per week)**
1	Do you Often have headaches	82(23%)	201(55%)	45(12%)	38(10)
2	Do you suffer from tension or stiffness in the neck, shoulders, jaw, arms, hand, legs or stomach	174(48%)	127(35%)	42(11%)	23(6%)
3	Do you have nervous twitches	254(70%)	83(23%)	21(6%)	6(1%)
4	Do you feel your heart beating stronger or faster than usual sometimes	192(53%)	136(37%)	24(7%)	12(3%)
5	Do you have abnormal heart beats	241(66%)	97(27%)	21(6%)	5(1%)
6	Do you sometimes have difficulty breathing	267(73%)	71(19%)	24(7%)	5(1%)
7	Do you suffer sometimes from dizziness or light-headedness	163(44%)	154(42%)	34(9%)	16(5%)
8	Do you feel like you have a lump in your throat or having to clear it	226(62%)	108(30%)	26(7%)	6(1%)
9	Do you often suffer from flu, hoarseness	164(45%)	161(44%)	28(8%)	12(3%)
10	Do you often suffer from indigestion, nausea, stomach-ache	148(41%)	159(43%)	42(11%)	17(5%)
11	Do you often suffer from diarrhoea, constipation?	166(45%)	144(40%)	39(11%)	15(4%)
12	Do you bite your nails?	197(54%)	105(29%)	17(5%)	44(12%)
13	Do you have difficulty falling asleep, or sleeping for a whole night?	187(52%)	114(31%)	40(11%)	22(6%)
14	Do you feel tired in the morning?	90(25%)	172(47%)	58(16%)	43(12%)
15	Do you have your hands or feet cold?	249(69%)	87(24%)	19(5%)	7(2%)
16	Do your teeth tend to gnash? Do your jaws hurt?	296(81%)	50(14%)	14(4%)	4(1%)
17	Do you tend to sweat a lot?	155(43%)	125(35%)	40(11%)	1(11%)
18	Are you irritable or angry?	167(47%)	141(39%)	27(7%)	24(7%)
19	Do you have any pains (back, stomach, head, muscle)?	113(31%)	158(44%)	49(14%)	40(11%)
20	Do you think you might be suffering from anxiety, worry, agitation, nervousness?	178(50%)	130(37%)	29(8%)	19(5%)

More than half of the respondents (55%) agree to suffering from headaches (about once per month). Majority of staff do not experience abnormal heartbeats and do not have difficulty falling asleep. However, close to half of the respondents (47%) feel tired in the morning hence feel pains in the back, stomach, head and muscle.

Most of the staffs are not irritable and do not think they might be suffering from anxiety, worry, agitation or nervousness.

Table-04: Stress Level

Stress Level	**Frequency**	**Percentage (%)**
Normal	295	80%
Average	74	20%
Total	369	100

Less than a third of respondents are stressed (based on the sum total of 60 marks obtained from the 20 stress questions. A 20 mark and below is associated with a normal stress level).

Table-05: Relationship between Demographic background and Stress Level

Variable	**Stress**			**OR(95%CI)**	**P-Value**
	Category	**Normal**	**Average**		
Gender	Female	156(80.8%)	37(19.2%)	0.89(0.53 - 1.49)	0.657
	Male	139(79%)	37(21%)		
Age	<27years	148(81.3%)	34(18.7%)	0.84(0.51 - 1.41)	0.516
	>27years	147(78.6%)	40(21.4%)		
Ethnicity	Ga/Adamgbe	56(76.7%)	17(23.3%)	1.32(0.69 - 2.54)	0.512
	Ewe	61(81.3%)	14(18.7%)	0.999(0.50 - 1.98)	
	Others	16(72.7%)	6(27.3%)	1.63 (0.60- 4.47)	
	Akans	161(81.3%)	37(18.7%)		
Religion	Muslim	11(78.6%)	3(21.4%)	1.09(0.30 - 4.02)	0.896
	Christian	280(80%)	70(20%)		
Marital Status	Single	220(77.8%)	63(22.3%)	1.77(0.88 - 3.56)	0.11
	Married	68(86.1%)	11(13.9%)		
Education	Tertiary	281(79.4%)	73(20.6%)		
	Secondary	13(100%)			
Number of Children /dependents<12 years	1 child	42(91.3%)	4(8.7%)	0.34(0.11 - 1.01)	0.77
	>2 child	25(69.4%)	11(30.6%)	1.56(0.70 - 3.46)	
	No child	138(78%)	39(22%)		
Number of Children/dependents<5years	1 child	42(84%)	8(16%)	0.73(0.32 - 1.68)	0.37
	>2 children	15(65.2%)	8(34.8%)	2.04(0.80 -5.19)	
	No child	149(79.3%)	39(20.7%)		

Out of 369 respondents who completed the questionnaire, there is an insignificant association between gender and level of stress experienced (p=0.66). Females however, are 0.8(95%CI: 0.53 - 1.49) times less likely to be stressed relative to males. Statistically insignificant differences are found between respondents that are below 27years of age and 27years to 30years on age (p=0.52). Respondents that are less than 27 years are 0.8 times less likely to be stressed.

Ewes, in comparison with Ga/Adamgbes , Akans (reference category) and other tribes are 0.99(95%CI: 0.50 - 1.98) times less likely to be stressed(p=0.51).

Muslims though statistically insignificant, are 1.09(95%CI: 0.30 - 4.02) times more likely to stressed compared with Christians (p=0.90).

Comparison between married and single reveals a non- significant improvement in levels of stressed experienced among staff of banks that are married (p=0.11). Single staffs are 1.8 times more likely to be stressed compared to the married.

Respondents with 2 or more children/dependents under age 12 are 1.56(95%CI: 0.70 - 3.46) times more likely to be stressed than those who have 1 child/respondents with staff with no children as the reference category (p=0.77).

In comparing those who have I child/dependent and 2 or more children/dependents under the age of 5 with those who have no children (reference category), staff with 1 child/dependent are 0.7(95%CI; 0.315 - 1.681) times less risk of being stressed than it is for those with 2 or more children/dependents.

Table -06: Relationship between Lifestyle and Stress

Variable	Stress			OR(95%CI)	P-Value
	Category	Normal	Average		
When Respondents leave home	Between 6am-7am	128(83.7%)	25(16.3%)	0.63(0.36 - 1.09)	0.14
	After 7am	23(82.1%)	5(17.9%)	0.70(0.25 - 1.96)	
	Earlier than 6am	142(76.3%)	44(23.7%)		
When Respondents leave office	Between 5pm-7pm	181(80.4%)	44(19.6%)	1.46(0.17 - 12.49)	0.54
	After 7pm	104(78.2%)	29(21.8%)	1.673(0.192 -14.60)	
	Earlier than 5pm	6(85.7%)	1(14.3%)		
When Respondents go to bed	Between 9pm-10pm	116(84.1%)	22(15.9%)	0.664(0.266 - 1.654)	0.395
	After 10pm	149(77.2%)	44(22.8%)	1.03(0.44 - 2.43)	
	Earlier than 9pm	28(77.8%)	8(22.2%)		
Time Respondents eat last meal	Between 6pm-7pm	81(81%)	19(19%)	1.21(0.59 - 2.47)	0.02
	Between 7pm-8pm	85(81.7%)	19(18.3%)	1.16(0.57 - 2.35)	
	After 8pm	30(62.5%)	18(37.5%)	3.10(1.40 - 6.88)	
	Before 6pm	93(83.8%)	18(16.2%)		
Heaviest Meal	Lunch	242(81.5%)	55(18.5%)	0.64(0.31 - 1.33)	0.49
	Supper	17(77.3%)	5(22.7%)	0.83(0.25 - 2.78)	
	Breakfast	34(73.9%)	12(26.1%)		
Attendance of fitness club/gym	No	208(77.6%)	60(22.4%)	1.75(0.93 - 3.31)	0.08
	Yes	85(85.9%)	14(14.1%)		

Considering the time of leaving home to the office, staff who leave home after 7am are 0.70(95%CI: 0.25 - 1.96) times less likely to be stressed (p=0.14).

Statistically insignificant association exist between time of leaving office and level of stress of staff. Staff who leave office after 7pm are 1.67(95%CI: 0.192 -14.60) times more likely to be stressed compared with staff who leave office between 5pm-7pm with those who leave earlier than 5pm as reference category (p=0.54).

Staff who go to bed after 10pm are 1.0(95%CI: 0.44 - 2.43) times more likely to be stressed than those who sleep between 9pm-10pm with reference to those who sleep earlier than 9pm (p=0.40).

Comparisons among the time of eating last meal reveals a significant improvement in level of stress experienced ($p < 0.017$). Staff who eat after 8pm are 3.1(95%CI: 1.40-6.88) times more likely to be stressed relative to those who eat before 6pm, than are those who eat between 6pm-7pm; 1.2(95%CI: 0.59 - 2.47) and between 7pm-8pm; 1.2(95%CI: 0.57 - 2.35).

Staffs who take their heaviest meal in the afternoon have a better chance of being normally stressed. They are 0.64(95%CI: 0.31 - 1.33) times less likely to be stressed than those who eat heavy at supper time.

Comparison between those who attend fitness club/gym and those who do not reveals a non-significant improvement in levels of stressed experienced by those who attend fitness club (p=0.08). Staffs who do not attend fitness club are 1.75(95%CI: 0.93 - 3.31) times more likely to be stressed compared to those who attend.

CHAPTER 5

DISCUSSION

The difference in stress among gender agrees with Shors (2016) which states clearly that males and females could respond in opposite directions to the same environmental stressor. Dana et al., (2014) and Wiegner L.et al, (2015) both disagree with this finding with their result pointing to the fact that women report more stress than men.

A multilevel analysis involving 594,202 participants using data from the Community Health Survey, 2008 and 2009, administered by the Korean Centers for Disease Control and Prevention on the relationship between Quality of Life (QOL) and marital status agrees with the finding that Staff of banks who are single are more likely to be stressed than the married staff. Kyu-Tae Han et al in their study in 2014 revealed that single men had significantly worse QOL than married men. On the other hand, the QOL measured by EQ-VAS was better in single women than in married, and separated or divorced women. Hedel K. Van et al, (2016) also demonstrated that among US women in the labor force, being unmarried was associated with a 3.98 (95%CI: 3.28-4.82) times higher risk of dying than being married, whereas the relative risk was 2.49 (95%CI: 2.10-2.94) for women active in the labor market. This shows that married people have better health outcome than the single on a broader spectrum. Williams K., (2003) also stated in his study that, for both men and women, being continually unmarried is associated with poorer psychological well-being relative to being married. Hence, with few exceptions, the effects of marital status, marital transitions, and marital quality on psychological well-being are similar for men and women. The findings however failed to support the hypothesis that marriage provides greater psychological benefits to men than to women. Furthermore, for men and women, occupying an unsatisfying marriage undermines psychological well-being to a similar extent—and, in some cases, to a

greater extent—than exiting marriage or being continually unmarried. Psychological wellbeing is a stressor that affects stress level of individuals (Cohen, 1981) hence this finding suggests that staffs that are single during the time of employment should be encouraged to marry so as to ameliorate the effect of stress that comes with their job. Cheshire A.et al, (2016) conducted a study on how to improve men's mental health stemming from stress. Form the study of 82 participants who completed pre- and post-treatment questionnaires, which included counseling sections and acupuncture, the pre- and post-treatment revealed a statistically significant improvement in anxious mood (p <0.001) and perceived stress ($p < 0.001$).

If married staff have less risk of being stressed compared to the singles, then having 1 or more children/dependents should be beneficial in keeping with good stress level among married staff. However, this study reveals an increased risk of being stressed for married staff with 2 or more children/dependents. This can best be explained to be as a result of parenting stress, (Lamis D. A., 2014) and the differences in the level of stress at work and at home (Damaske S., 2014). It is a fact that a combination of stress at work and home increases people's subjective experience of daily stress.

5.1 Time of eating last meal and stress

There is a strong positive relationship (0.9) between level of stress and time of eating last meal. Level of stress is significantly associated with time of eating last meal with the trend of odds at 0.017. This study reveals that most of the staff of banks have their heaviest meal eaten at lunch time which may be greater intake of calories from fat, high-fat snacks, and fast food items, lower intake of calories from carbohydrates as well as less frequent intake of fruits and vegetables which significantly impacts on stress level (Barrington E. W. et al, 2014

; Ansari W. and Berg-Beckhoff G., 2015). Recent studies suggest that stress could be associated with either decreased or increased eating depending on the study population, food group, and type of stressor. After a stressful event is experienced, there is a corticotropin-releasing-hormone (CRH)-mediated suppression of food intake. The body prioritises the fight, flight or withdrawal behaviour, ignoring the less pressing need of food intake so as to deal with the stressful event. In the hours following this, however, there is a glucocorticoid-mediated stimulation of hunger and eating behaviour. Hypothalamic-pituitary-adrenal (HPA) axis modulation of food intake allows the stressful event to be dealt with and the energy used to be replaced afterward (Sominsky L. and Spencer S. J., 2014).

Tomiyama A. J. et al, 2012 studied 40 non-smoking healthy women from San Francisco Bay and concluded that leptin level is negatively associated with the intake of high fat/ high sweet food after a stressed event.

Eating pattern has significant effect on headaches (Turner D. P. et al, 2013) and specifically night eating could affect sleep quantity and sleep efficiency with normal sleep-wake behavior among individuals (Rogers N.L., et al, 2006) as well as obesity (Cleator J. et al, 2012). Further longitudinal research is necessary to understand stress related over- and under-eating and the pathway between late eating and stress.

5.2 Time of sleeping and stress

Staff who go to bed after 10pm are more likely to be stressed than those who sleep between 9pm-10pm and earlier than 9pm. More so, majority of respondents leave office between 5pm and 6pm and sleep after 10pm. This same people have to leave home earlier than 6am in order to arrive at work early for the day's activity. From the above analysis, it can be stated

that majority of respondents sleep for about 5hours daily and remain awake for close to 16hours in a day. Following the time of leaving office after work to the house, it can be deduced that majority of staffs are awake for close to 4 or 5 hours before retiring to sleep when they arrive home. Memory function depends on sleep and for proper functioning of the brain, sleep must occur within a specific time window following the day's activity. Impaired memory retrieval is associated with a 6hour sleep deprivation after a complex object recognition task while memory is intact if sleep deprivation is performed 6 hours after learning (Palchykova et al., 2006; Bassett M. S. et al, 2015). From the individual stress questions, majority of the respondents experience headaches and feel tired in the morning. Most of them however, enjoy good night sleep. The effect of sleep on stress could be bidirectional in that, stress itself often disturbs sleep. Experiencing sleep loss following stress exposure may further potentiate changes in brain functioning at the level of synaptic plasticity. Vice versa, stress exposure after sleep loss alters the HPA response. The biological drive for sleep may additionally be influenced by environmental and behavioral factors (e.g., voluntary awake, shift/night work, noise, caffeine intake), Grønli J. et al, 2013. It can be concluded that staff will have a normal stress level if they endeavor to sleep early after arriving home from work and since sleep regulation is more of behavioral, their body clock can restart to accommodate the change so desired.

5.3 Attendance of fitness club and stress

Staff of bank who attend fitness club/gym have a normal stress level than those who do not. Interestingly, some prospective studies report evidence that physical activity was positively impacted by stress (behavioral activation). This is true as some individuals utilize exercise to cope with stress (Stults-Kolehmainen M.A. and Rajita Sinha, 2015)

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.0 CONCLUSIONS

A substantial body of evidence points to the salutary relationship between working conditions and the level of stress workers face. However, this study fails to reject the null hypothesis and concludes that there is an association between lifestyle and level of stress experienced by staff of banks. The study specifically reports an association between level of stress and time of eating last meal; a lifestyle among staff of banks. This study design however could not draw a causal relationship between time of eating last meal and the level of stress experienced by bank workers. This study pops up a question of whether eating late leads to stress or it is a reverse causation?

6.1 RECOMMENDATIONS

1. From a public policy perspective, employers should employ company counselor to help with the management of stress that affects their workers for a better mental health outcome.
2. Staff of banks should be encouraged to eat their last meal as early as possible. They should endeavor to take supper at work before leaving the office in order to do away with night eating.
3. Staff of banks should make a conscious effort to consume more vegetables and fruits on a regular basis especially for supper since stressed workers have a higher tendency of eating comfort foods ; high fat/high sweet foods which impacts negatively on their health.

4. Employers as part of their responsibilities towards their employees should either get a day set aside for fitness class preferably weekends or register each worker with a gym for regular exercise to help manage the stress they experience and for a better health outcome.
5. Longitudinal study is needed to find the causal pathway between level of stress and time of eating last meal.
6. Further studies should consider a larger sample size to increase the precision of the findings.
7. Psychologists should be contacted to develop locally generated questionnaires for research work into level of stress of Ghanaian workers. This will help improve the sensitivity and specificity of the result obtained.
8. Further studies should consider online answering of questionnaires to deal with potential low response rate associated with researcher administered questionnaire method.

REFERENCES

Ahmed, A. & Ramzan, M., 2013. Effects of Job Stress on Employees Job Performance A Study on Banking Sector of Pakistan. , 11(6), pp.61–68.

Al-alawi, A.I. & Al-alawi, E.I., 2014. Measuring Occupational Stress among Management Information Systems Workers and Users in the Financial Services Sector : The Case of Bahraini Bankers. , 4(8), pp.1–25.

Alexandros-Stamatios G. A., Matilyn J.D., and Cary L.C., 2003. "Occupational Stress, Job satisfaction, and health state in male and female junior hospital doctors in Greece", Journal of Managerial Psychology, 18(6), pp. 592-621.

Ann Goetting, 1986. Parental Satisfaction. A Review of Research. Western Kentucky University. , Vol 7 No 1, pp.83–109.

Anon, Diathesis Stress Model_ - Journal of Stress Management.

Anon, 2016. Ghana workers are stressed. Available at: https://www.newsghana.com.gh/75-of-ghana-workers-are-more-stressed/.

Ansari W. E. and Gabriele Berg-Beckhoff, 2015. Nutritional Correlates of Perceived Stress among University Students in Egypt. 12(11): 14164–14176.

Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey Bass.

Bakker, A.B., Veldhoven, M. Van & Xanthopoulou, D., 2010. Beyond the Demand-Control Model Thriving on High Job Demands and Resources. , 9(1), pp.3–16.

Bandura, A. (1997*). Self-efficacy: The exercise of control.* New York: Freeman.

Barrington E. W., PhD, Shirley A.A. Beresford, PhD, Bonnie A. McGregor, PhD, and Emily White, PhD , 2014, Perceived stress and eating behaviors by gender, obesity-status, and stress vulnerability_ findings from the Vitamins and Lifestyle (VITAL) study. ;114(11): 1791–1799.

Bassett M. S., Sarah B. Lupis, Danielle Gianferante, Nicolas Rohleder, and Jutta M. Wolf, 2015. Sleep quality but not sleep quantity effects on cortisol responses to acute psychosocial stress. Stress. 2015; 18(6): 638–644.

Beehr A. T, Jex M.S., Stacy A. B., & Murray A.M. (2000). Work Stressors and Coworker Support as Predictors of Individual Strain and Job Performance.Journal of Organizational Behavior, Vol. 21, No. 4, pp. 391-405.

Cheshire A., Peters D., Ridge D., 2016.How do we improve men's mental health via primary care_ An evaluation of the Atlas Men's Well-being Pilot Programme for stressed_distressed men. v.17

Cleator J., J Abbott, P Judd, C Sutton, and J P H Wilding 2012. Night eating syndrome_ implications for severe obesity. 2(9): e44.

Cohen, S., and N. Weinstein 1981 "Nonauditory effects of noise on behavior and health." Journal of Social Issues 37:36-70

Damaske S., Joshua M. Smyth, and Matthew J. Zawadzki*, 2014. Has Work Replaced Home as a Haven_ Re-examining Arlie Hochschild's Time Bind Proposition with Objective Stress Data. 115: 130–138.

Dana A. Glei, Noreen Goldman, Vladimir M. Shkolnikov, Dmitri Jdanov, Maria Shkolnikova, James W. Vaupel, and M.W., 2014. PERCEIVED STRESS AND BIOLOGICAL RISK_ IS THE LINK STRONGER IN RUSSIANS THAN IN TAIWANESE

AND AMERICANS_. *HHS*, 16(4), pp.411–420.

Folkman, S. & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health & Social Behavior, 21*(3), 219-239.

Grønli J., Jonathan Soulé, and Clive R. Bramham, 2013. Short Sleep Makes Declarative Memories Vulnerable to Stress in Humans. 7: 224.

Hancock, P., 1984. Environmental Stressors. *Sustained Attention in Human Performance*, pp.103–136.

Hedel K. V., Frank J van Lenthe, Mauricio Avendano, Matthias Bopp,Santiago Esnaola,Katalin Kovács, Pekka Martikainen, Enrique Regidor, and Johan P Mackenbach, 2015.Marital status, labour force activity and mortality_ A study of the United States and 6 European countries. 43(5): 469–480.Mitchell, B.A., 2010. Happiness in Midlife Parental Roles: A Contextual Mixed Methods Analysis. , 59(3), pp.326–339.

Holmes, T., & Rahe, R. (1967). The Social Reajustment Rating Scale. *Journal of Psychosomatic Research, 12*,(4), p. 213–233.

Ingram, R. E. & Luxton, D. D. (2005). "Vulnerability-Stress Models." In B.L. Hankin & J. R. Z. Abela (Eds.), *Development of Psychopathology: A vulnerability stress perspective* (pp. 32-46). Thousand Oaks, CA: Sage Publications Inc.

Jamal M. (1984). Job Stress and job Performance controversy: an empirical assessment in two countries. Organizational Behavior and Human Performance, 33:1–21.

Jayashree, R., 1988. STRESS MANAGEMENT WITH SPECIAL REFERENCE TO PUBLIC SECTOR BANK EMPLOYEES IN CHENNAI. , 1(3), pp.34–39.

Jex, S.M., Bliese, P.D., Buzzell, S., & Primeau. J. (2001). The impact of self-efficacy on stressor–strain relations: Coping style as an explanatory mechanism. *Journal of Applied Psychology 86* (3), 401.

Katarzyna Cieślak, Mariusz Pawlukiewicz, Dorota Gołąb, Monika Konys, Maria Kuśnierkiewicz, and P.K., 2013. Styles of coping with stress of cancer in patients treated with radiotherapy and expectations towards medical staff – Practical implications. , Vol.18(2);

Kobasa, S. C., Maddi, S. R., Puccetti, M. C., & Zola, M. A. (1985). Effectiveness of hardiness, exercise and social support as resources against illness. *Journal of Psychosomatic Research 29*(5), 525–533.

Kristy W., 2003. Has the Future of Marriage Arrived_ A Contemporary Examination of Gender, Marriage, and Psychological Well-Being; 44(4): 470–487..

Kwaku, E., 2012. Occupational stress and its effects on job performance: A case of Koforidua Polytechnic. , (Pg 4129510), pp.1–145.

Kyu-Tae Han, Eun-Cheol Park, Jae-Hyun Kim, Sun Jung Kim,Sohee Park, 2014.Is marital status associated with quality of life_v.12

Lamis D. A., Christina K. Wilson, Nicholas Tarantino, Jennifer E. Lansford, and Nadine J. Kaslow, 2014. Neighborhood Disorder, Spiritual Well-Being, and Parenting Stress in African American Women. 28(6): 769–778.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Lazarus R. S. (1993). "From psychological stress to the emotions: A history of changing outlooks". Annual Review of Psychology. **44** (1): 1–21. doi:10.1146/annurev.ps.44.020193.000245.

Lloyd, J.F.P. and S.A., Quality of Family Life, Social Support, and Stress. , Vol. 50, N, pp.53–67.

Luba Sominsky and Sarah J. Spencer, 2014. Eating behavior and stress_ a pathway to

obesity. *Front Psychol*, v.5, p.434.

Manshor AT, Fontaine R, Choy CS. Occupational stnagers: a Malaysian survey. J Manag Psychol. 2003;18(6):622–8.

Marini, I., Todd, J., & Slate, J. R. (1995). Occupational stress among mental health employees. Journal of Rehabilitation Administration, 19(2), 123-130.

Mechanic, D. (1978). *Students under stress: A study in the social psychology of adaptation*. Madison: University of Wisconsin Press.

Mitchell, B.A., 2010. Happiness in Midlife Parental Roles: A Contextual Mixed Methods Analysis. , 59(3), pp.326–339.

Oatley, K., Keltner, D. & Jenkins, J.M., *Emotions and mental health in childhood."Understanding emotions* 2nd ed., Oxford, UK: Blackwell Publishing.

Ormel J.; Jeronimus, B.F.; Kotov, M.; Riese, H.; Bos, E.H.; Hankin, B. (2013). "Neuroticism and common mental disorders: Meaning and utility of a complex relationship". Clinical Psychology Review. **33** (5): 686–697. doi:10.1016/j.cpr.2013.04.003. PMC 4382368. *PMID 23702592.*

Osipow SH, Spokane AR. Occupational stress inventory-revised. Odessa FL Psychol. 1998:1–15.

Ongori, Henry; Agolla, J.E., 2008. Occupational Stress in Organizations and Its Effects on Organizational Performance. *Journal of Management Research*, pp.123–135.

Palchykova S., Winsky-Sommerer R., Meerlo P., Dürr R., Tobler I. (2006). Sleep deprivation impairs object recognition in mice. Neurobiol. Learn. Mem. 85, 263–271 10.1016/j.nlm.2005.11.005

Quick, James Campbell; Quick, Jonathan D.; Nelson, Debra L.; Hurrell Jr., J.J., 1997. *Preventive stress management: Principles and methods.*,

Rahe, R. H., & Arthur, R. J. (1978). Life change and illness studies: Past history and future directions. *Journal of Human Stress, 4*, 3–15.

Rogers NL, Dinges DF, Allison KC, Maislin G, Martino N, O'Reardon JP, et al. Assessment of sleep in women with night eating syndrome. Sleep. 2006;29:814–819.

Rotter, J. B. (1966) Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80* Sanders, G.S. & Suls, J. (Eds.), *Social psychology of health and illness* (pp. 1–25).Shors, T.J., 2016. A trip down memory lane about sex differences in the brain. *Logo of transb Philos Trans R Soc Lond B Biol Sci.*, v.371(1688.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health – Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*(3), 219–247.

Selye, H. (1956). *The stress of life*. New York: McGraw Hill.

Selye H. 1974. Stress without distress. Philadelphia, PA: J.B. Lippincott Co.

Sigelman, C. K. & Rider, E. A. (2009). Developmental psychopathology. *Life-span human development* (6th ed.) (pp. 468-495). Belmont, CA: Wadsworth Cengage Learning.

Simpson, N., 2000. Effects of New Ways of Working on Employees Stress Levels. HSE Books, London.

Streparava P., 2014. HOW TO PREVENT, REDUCE AND GENERALLY, TO DEAL WITH STRESS __ Curare dolorem Opus Divinum Est.

Steven Sauter - Lawrence Murphy Michael Colligan - Naomi Swanson - Joseph Hurrell, Jr. -

Frederick Scharf, J.-R.S.P.G.-L.G.-T.A.-J.J.-A.H.-J.T., 1998. *STRESS AT WORK*, 4676 Columbia Parkway Cincinnati, OH 45226–1998.

Stults-Kolehmainen A. M. and Rajita Sinha, 2015. The Effects of Stress on Physical Activity and Exercise. Sports Med. 2014 Jan; 44(1): 81–121.

Tomiyama A. J., Imke Schamarek,' Robert H. Lustig, Clemens Kirschbaum, Eli Puterman, Peter J. Havel, and Elissa S. Epe, Leptin concentrations in response to acute stress predict subsequent intake of comfort foods. 107(1): 34–39

Topper E. F., (2007). Stress in the library workplace, New Library World, (11 / 12): 561-564.

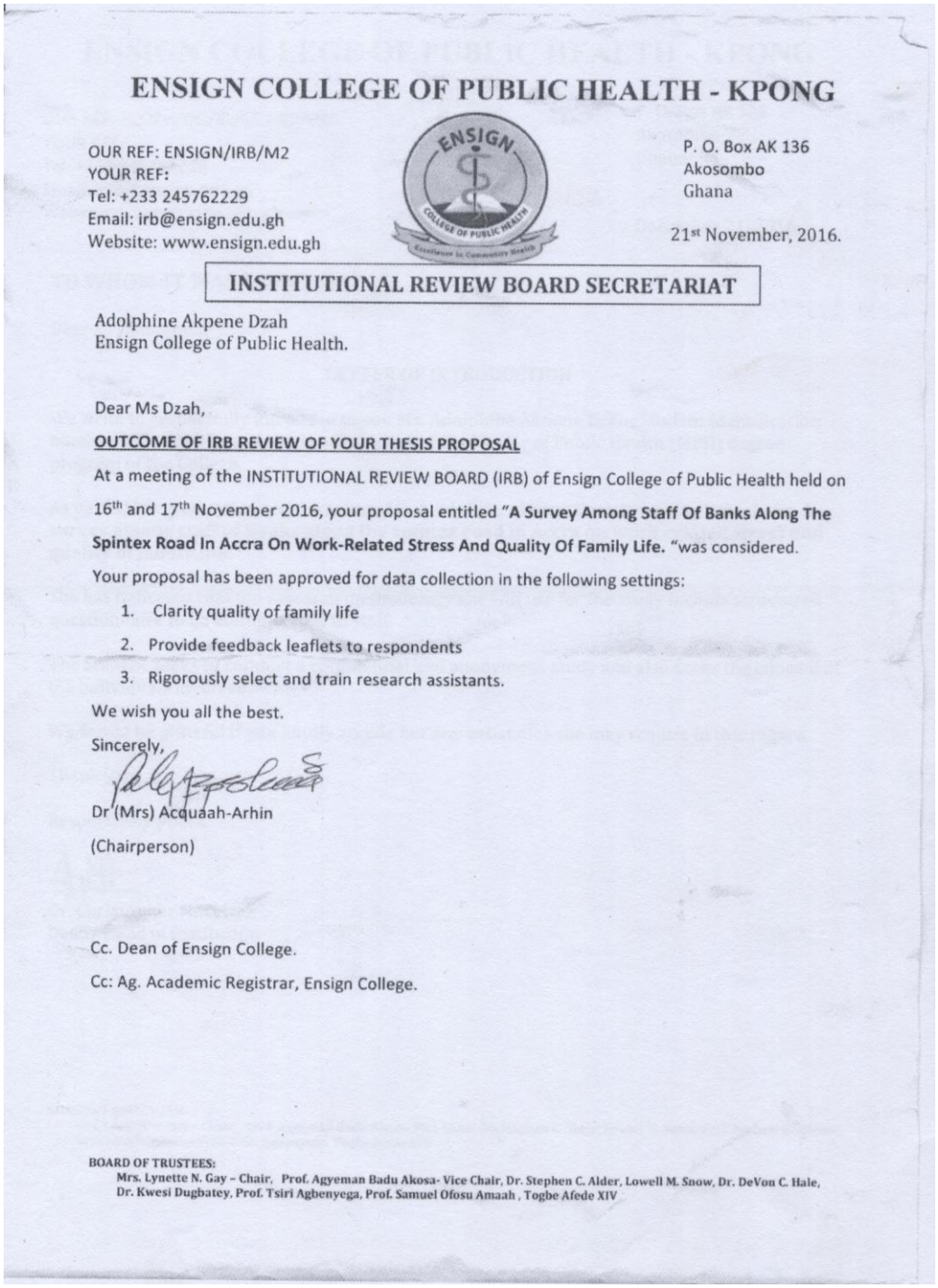
Turner D. P., Todd A. Smitherman, Donald B. Penzien, John A. H. Porter, Vincent T. Martin, and Timothy T. Houle, 2013. Nighttime snacking, stress, and migraine activity. 21(4): 638–643.

Wiegner L., Dominique Hange, Cecilia Björkelund, and Gunnar Ahlborg, Jr., 2015 Prevalence of perceived stress and associations to symptoms of exhaustion, depression and anxiety in a working age population seeking primary care - an observational study. 16: 38.

World Health Organization, 2010. Global status report on noncommunicable diseases.

APPENDICES

Appendix I



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Akosombo
Ghana

21st November, 2016.

INSTITUTIONAL REVIEW BOARD SECRETARIAT

Adolphine Akpene Dzah
Ensign College of Public Health.

Dear Ms Dzah,

OUTCOME OF IRB REVIEW OF YOUR THESIS PROPOSAL

At a meeting of the INSTITUTIONAL REVIEW BOARD (IRB) of Ensign College of Public Health held on 16th and 17th November 2016, your proposal entitled **"A Survey Among Staff Of Banks Along The Spintex Road In Accra On Work-Related Stress And Quality Of Family Life. "**was considered.

Your proposal has been approved for data collection in the following settings:

1. Clarity quality of family life
2. Provide feedback leaflets to respondents
3. Rigorously select and train research assistants.

We wish you all the best.

Sincerely,

Dr (Mrs) Acquaah-Arhin

(Chairperson)

Cc. Dean of Ensign College.

Cc: Ag. Academic Registrar, Ensign College.

BOARD OF TRUSTEES:
Mrs. Lynette N. Gay – Chair, Prof. Agyeman Badu Akosa- Vice Chair, Dr. Stephen C. Alder, Lowell M. Snow, Dr. DeVon C. Hale, Dr. Kwesi Dugbatey, Prof. Tsiri Agbenyega, Prof. Samuel Ofosu Amaah , Togbe Afede XIV

Appendix II

ENSIGN COLLEGE OF PUBLIC HEALTH - KPONG

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P. O. Box AK 136
Akosombo
Ghana

December 21, 2016

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION

We write to respectfully introduce to you Ms. Adolphine Akpene Dzah (Student Identification number 157100025), a second year student of the Master of Public Health (MPH) degree program of the College.

As part of her graduation requirements, Ms. Adolphine Akpene Dzah is writing a thesis on; **A survey among staff of Banks along the spintex road in Accra on work related stress and quality of family life.**

She has indicated that the research methodology she will use for the study include structured questionnaire to be administered to staff.

The Student seeks to conduct a confidential and anonymous study and also seeks the consent of the individuals involved.

We would be grateful if you kindly accede her any assistance she may require in this regard.

Thank you.

Respectively yours,

Dr. Christopher N. Tetteh
Dean/ Head of Institution

Appendix III CONSENT FORM

Study title: Risk Factors of Non-Communicable Diseases, Level of Physical Activity and Level of Sress among staff of banking Institutions in the Greater Accra Region of Ghana; Participant Information Sheet & Consent Form

Part 1. Participant Information

Introduction

We are from Ensign College of Public Health in Kpong. We conducting a study that involves research to assess Level of Physical Acivity, Level of Stress and Risk Factors of Non-Communicable Diseases (NCDs) among staff of selected banking institutions in Ghana. We will be analysing stress level of bank workers, physical activity level and behavioural risk factors of NCDs of staff of some Banks in the Greater Accra Region.
We will be explaining all about the study to you and you will also receive a copy of the leaflet that explains all about this research study that you are being asked to join in. Please take all the time you need to read it carefully. You may ask any questions about anything you do not understand at any time. You are a volunteer, you can choose not to take part, and if you join, you may decide to quit at any time. There will be no penalty if you decide to quit the study.

Why you are being asked to participate

You are being asked to take part in this study because you are a staff of a selected Bank within the Greater Accra Region. Specifically, We are interested in and recruiting office based workers of Banking institutions to participate in this study.

Procedures

If you agree to be a part of the study, a trained project staff will ask you a series of survey questions alone for approximately 45 - 60 minutes.
Your responses will be recorded on paper and later entered into a computer database by study staff. As a participant, if you agree to participate in this study, data from your responses may be used as part of our assessment of identifying behavioural risk factors on non-communicable diseases, stress level and physical activity level.

Risk and Benefits

We anticipate minimal or no risk to you for being a part of this study. There is no direct benefit to you for being in the study; however, study outcomes may lead to a better understanding of behavioural risk factors that predisposes people in your profession and possibly other related professions to non-comunicable diseases such as diabetes and hypertension and provide effective interventions to eliminate or minimize associated risk for a healthy life. This study will also serve as a guide to monitor stress level as well as level of physical activity for staff of banking institutions.

Confidentiality

All data will be de-identified and will be kept private. Your identifiable data such as name or date of birth will not be used in documents, reports, or publications related to this research.
We will keep all documents secured and under lock.
When typing your survey responses into the computer, all data will be entered without any information that will make it possible for your identity to be known. The information you provide will be kept strictly confidential and will be available only to persons related to the study. The Office of Ethical Review Board of Ensign College may also have access to study records upon their request.
Your responses will not be shown to other participants or community members. The original paper survey forms will be destroyed once data entry is complete.

Voluntariness and Withdrawal

Your participation in the study is completely voluntary and you reserve the right not to participate, even after you have taken part, you may decide to withdraw. This is your right and the decision you take will not be disclosed to anyone. It will not affect the care that will be offered to you at the health facility now or in future. If you join the study, you can change

your mind later. You can choose not to take part and you can quit at any time. There will be no negative consequences if you choose not to participate in the study. Please note however, that some of the information that may have been obtained from you without identifiers, before you chose to withdraw, may be used in analysis, reports and publications.

Cost/Compensation

Your participation in this study will not lead to you incurring any monetary cost during or after the study.

Who to contact

This study has been approved by the Institutional Review Board of Ensign College. If you have any concerns about the conduct of this study, your welfare or your rights as a research participant or if you wish to ask questions or need further explanations later, you may contact the research team (0207214583) of Ensign College of Public Health, or the Supervisor Dr. Frank Baiden (0204591181). You may also contact the Adminitrator of the Institutional Ethics Committee of the Ensign College of Public Health on +233245762229.

Thank you.

Do you have any questions?

Part 2. CONSENT DECLARATION

"I have read the information given above, or the information above has been read to me. I have been given a chance to ask questions concerning this study; questions have been answered to my satisfaction. I now voluntarily agree to participate in this study knowing that I have the right to withdraw at any time without affecting future health care services"

Left thumbprint of participant

Name of **participant** _____

Signature of **Participant** _____

Date: / / 2016

Name of **witness** _____

Signature of **witness** _____

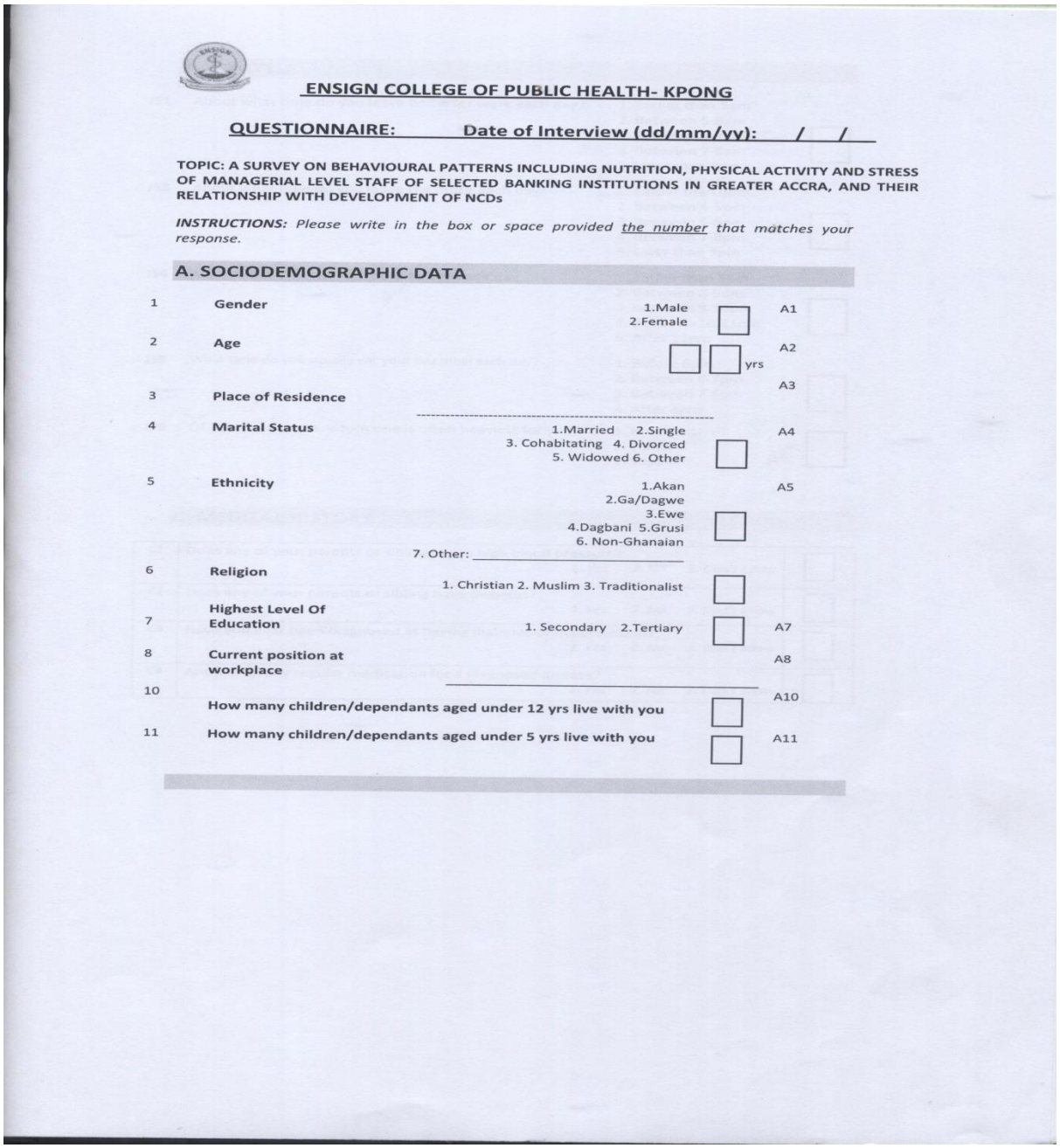
Date: / / 2016

Name of **investigator** _____

Signature of **investigator** _____

Date: / / 2016

Appendix IV QUESTIONNAIRE



ENSIGN COLLEGE OF PUBLIC HEALTH- KPONG

QUESTIONNAIRE: **Date of Interview (dd/mm/yy): / /**

TOPIC: A SURVEY ON BEHAVIOURAL PATTERNS INCLUDING NUTRITION, PHYSICAL ACTIVITY AND STRESS OF MANAGERIAL LEVEL STAFF OF SELECTED BANKING INSTITUTIONS IN GREATER ACCRA, AND THEIR RELATIONSHIP WITH DEVELOPMENT OF NCDs

INSTRUCTIONS: *Please write in the box or space provided the number that matches your response.*

A. SOCIODEMOGRAPHIC DATA

1	**Gender**	1.Male 2.Female ☐	A1
2	**Age**	☐☐ yrs	A2
3	**Place of Residence**	_____	A3
4	**Marital Status**	1.Married 2.Single 3. Cohabitating 4. Divorced 5. Widowed 6. Other ☐	A4
5	**Ethnicity**	1.Akan 2.Ga/Dagwe 3.Ewe 4.Dagbani 5.Grusi 6. Non-Ghanaian ☐ 7. Other: _____	A5
6	**Religion**	1. Christian 2. Muslim 3. Traditionalist ☐	
7	**Highest Level Of Education**	1. Secondary 2.Tertiary ☐	A7
8	**Current position at workplace**	_____	A8
10	**How many children/dependants aged under 12 yrs live with you**	☐	A10
11	**How many children/dependants aged under 5 yrs live with you**	☐	A11

B. LIFESTYLE

JS1 About what time do you leave home for work each day?

1. Earlier than 5am
2. Between 5-6am
3. Between 6-7am
4. Between 7-8am
5. Later than 8am

☐

JS3 About what time do you leave the office each day?

1. Earlier than 4pm
2. Between 4-5pm
3. Between 5-6pm
4. Between 7-8pm
5. Later than 8pm

☐

JS4 About what time do you retire to bed each day

1. Earlier than 8pm
2. Between 8-9pm
3. Between 9-10pm
4. Between 10-11pm
5. After 11pm

☐

JS5 What time do you usually eat your last meal each day?

1. Before 6pm
2. Between 6-7pm
3. Between 7-8pm
4. After 8pm

☐

JS6 Of the three meals, which one is often heaviest for you?

1. Breakfast
2. Lunch
3. Supper

☐

C. MEDICAL HISTORY

C1	Does any of your parents or siblings have high blood pressure? *1. Yes 2. No 3. Don't know*	☐
C2	Does any of your parents or sibling have diabetes? *1. Yes 2. No 3. Don't know*	☐
C3	Have you ever been diagnosed as having diabetes or hypertension? *1. Yes 2. No 3. Don't know*	☐
C4	Are you on any regular medication for a diagnosed disease? *1. Yes 2. No 3. Don't know*	☐

D. KNOWLEDGE AND ATTITUDE TOWARDS NCDs

D1. Do you think the following can affect your risk of developing hypertension or diabetes?

D1a. Your weight?	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1b. Parent(s) or close relative having hypertension or diabetes?	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1c. Whether you smoke or not?	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1d. Level of alcohol intake	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1e. Your level of salt intake?	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1f. Your level of sugar intake?	**1**.Yes	**2**.No	**3**.Don't know	☐	
D1g. How long ago did you last check your weight?	1. Within past 3 months 2. Between 3-6m ago 3. Between 6-12m ago 4. Over a year ago 5. Can't remember			☐	
D1h. How long ago did you last check your BP?	1. Within past 3 months 2. Between 3-6m ago 3. Between 6-12m ago 4. Over a year ago 5. Can't remember			☐	

E. KNOWLEDGE AND ATTITUDES TOWARDS PHYSICAL ACTIVITIES

E1. How do you normally commute to and from work?	**1**. Walking **2**. Bicycle **3**. Own/Exclusive car **4**. Public transport **5**. Other: _____	☐	
E2. What is the walking distance between where you park or the vehicle stops and your seat in the office	**1**. Within 5mins **2**. Between 5-15mins **3**. Between 15-30mins **4**. More than 30mins	☐	
E3. In total, about how much time do you usually spend walking on a typical day	**1**. Less than 15mins **2**. 15-30mins **3**. 30-60mins **4**. More than 60mins	☐	
E4. Does any part of your work involve activity that causes large increases in breathing or heart rate? for at least 10 minutes continuously	**1**.Yes **2**.No	☐	
E5. Do you regularly attend any fitness/sporting club or gym?	**1**.Yes **2**.No	☐	
E6. Are you a member of any fitness/sporting club or gym?	**1**.Yes **2**.No	☐	
E7. Does your workplace offer paid membership of fitness/sporting club or gym?	**1**.Yes **2**.No	☐	
E8. Would you utilise fitness/sporting/gym facilities if your workplace paid for it?	**1**.Yes **2**.No	☐	

F. SOURCE OF STRESS AND PERCEIVED STRESS

Please the scale below to response to the questions indicated in the table

0: I have never experienced this symptom
1: I suffer from it sometimes (about once per month)
2: I have suffered from it more than once per month but not more than once a week
3: I often suffer from it (more than once per week)

1	Do you often have headaches?	____	F1
2	Do you suffer from tension or stiffness in the neck, shoulders, jaw, arms, hands, legs or stomach?	____	F2
3	Do you have nervous twitches?	____	F3
4	Do you feel your heart beating stronger or faster than usual sometimes?	____	F4
5	Do you have abnormal heart beats (heart pounding)?	____	F5
6	Do you sometimes have difficulty breathing?	____	F6
7	Do you suffer sometimes from dizziness or light-headedness?	____	F7
8	Do you feel like you have a lump in your throat or having to clear it?	____	F8
9	Do you often suffer from flu, hoarseness?	____	F9
10	Do you often suffer from indigestion, nausea, stomach-ache?	____	F10
11	Do you often suffer from diarrhoea, constipation?	____	F11
12	Do you bite your nails?	____	F12
13	Do you have difficulties falling asleep, or sleeping for a whole night?	____	F13
14	Do you feel tired in the morning?	____	F14
15	Do you have your hands or feet cold?	____	F15
16	Do your teeth tend do gnash? Do your jaws hurt?	____	F16
17	Do you tend to sweat a lot?	____	F17
18	Are you irritable or angry?	____	F18
19	Do you have any pains (back, stomach, head, muscle)?	____	F19
20	Do you think you might be suffering from anxiety, worry, agitation, nervousness?	____	F20

THANK YOU VERY MUCH