UNIVERSITY OF CAPE COAST

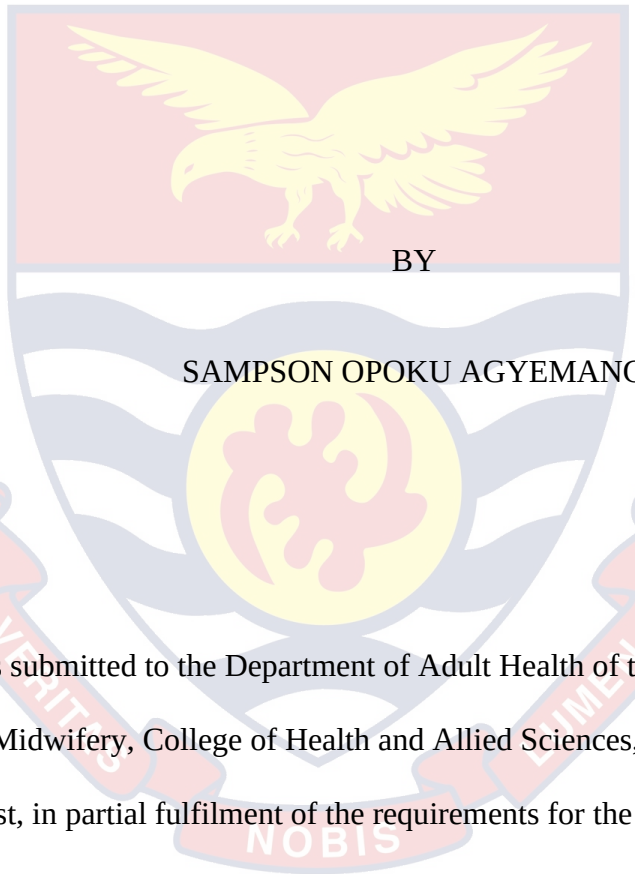
DEPRESSION, ANXIETY AND STRESS AMONG NURSES IN PUBLIC PSYCHIATRIC HOSPITALS IN GHANA

SAMPSON OPOKU AGYEMANG

2020

UNIVERSITY OF CAPE COAST

DEPRESSION, ANXIETY AND STRESS AMONG NURSES IN PUBLIC PSYCHIATRIC HOSPITALS IN GHANA



BY

SAMPSON OPOKU AGYEMANG

Thesis submitted to the Department of Adult Health of the School of Nursing and Midwifery, College of Health and Allied Sciences, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Nursing

JULY 2020

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature……. Date: 16th November, 2020

Name: Sampson Opoku Agyemang

Supervisors' Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Supervisor's Signature……..... Date: 16th November, 2020

Name: Dr. (Mrs.) Nancy Innocentia Ebu Enyan

ABSTRACT

This study assessed the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. A cross-sectional design was used for this study. A probability proportionate to size and simple random sampling method were used to select 311 respondents for the study. Data was collected using a questionnaire which comprise Beck's Depression Inventory, Beck's Anxiety Inventory and Perceived Stress Scale. Data was analysed using descriptive statistics and a multinomial logistic regression analysis. The results showed that 92% and 96.5% of mental health nurses experienced minimal depression and low anxiety respectively. In addition, 56.6% and 42.8% experienced low and moderate stress respectively and 42.4% were not satisfied with their current job. Positive association was found between educational level and depression whereas, a negative association existed between educational level and anxiety and stress. Also, mental health nurses who work at the OPD and Administration were more likely to experience anxiety and stress. It was recommended that the management of psychiatric hospitals give timely in-service training on management of depression, anxiety and stress to nurses. Measures to facilitate the easy enrolment of mental health nurses into higher level of education should be instituted by the management of the hospitals.

KEY WORDS

Anxiety

Depression

Mental health

Nursing

Risk factors

Stress

ACKNOWLEDGEMENTS

My profound gratitude goes to my supervisor Dr. (Mrs.) Nancy Innocentia Ebu Enyan for her motherly love, professional guidance, advice, encouragement and support throughout this study and the entire Master of Nursing programme. I am very grateful.

I am also grateful to the Dean, Dr. Dorcas Obiri-Yeboah, lecturers and administrative staff of the School of Nursing and Midwifery, especially Dr. Jerry P.K. Ninnoni, Dr. Andrews Adjei Druye, Dr. (Mrs.) Evelyn Asamoah Ampofo, Dr. Susanna Aba Abraham and Dr. Paul Naa Doku for their contributions in diverse ways towards my completion of the Master of Nursing programme.

My appreciation also extends to Mr. Isaac Budu Hayford for his support and encouragement. Finally, I wish to thank my family and friends for their support especially, my wife, Ruth Amaning and daughters, Afia Dede Opoku Agyemang and Akua Pokuaa Agyemang.

DEDICATION

To my dear wife, children and family

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

BAI	Beck's Anxiety Inventory
BDI	Beck's Depression Inventory
CBI	Copenhagen Burnout Inventory
DAS	Depression, Anxiety and Stress
DASS	Depression, Anxiety and Stress Scale
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders-IV
GAD	Generalized Anxiety Disorder
ICD-10	International Classification of Diseases-10
ICU	Intensive Care Unit
LAMIC	Low-and Middle-Income-Countries
NMC	Nursing and Midwifery Council
MHA	Mental Health Authority
MOH	Ministry of Health
OPD	Out Patients Department
PHC	Primary Health Care
PHQ	Patient Health Questionnaire
PSS	Perceived Stress Scale
SPSS	Statistical Package for Social Sciences
USA	United States of America
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

This study investigated the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. This introductory chapter gives an overview of the problem under study. It covers the background of the study, statement of the problem, purpose of the study, research questions, significance of the study, delimitations, limitations and definition of terms.

Good mental health is one of the most important indicators of a healthy society. Poor mental health affects every aspect of the individual's life. Globally, nurses are exposed to higher rate of mental health disorders due to the stressful nature of their work (Tran et al., 2019). The shortage of nurses in developed and developing countries increases the workload and stress on nurses working in various health institutions. Mental health disorders experienced by nurses are linked with absenteeism from work, reduced client satisfaction and short-term disability (Creedy, Sidebotham, Gamble, Pallant, & Fenwick, 2017).

The psychological wellbeing of nurses leads to improved quality care rendered to clients and family (Chen, Wang, Yang, & Fan, 2016; Creedy et al., 2017). The incidence of depression and anxiety is reported higher in nurses compared with individuals in other professions due to the stressful nature of their work (Brandford & Reed, 2016). Depression, anxiety and stress affect the output of nurses and the productivity of hospitals in general (Maharaj, Lees, & Lal, 2019). Therefore, identifying the risk factors and prevalence of depression, anxiety and stress as this study sought to achieve is important for

the provision of safe and quality mental health care and working environment for nurses.

Background to the Study

In recent years, there have been an increase in job stress of health care professionals as a result of global economic instability, job demands, conflict at the work place and unsafe working environment (Chen et al., 2016; Koinis et al., 2015). Nurses form the greater percentage of health care workers; this makes them an important component of the health care team. They play multifaceted role in the provision of health care to patients and the community (Maharaj et al., 2019; Perry, Lamont, Brunero, Gallagher, & Duffield, 2015). The nursing profession is physically, psychologically and emotionally demanding. Nurses experience work related distress involving patients and family on regular basis, they also deal with distressed patients and sometimes families who are devastated by the loss of loved ones (Khodadadi, Hosseinzadeh, Azimzadeh, & Fooladi, 2016). The demanding nature of the nursing profession expose nurses to work related stress, anxiety and depression. The continuous exposure to stressful situation for a long period may reduce efficiency and trigger mental health challenges which affect the individual, family and society (Koinis et al., 2015). It is claimed that among health workers at the clinical settings, nurses appear to present with more severe mental health disorders (Perry et al., 2015; Tran et al., 2019).

Depression, anxiety and stress are among the commonly reported mental disorders and significantly contribute to the global burden of disease (Ferrari et al., 2013). These conditions impact on existential aspects of a person's life, including employment and social interactions. Mental health

challenges affect an individual's cognitive, emotional and social functioning. The nursing and the quality of care rendered to patients is linked to the mental state of nurses (Maharaj et al., 2019). These challenges lead to reduced productivity, low level of employment, absenteeism, presenteeism and reduced quality of life (Koinis et al., 2015; McLachlan, Gilfillan, & Gordon, 2013; Perry et al., 2015). In addition, people with mental health illness are more at risk to substance use disorders, increased rate of divorce and at certain times suicide (Marzouk et al., 2018).

Depression is a severe mental health disorder which symptoms include loss of interest in pleasurable activities, feelings of sadness, guilt, low self-esteem, sleep disturbance and difficulties in concentration (Marcus, Taghi, van Ommeren, Chisholm, & Saxena, 2012). It affects an individual's performance at the workplace and daily life activities. Out of about 450 million people who suffer from mental health disorders globally, approximately 150million of them suffer from depression (Murray et al., 2012). It is estimated that one in every twenty people will suffer from depression once in a year (Marcus et al., 2012). The persistent symptoms of depression such as back and neck pain, anger and worry reduces the capacity of health care workers to adapt to different work conditions (Chen et al., 2016). Depression is linked to dissatisfaction with life among nurses working in various health care settings (Ghazwin et al., 2016).

The way an individual's body respond to perceived threat is known as anxiety (Clark & Beck, 2010). It is an unpleasant, uncertain and subjective feeling experienced by an individual. Anxiety is precipitated by an individual's thoughts, beliefs and feelings about an event, person or object

(Baxter et al., 2014). Anxiety is closely related to stress, it is the discomfort one experience with scepticism towards the unknown (Khodadadi et al., 2016). Symptoms of anxiety include increased blood pressure, respiration rate, pulse rate, tension, sweating and chest pain. The incidence of anxiety is associated with individual difference in the evaluation of the significance of events, which makes them respond to stressors differently (Koinis et al., 2015). If an event is of value to the person, then it can have threatening consequences which results in anxious situation.

Stress is a reaction that is started when a person perceives that external or internal demands exceed resources mobilized by the individual (Usman, Akbar, Ahmed, & Ahmed, 2011). It is the feelings of an individual when he anticipates that his demands are more than the resources available to him to fulfil those demands (Yeshaw & Mossie, 2017). If an individual is not able to manage the negative impact of stress, they exhibit symptoms of anxiety and depression. Nurses with high levels of stress report poor health, frustration and fatigue (Chen et al., 2016).

The complex nature of stress makes it difficult to determine the source of stress experienced by individuals. Each individual perceive stress differently from the other due to their knowledge and experience of the stressor (Koinis et al., 2015). Stress is also associated with high level of maladaptive behaviour such as smoking, alcoholism and over or under eating. The physical impact of stress on individuals include but not limited to back pain, migraines, sleep disturbance, apathy and high blood pressure (Khodadadi et al., 2016; Maharaj et al., 2019). Persistent exposure to stress could lead to the development of serious mental health disorders. High level of stress at the

work place expose nurses to insomnia, anxiety and depression (Id, Wu, Ho, & Wang, 2018; Khodadadi et al., 2016).

There is a complex relationship between depression, anxiety and stress. It is unclear if these psychological conditions have separate aetiology, if stress has a distinct cause or it underlies the incidents of depression and anxiety (Tran et al., 2019). Creedy et al. (2017) identified that stress has an impact on the development of common mental health conditions such as depression and anxiety. Individuals exposed to high levels of stress may suffer from depression and anxiety (Vahedian-Azimi et al., 2019). Other studies identified that, nurses who experienced symptoms of anxiety also experienced symptoms of depression (Perry et al., 2015; Tsaras et al., 2018). The incidence of anxiety and depression is triggered by stress which is a daily activity stimulated by concern for the past, present and future (Khodadadi et al., 2016).

Nurses are considered to be the most vulnerable working group to experience elevated stress levels in the hospital because they are constantly exposed to emotional demanding and challenging situations. The nature of the profession expose nurses to high prevalence of anxiety, depression, stress and burnout at the workplace (Fradelos et al., 2014; Id et al., 2018; Koinis et al., 2015; Perry et al., 2015). The challenging nature of the profession impact on the quality of life of the nurse. Constant human interactions, rapid decision-making in emergency situations makes the nursing profession more stressful (Koinis et al., 2015; Maharaj et al., 2019). These conditions put nurses on an escalating risk to exhibit psychiatric morbidity such as anxiety and depression that can affect all aspects of their personal, family and professional life as well (Id et al., 2018; Papathanasiou, 2015; Perry et al., 2015).

These mental health challenges increase by the day as almost half of clinical nurses suffers from at least one mental health disorder (Tran et al., 2019). The predictive factors of mental health challenges among nurses include; lack of job satisfaction, high workload, long working hours, sleep disturbance, marital status, conflict with colleagues and clients, abuse of drugs, shift work, the stressful nature of the profession, continuous interactions with patient and relatives, lack of support from superiors and years of employment (Cheung & Yip, 2015; Koinis et al., 2015; Yeshaw & Mossie, 2017).

In order to deliver quality and competent health care to patients who are admitted to hospitals, the mental health of nurses have to reach an optimal level mentally. The lack of mental health and wellbeing of professional nurses is associated with poor patient care (Elhai, Hall, & Erwin, 2018). Mental health disorders among nurses' results in being absent from work on regular basis, occupational accidents, reduced work performance, alcoholism, irritability and poor attitude towards patients (Tran et al., 2019). This could endanger the lives of patients at the hospital and reduce the quality of care provided and patient satisfaction. Reduced performance of nurses as a result of their poor mental state can contribute to reduced productivity and damage of reputation to the health facility (Koinis et al., 2015; Perry et al., 2015; Tran et al., 2019).

It is important that employers of nurses understand issues relating to the mental health wellbeing of nurses to improve productivity. Determining the prevalence and risk factors of depression and anxiety among mental health nurses will contribute to a better understanding of how these conditions

manifest (Perry et al., 2015; Tran et al., 2019; Tsaras et al., 2018). Therefore, managers of the health system should be interested in the mental health and wellbeing of nurses working in their health facilities. Determining the prevalence of depression, anxiety and stress levels among nurses and identifying the risk factors for these mental health disorders is essential to provide safer and adaptable workplace and promote the mental health wellbeing of nurses. This study entails the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana.

Statement of the Problem

Depression, anxiety and stress are common mental health challenges faced by nurses. These mental health challenges have turned into a worldwide public health problem (Id et al., 2018). Nurses are exposed to work-related stressors which expose them to high prevalence of depression, anxiety and stress. These include; long hours spent at the hospital, little time for self and family, meeting patient's needs, heavy job load, conflict at the work place, lifelong learning and lack of professional support from employers (Chen et al., 2016; Gong et al., 2014; Koinis et al., 2015). The high demand of the nursing profession can expose the nurse to severe mental health disorders.

It is estimated that globally, 4.4% of the world's population suffer from depression and 3.6% from anxiety disorders (World Health Organization [WHO], 2017). Studies suggest that there is high prevalence of depression, anxiety and stress among nurses. Cheung and Yip (2015) reported that in Hong Kong, 35.8%, 37.3% and 41.1% of nurses suffer from depression, anxiety and stress respectively. In a similar study, Yoon and Kim (2013) found

that, in South Korea 38% of nurses experienced depressive symptoms. In the United States of America, between 35%-41% of nurses suffered from depression and 22%-24% of them suffered from anxiety (Letvak, Ruhm, & McCoy, 2012). In Australia, it was identified that, 17% and 20% of midwives suffer from depression and anxiety respectively (Creedy et al., 2017). Similarly, stating the prevalence of depression and anxiety, 51% and 44%-66% of Brazilian nurses suffered from depression and anxiety respectively (Veloso, Laurindo, Marcilon, Pereira de Sousa, & De Souza Monteiro, 2016).

In Africa, depression, anxiety and stress are prevalent among nurses. A study by Yeshaw and Mossie (2017) in Ethiopia showed that 22.9%, 19.2% and 28.2% of nurses suffered from depression, anxiety and stress respectively. A cross-sectional study in Egypt among medical students shows that 63.6%, 78.4% and 57.8% suffered from depression, anxiety and stress respectively (Abdallah & Gabr, 2014).

A study in Ghana to assess the prevalence of stress, anxiety and sleep disorder among nurses reveals that, 63% and 83% of nurses were found to suffer from anxiety and stress respectively. Young nurses who have not worked for long periods experienced higher levels of anxiety and females demonstrated higher prevalence of stress than males (Amidu et al., 2018). A similar study to identify the distribution of depression, anxiety and stress among nurses at Pantang Hospital with regard to demographic characteristics reveals that, the higher the age of the nurse, the higher the risk of developing mental health condition. However, the study did not investigate work related risk factors that could expose nurses to depression, anxiety and stress (Atindanbila, Abasimi, & Anim, 2012). WHO (2017) indicates that, in Ghana,

4.2% and 2.8% of the country's population suffer from depression and anxiety respectively also, it was indicated that women are at more risk of developing depression than men.

Mental health nursing is an emotionally demanding and challenging profession and nurses working in such setting have to deal with many stressors. Mental health nurses are considered to be at higher risk of developing depression, anxiety and stress as compared to other categories of nurses (Tsaras et al., 2018). These major mental health challenges may lead to losses in job performance, work overload, stress and interfere with the mental wellbeing of mental health nurses (Ribeiro, Pompeo, Pinto, & De Cassia, 2015). It is therefore important to identify the risk factors of developing depression, anxiety and stress among mental health nurses.

Even though a number of studies have assessed the prevalence of depression, anxiety and stress among nurses working in general hospitals, (Abdallah & Gabr, 2014; Amidu et al., 2018; Cheung & Yip, 2015; Creedy et al., 2017; Gong et al., 2014; Letvak et al., 2012; Veloso et al., 2016; Yeshaw & Mossie, 2017; Yoon & Kim, 2013) few studies have been conducted among nurses working in psychiatric hospitals (Atindanbila et al., 2012). Literature on depression, anxiety and stress among nurses working in psychiatric hospitals is limited in Ghana. Given that nurses are exposed to high risk of depression, anxiety and stress, Gong et al., (2014) a study to identify the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana is therefore necessary.

Purpose of the Study

The purpose of this study was to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. Specifically, this study sought to:

1. determine the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana,
2. determine the prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana,
3. identify socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

Research Questions

This study was guided by the following research questions:

1. What is the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?
2. What is the prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?
3. What socio-demographic characteristics predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?

Significance of the Study

Mental health well-being of the nurse has a positive impact on the care and safety of clients in their care. Emotional well-being of a nurse leads to

staff retention, client satisfaction and improvement in communication with clients and family (Creedy et al., 2017).

The findings from this study would contribute to the body of knowledge in the area of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. This would contribute to the understanding of how nurses are exposed to depression, anxiety and stress. It would provide empirical information on the prevalence and risk factors of depression, stress and anxiety among nurses working in psychiatric hospitals in Ghana.

Furthermore, it would help to identify the most prevalent stressors among nurses. This is essential to provide a safe and adaptable workplace to promote the mental health and wellbeing of nurses in the clinical area. It would be beneficial to the three public psychiatric hospitals in Ghana to realize the number of nurses in the facilities who suffer from these mental health disorders. It would influence the decision of the management of these hospitals to put measures in place to reduce the effects of these conditions on job performance of nurses. It will make nurses aware of the prevalence of depression, anxiety and stress and take precautionary measures to prevent its occurrence.

This study would be useful to the World Health Organization, Ministry of Health, Ghana Health Services, Mental Health Authority and other relevant organizations in that, they would be furnished with evidence of the existence of depression, anxiety and stress among nurses in Ghana. This may inform them to put measures in place to reduce the incidence of depression, anxiety and stress among nurses in the country. The high prevalence of mental health

disorders among nurses signify the need for workplace mental health promotion policy that would effectively create the needed awareness and support within the workplace for staff with mental health challenges. This is essential to provide safe and quality health care to improve client satisfaction.

Delimitations

The scope of this study was to identify the prevalence and risk factors of depression, anxiety and stress among nurses working in the public psychiatric hospitals in Ghana. However, the study did not consider the management of depression, anxiety and stress among nurses working in the public psychiatric hospitals in Ghana.

The geographical location of this study was confined to the three public psychiatric hospitals in Ghana, that is; Accra Psychiatric Hospital, Ankaful Psychiatric Hospital and Pantang Hospital because these are the only public psychiatric hospitals in Ghana. The respondents for the study included professional nurses who work in the three public psychiatric hospitals in Ghana. Registered Mental Health Nurses who were absent during the period of the study, on study leave, annual leave, sick leave or maternity leave were excluded from the study.

Limitations

Limitations of this study included the realization that individuals respond to stress differently. Life experiences may influence the respondents to respond to stress differently, some may be more prone to stress than others. Personal knowledge, social support and experience of adverse events are likely to contribute to depression, anxiety and stress. This have the potential to

affect how the respondents perceive depression, anxiety and stress in this study.

The use of self-administered questionnaires may affect the study as responds to questionnaires is subjective. Respondents may answer the same questions differently depending on their life experience and knowledge on the questions asked. Respondents may provide socially desirable responses to questions they may consider to be sensitive and this may create false or doubtful relationship between data variables (Van de Mortel, 2008). However, the questionnaire was anonymous to promote honest response from the respondents in this study.

The use of cross-sectional design does not establish cause and effect relationship between variables (Ogah, 2013). This design is used in short-term studies and therefore cannot be used to observe depression, anxiety and stress among nurses over a long period of time but it does highlight the prevalence and risk factors that will form the basis for further studies.

In addition, the outbreak of COVID-19 pandemic in Ghana and the subsequent lock down of Accra made it difficult for me to collect data at Accra Psychiatric Hospital. This prolonged the data collection period at that facility. However, after the lock down was lifted, the data collection was completed.

Despite these limitations, this study is the first to identify the prevalence of depression, anxiety and stress among nurses working in all the three public psychiatric hospitals in Ghana.

Definition of Terms

Anxiety: is described as a condition that is characterized by panic, restlessness, nervousness, loss of control and inability to sleep as a result of perceived threat.

Depression: is defined as the presence of sadness, loss of interest, feelings of guilt, self-blame, alterations in the sleep pattern and indecisive which can become persistent and recurrent, making the person dysfunctional in activities of daily living.

Nurse: a registered mental health nurse who have obtained at least Diploma in mental health nursing, licensed and registered by the Nursing and Midwifery Council [NMC] of Ghana and works in a public psychiatric hospital in Ghana.

Stress: is defined as loss of control, loss of confidence, upset, irritable, tense and violent when one's resources is unable to meet his demand.

Organization of the Study

This study was organised into five chapters. The chapter one focused on the introduction which comprise background of the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, delimitations, limitations, definition of terms as well as organisation of the study.

Chapter Two of this study centres on the review of literature related to the study. The literature entails both conceptual review, theoretical review and empirical studies. Chapter Three describes the methodology adopted for the study. It encompasses the research design, study area, population, sampling procedure, data collection instrument, data collection procedures, data processing and analysis.

Chapter Four presents the research results and discussion of the findings in relation to the reviewed literature. Chapter Five gives the summary, relevant conclusions and recommendations based on the research findings.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The purpose of this study was to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. The review of literature involved the systematic identification, location and analysis of documents containing information related to the research problem. It makes the researcher aware of the various contributions' scholars have made in relation to the problem under study. Google Scholar, HINARI, PubMed, EBSCO HOST, ScienceDirect, Psycinfo and other database were searched for relevant literature. In addition, previously published literature, government documents and grey literature on the topic were reviewed and put it into perspective. Keywords used in the literature search included, mental health; nursing; depression; anxiety; stress and risk factors.

Concepts and theories underpinning the topic, empirical evidences in line with prevalence and risk factors of depression, anxiety and stress were reviewed. Demographic and occupational factors associated with depression, anxiety and stress were also reviewed.

Outline of Literature Review

The review of literature is presented in the following outline. First, I presented the overview of mental health service in Ghana. This was followed by conceptual review involving depression, anxiety and stress. The theory underpinning the study was then reviewed, this was followed by the empirical review of the study which involved; prevalence of depression, anxiety and

stress, prevalence of work place risk factors of depression, anxiety and stress, demographic factors associated with depression, anxiety and stress and occupational factors associated with depression, anxiety and stress among nurses. Finally, I concluded the literature review with the conceptual framework for the study.

Overview of Mental Health Service in Ghana

WHO defines mental health as a state of wellbeing that enables the individual to realise his or her potential, cope with stressors in the environment and contribute to his or her society (WHO, 2011). Mental health is considered to be one of the most important predictors of health in any community. Mental health affect every aspect of human life including personal, family, work life, impaired functioning and care giver burden (Khodadadi et al., 2016). The increase of pressure from society have become the source of mental health disorders among many people which makes it an important issue to consider (Adu-Gyamfi, 2017). Although the prevalence of mental illness in Africa is high, it has not been given the needed attention (Bird et al., 2011).

Globally, it is estimated that one out of every four persons will be diagnosed with a mental disorder at least once in his life time. In Ghana, the estimated number of people who suffer from mental disorders is most of the time based on the estimates of WHO because there is no comprehensive data on the incidence of mental disorders in the country (Adu-Gyamfi, 2017; Roberts, Mogan, & Asare, 2014). WHO estimates 13% of adult population in Ghana are likely to suffer from mild to moderate mental disorders, with about 3% of them likely to suffer from a severe form of mental disorder. However,

only 2% of people with mental health problems in Ghana have access to treatment, living a treatment gap of 98% (WHO, 2011).

Even though mental health has become a serious global health issue, mental health care in Ghana is faced with several challenges leading to slow growth in the mental health service delivery. One major weakness in mental health delivery in Ghana is low spending of government in the sector. The sector is severely under-funded by government and international donors. Development in the sector have been neglected by government and the private sector. There is lack of structures at the district and regional level for the provision of mental health care services. Even though children and adolescents represent about 40% of Ghana's population, mental health service for them is non-existent (Roberts et al., 2014; Wilson & Somhlaba, 2017).

Mental health infrastructure and services in Ghana favour those living in the southern part of the country. Additionally, Ghana like many low-and-middle-income-countries [LAMIC] is faced with shortage of mental health workforce (Asamoah, Osafo, & Agyapong, 2014). Consequences of poor mental health include discrimination and exclusion of people suffering from mental illness, low productivity, increase violence, drug abuse, suicide, increase crime rate and other social vices (Adu-Gyamfi, 2017).

In 2012, a new Mental Health Act (846) was passed in Ghana to improve mental services. The focus of the Act is to change the approach of mental health care from institutional care to community based. This was aimed at reducing stigma and discrimination against mentally ill people, and improve access to mental health care delivery in Ghana. The Mental Health Act advanced the provision of mental health care especially with treatment and

prevention of mental disorders (Roberts et al., 2014; Wilson & Somhlaba, 2017). However, access to mental health still remains a challenge to many Ghanaians especially, those in the northern and rural part of the country. There are only three psychiatric hospitals in Ghana and they are all located in the southern part of the country. This situation makes access to mental health care difficult for people who leave in the northern sector of the country.

The national standards for mental health service in Australia indicate that, mental health service works in partnership with its community to promote mental health and address prevention of mental health problems and or mental illness (Australian Department of Health, 2010). Similarly, the Mental Health Act (846) of Ghana also encourage community involvement in mental health care delivery. However, this has not been fully realized as mental health infrastructure in the communities remain inadequate to support the provision of mental health care in the communities. In addition, superstition, stigma, cultural and religious believes serves as a barrier to the integration of mental health care in to communities in Ghana.

The World Health Organization states that, quality improvement for mental health services should involve the following; improved child and adolescent mental health, research and evaluation of mental health services, adequate financing of mental health services, improved planning and budgeting for service delivery and proper organization of service delivery (World Health Organization, 2005). Ghana have taken steps to improve the quality of mental health services by establishing the Mental Health Authority to plan and organize mental health service in the country. However, a lot more needs to be done in the area of child and adolescent mental health, research

and evaluation of mental health service and providing adequate financing for the provision of mental health services in Ghana.

The provision of mental health service is dependent primarily on trained human resources rather than equipment. Workforce in mental health care comprise psychiatrist, psychologists, nurses, social workers, physical therapists, occupational therapists, law enforcement officers, clergy and traditional healers (WHO, 2011). In Ghana, mental health care is reliant on mental health nurses with few other professionals including psychiatrist and psychologist (Roberts et al., 2014). However, there is shortage of mental health nurses working in health facilities in the country (Wilson & Somhlaba, 2017). Community mental health nurses in Ghana lack proper training but have become the key stakeholders in the management of mental illness (Roberts et al., 2014). Inadequate number of mental health nurses working in various health facilities in Ghana coupled with high demand of their services expose them to suffer from mental disorders such as depression, anxiety and stress.

Conceptual Review

This section described concepts used in this study. The concepts include depression, anxiety and stress. Depression was first reviewed, followed by anxiety and finally stress.

Depression

Depression is derived from the Latin word “depressio” which means sinking. The depressed person feels dejected with a burden on their existence. It is a mood disorder that is characterized by the individual experiencing

normal transient low mood to severe clinical syndrome (Cooper, 2014). Depression is considered as a mental health condition consisting of affective disorders, being its natural symptoms. A state of sadness and unhappiness that may be transient or permanent accompanies this condition (Ashina et al., 2012). Depression is an affective disorder that results in loss of interest in life, sadness, lack of concentration, disturbance of sleep and impaired interpersonal relationship (Khodadadi et al., 2016).

Depression in the past has been expressed as "melancholy" or "sadness" however, there is a difference between these terms and depression. Depression is related to high levels of sadness that last over a period of time whiles sadness is a transient emotional state that is in response to an unpleasant situation or loss. Melancholy is related to sadness over things in the past that may not return to the individual (Doblyte & Jiménez-Mejías, 2017). It is the leading cause of disease burden globally, affecting millions of people. Depression is of public health concern because of the short and long-term effects it leaves on people. The prevalence of anxiety and stress is high among people diagnosed with depression (Kinser & Lyon, 2014).

The major symptoms of depression include persistent sad mood, difficulty in concentration, reduced energy, loss of interest in previously pleasurable activities, weight changes, changes in sleep pattern (insomnia or hypersomnia), psychomotor changes (agitation or retardation) and a pessimistic behaviour (Cooper, 2014). Depression can be described as a mental disorder which is characterized by the presence of sadness, loss of pleasure, feelings of guilt and low self-esteem, alterations in the sleep pattern and appetite, lack of concentration, and feelings of being tired which can

become persistent and recurrent, making the person dysfunctional in activities of daily living (Rotenstein et al., 2016). This condition is sometimes seen as a "mood disorder" or "mental disorder" but in both instances, depression is seen as a "psychological disorder". Depression can persist over time until it makes an individual who suffer from it dysfunctional (Dagan, Facompré, & Bernard, 2018).

In diagnosing depression, depressive symptoms must be present and persistent for at least two consecutive weeks and the symptoms should cause a significant decline in social functioning adjustment. Depression could be described as a symptom or syndrome of a disease. As a symptom of a disease, depression present in other mental health conditions such as schizophrenia and traumatic conditions. As a syndrome, it is characterized by sadness, guilt, disability and loss of impulse (Sanz & García-Vera, 2017).

The two core symptoms of which at least one has to present for an individual to be diagnosed of depression as required in DSM-IV are depressed mood and loss of interest or pleasure. The DSM-IV categorizes depression into two major categories which are depressive disorders (unipolar) and bipolar disorders (American Psychiatric Association, 2013). On the other hand, the ICD-10 categories depression into manic episode; bipolar affective disorder; persistent mood (affective) disorders and unspecified mood (affective) disorder.

Depression as a disease is described as a disorder with a biological cause, a course, prognosis and with an established form of treatment. The neurotic expression of the emotion "sadness" actually is what is considered a depression (Doblyte & Jiménez-Mejías, 2017). Depression constitutes a multi

factorial disorder that involves a set of specific behavioural, cognitive, social and biological symptoms that causes the individual difficulties in daily functioning (Dagan et al., 2018). Depression is one of the most common mental health disorders, in view of this understanding it's nature and prevalence is important.

Anxiety

The word anxiety has as its root from the Latin "anxietas" which means to choke, trouble and upset (Clark & Beck, 2010). History has it that, anxiety is an emotion that pre-exists before the evolution of man. Nearly a century ago, Sigmund Freud coined the term anxiety neurosis, which he believed resulted from dammed-up libido. He explained anxiety as a physiological increase in sexual tension which leads to a corresponding increase in libido. The normal outlet of such tension, in Freud's view, is sexual intercourse; but sexual practices such as abstinence and coitus interruptus prevent tension release and produced neuroses. The conditions of heightened anxiety related to libidinal blockage included neurasthenia, hypochondriasis, and anxiety neuroses, all of which were regarded by Freud as having a biological basis (Starkstein, 2018).

Anxiety is a normal emotion exhibited by humans. It is one of the most prevailing of all psychiatric disorders among the general population. Moderate anxiety stimulates the individual to anticipate and adapt to challenging and stressful situations. High levels of anxiety destabilize the functional abilities of the individual. Anxiety is considered a disorder when it is out of proportion to the stress in duration or severity, when it produces significant distress and

when it causes psychological, social and biological impairment (Sharan, 2010).

Anxiety is defined as an individual's normal response to threats, but it can be abnormal when its level is out of proportion to a threat (Clark & Beck, 2010). The frequency and intensity of symptoms of anxiety varies from person to person. Anxiety can emanate from every aspect of human relationships which includes health, social relationship, examinations, careers and several environmental situations that confront people on daily basis. It is a normal and adaptive way of living, to be fairly anxious about certain situations in life (Trivedi & Gupta, 2010).

Anxiety is a word used in every day conversation and refers to a complex relationship between a person and daily life situation (Hallam, 1992). It is most of the time seen as an unpleasant and uncomfortable feeling of apprehension, accompanied by one or more bodily sensations. Anxiety is an alerting signal that warns an individual of imminent danger and enables him to take measures to deal with it. Anxiety and fear may exist simultaneously or follow each other in different situations. Anxiety as a disorder is characterized by a failure to either elect an adaptive response or to inhibit a maladaptive response given in a situation. Anxiety is a state of arousal of an individual following the perception of real or imagined threat to the body (Fajkowska, Domaradzka, & Wytykowska, 2018).

Physical signs and symptoms of anxiety include increased heart rate, blood pressure, and respiratory rate, sweating, difficulty swallowing, dizziness, and chest pain. Because anxiety may be so debilitating, some individuals may turn to smoking, and alcohol and/or drug abuse (Kahn, 2001).

Symptoms of mood include tension, panic, apprehension and irritability. Motor symptoms experienced by individuals diagnosed with anxiety include restlessness, fidgeting, pointless motor activities (American Psychiatric Association, 2013).

The DSM-IV classifies anxiety disorders into major categories which includes panic disorder (with or without agoraphobia), agoraphobia without panic, social phobia, specific phobia, Generalized Anxiety Disorder [GAD], acute stress disorder, posttraumatic stress disorder, obsessive compulsive disorder, anxiety disorder not otherwise specified (American Psychiatric Association, 2013).

There is no specific cause for anxiety disorders, but there are a number of factors that may be involved. Anxiety disorders may be caused by the combination of biological, psychological and environmental factors. These may include biological factors such as genetics, substance use, medical and psychiatric condition. Psychological factors that can cause anxiety include over prediction of fear, self-defeating beliefs, oversensitivity to threat. Lastly environmental factors that can cause anxiety include stressful or traumatic life events, alcohol, medication and substance use (Fajkowska et al., 2018).

Anxiety is part of normal emotion of people but when in excess can destabilize the individual. The factors that causes anxiety are increasing each day. Anxiety not identified and treated may worsen the prognosis of somatic conditions (Trivedi & Gupta, 2010). The burden of disease experienced by individuals suffering from anxiety disorders such as personal distress, psychic pain, pathological anxiety, physical complaints, disrupting family life and professional career makes it imperative to study this condition.

Stress

Stress is part of daily life and is experienced throughout the lifespan of people, that is from childhood to adulthood. Stress is pervasive in human life due to the complexity of human personal, social and environmental interactions (Shahsavarani, Azad, Abadi, & Kalkhoran, 2015). Stress among nurses have become a matter of concern due to its influence on the job performance of nurses in health institutions. Stress is the emotional and physical burden caused by people's response to pressure from the outside and internal world (Dapaah, 2014).

Stress is an ambiguous concept which is attributed to varied phenomena and definitions. Stress can be described as the body's way of rising to a challenge and preparing to meet tough situation with focus, strength, stamina and heightened alertness (Eskay & Nwefuru, 2019). Additionally, stress can be seen as a process in which environmental events or forces threaten the wellbeing of individuals in the society (Oghenetega, Ejedafiru, & Rabiu, 2014). Furthermore, stress is described as any influence by the internal and/or surrounding environment on living being which disrupt its homeostasis (Shahsavarani, Ashayeri, Lotfian, & Sattari, 2013). Stress can further be explained as the call to any physical, psychological, and/or emotional factor which results in physical, and/or psychological tension (McEwen, 2007).

Stress as expressed by these authors is caused by an individual's reaction to an external stimulus. However, stress may be either external with environmental source, or caused by internal perceptions of the individual. External factors that causes stress are not in their essence stressful but the

individuals' system of perception interpret them as such. Factors, such as sudden and horrible blares, or observing specific types of objects that resemble acute incidents for individuals, may be interpreted as strains. Human experience stress as threatening whenever she/he cannot believe to have adequate resources to cope with such hindrances. The internal factors that causes stress involves neurological and physiological reactions to stress (Lucas, Scammell, & Hagelskamp, 2005).

The biological, psychological or social demands from the environment that causes stress is termed stressors. They have the potential to create stress when the individual perceives them as demand that may exceed that person's abilities to respond. Stress is influenced by the person's perception of the situation; the persons past experience; the presence or absence of social support and individual difference with regard to stress reactions (Shahsavarani et al., 2013). Individuals experience of stress is influenced by personal events in their lives or at work.

In mental health, stress is seen as a feeling of mental pressure and tension. Low levels of stress on the people might be desired, useful, and even healthy. Stress in low levels is positive and can improve biopsychosocial health and facilitate performance. Positive stress serves as motivation, adaptation, and reaction of an individual to the surrounding environment. High levels of stress results in negative biological, psychological and social functions of the individual and cause harm to people (Shahsavarani et al., 2015). Stress is seen as a value to organizational success if managed effectively however, extreme stress interferes with one's productivity and reduces one's physical, psychological and emotional health (Dapaah, 2014).

Stress may be unconscious and is experienced by everyone, which makes it difficult to isolate stress from the human being. A certain amount of stress is necessary for survival however, persistent experience of stress by an individual may lead to damaging mental and physical health such as drug abuse, apathy, insomnia, eating disorders, absenteeism, lack of satisfaction with life and feeling of inadequacy (Khodadadi et al., 2016).

Theoretical Review

This section explains the theory that underpinned the study. The Beck's Cognitive Theory of Anxiety and Depression formed the bases for this study.

Beck's Cognitive Theory of Anxiety and Depression

This study was guided by Beck's Cognitive Theory of Depression and Anxiety. A number of theories have attempted to explain the symptoms expressed by persons suffering from depression and anxiety. Examples of such theories include behaviourist theory, psychodynamic theory, learned helplessness and Beck's cognitive theory. Beck's cognitive theory argues that negative automatic thoughts of an individual which is generated by dysfunctional beliefs about the self is the cause of depressive symptoms (Beck, 1972). Depression is caused by individual's view of oneself, instead of one having a negative view of oneself due to depression. Beck's cognitive theory of anxiety states that an individual's experience of anxiety is related to overly negative interpretations of stimuli, events or situations (Clark & Beck, 2010). Cognitive theory of anxiety and depression was developed by Aaron T. Beck (1967) an American psychiatrist working at the University of

Pennsylvania to explain the psychological process involved in anxiety and depression (Beck, 1967).

Beck was trained with the principles of psychoanalysis and he tried to validate the psychoanalytic concept of anger turned to the self as a cause of depression. During the examination of the stream of thoughts and dreams of depressed patients, he discovered that the main theme is not anger but defeat and loss (Allen, 2014). Beck's observations showed a constant negative predisposition in how individuals who were depressed processed information. Beck differentiated cognitive process from the psychoanalytic approach, focusing the treatment on present problems as opposed to uncovering hidden traumas from the past, and on analysing accessible rather than unconscious, psychological experiences (Beck, 1967).

Beck's cognitive theory of depression was refined to suggest that predisposing beliefs could be differentiated according to whether the individual's personality was primarily autonomous or sociotropic. Autonomous individuals would more likely become depressed following an autonomous event (e.g., a perceived personal failure) than following a sociotropic event (e.g., loss of a relationship), and the reverse would be true for sociotropic individuals (Sato & McCann, 2012).

Beck's cognitive theory was initially applied to depression but later in the 1970s and 1980s he turned his attention to the application of cognitive theory to anxiety disorders. Beck developed cognitive therapy out of cognitive theory of depression and anxiety which is widely researched and used in psychotherapy (Reilly, Sokol, & Butler, 1999). This theory have since been adapted to account for a wide variety of disorders and problems including

schizophrenia, stress, bipolar disorder, marital distress and substance use (Brown et al., 2005).

Beck's conjectures that, underlying dysfunctional beliefs of an individual can serve as a bases for the occurrence of depression. These thoughts are centred on a negative cognitive triad, which is composed of thoughts about the self, one's surroundings and about one's future (Allen, 2014). In Beck's theory, cognition plays an important role as it regulate all other functions of the individual. Cognition involves the process used to identify and predict the relationship between an individual, object and events. Beck argue that, schemas are involved in screening, coding and evaluating information. Schema is a cognitive structure made up of tacit assumptions that construct interpretations of the self and the world, organize experiences and guide behaviour which are usually established in early childhood (Beck, 1972).

Depressed individuals misinterpret facts and experiences negatively thus, limiting their focus to negative aspects of situations which makes them feel hopeless about the future. Beck's claims the main feelings of depression are failure and loss. Individuals who suffer from emotional problems such as anxiety and stress are trapped by a particular negative or unhelpful way of looking at their present situation (Reilly et al., 1999).

Beck's cognitive theory of anxiety begins with the understanding that, the nonpathological expression of anxiety is good. It alerts an individual to possible threat in the environment and prepares one to adapt. However, anxiety disorders present inappropriate intensified and prolong anxiety that may represent relatively little actual threat (Clark & Beck, 2010). The theory

includes a two-step evaluation of threat or danger. First in anxiety, the individual perceive that they are threatened with either physical or social harm. Their perception is biased so that they see danger when it does not really exist, they overestimate the treat. The second step involves an estimation of one's ability to cope with the perceived danger. Individuals with anxiety disorders make false evaluation of their ability to cope with the resources available. They underestimate these resources. In conclusion, overestimating the threat and underestimating their resources, individuals experience stress and anxiety in response to perceived stress (Reilly et al., 1999).

In understanding anxiety and depression, Beck's cognitive theory of anxiety and depression which projects that, dysfunctional beliefs are created by early experiences in an individual's life. He believes that, critical events in one's life would activate these beliefs, which would then create negative automatic thoughts about oneself (Allen, 2014). These thoughts then lead to symptoms of depression, anxiety and stress which then reinforce more negative thoughts. Beck developed a therapy to treat mental disorders by intervening to change negative thoughts and behaviours that causes unpleasant emotions in an individual (Brown et al., 2005).

In a study to scrutinize Becks Cognitive Triad, it was identified that there was no clear distinction between negative thoughts, and that there is actually one-dimensional negative view of the self. They argued that maintaining all three aspects of the cognitive triad as separate dimensions is not necessary for the determination of depression (McIntosh & Fischer, 2000).

Beck's cognitive theory of depression, deals strongly with cognitive perceptions that affect the brain, which is different from the behavioural theories that explains depression as a learned behaviour. It states that, depressed individuals show a negatively biased view of the self, the future and their personal world. They spontaneously recall of negative events more easily than positive ones (Beck, 1967). This makes them generalize expectation that future events will turn out negatively.

Becks theory have undergone extensive reviews and such reviews have produced results that are by large in support of the theory. Most of these reviews supported the correlation between negative emotions and distorted thinking occurring together (Whisman & Kwon, 1993). However, few studies have been conducted to test the causal hypothesis of the theory. One of such hypothesis is that schemas when activated by life events, lead to the developments of symptoms of mental illness (Gotlib & Krasnoperova, 1998).

Studies that were performed on Beck's Cognitive Theory include a study on college admissions. It was found that student's negative view about their future controlled between their dysfunctional attitude and increase in depressed symptoms. Students who did not get admission into college of their choice doubted their future and this led to development of symptoms of depression. This finding back Beck's claim that, risk for anxiety and depression is due to dysfunctional thinking (Abela & D'Alessandro, 2002). In a similar study of adolescent depression to validate Beck's theory it was found that, students depression was often associated with dysfunctional beliefs and negative attitude towards the future. It was suggested that cognitive theory has a reasonable validity for describing symptoms of depression (Moilanen, 1995).

Beck's Cognitive Theory of Anxiety and Depression formed the foundation for the development of Beck's Depression and Anxiety Inventory which were used as instrument to measure depression and anxiety in this study. Symptoms of depression, anxiety and stress (emotions, cognition and behaviour) occurs when pathological schemas are activated by stressful events in the life of an individual. Mental health nurses' dysfunctional thoughts about their job, marital status, educational level, number of years spent in the nursing profession, income, sleep hours, work hours, work place violence and conflict with colleagues may lead to the development of symptoms of depression, anxiety and stress. Negative thoughts about one's self, events and things in the environment exposes the individual to depression, anxiety and stress.

Empirical Review

Prevalence of Depression, Anxiety and Stress Among Nurses

Depression, anxiety and stress are associated with serious health implications that affect not only the quality of life of an individual but their social functioning as well (Tsaras et al., 2018). Depression and anxiety are cooccurring conditions with anxiety often leading to the development of depression among nurses. Depression, anxiety and stress experienced by nurses in the work place cannot be totally prevented but it is important to consider the prevalence of these conditions in the work place. It is important to have a healthy workforce in the hospital to ensure delivery of quality health care to the patient and relatives (Maharaj et al., 2019).

Studies conducted around the world indicate high prevalence of depression, anxiety and stress among nurses. In a cross-sectional study conducted in Greece among 110 mental health nurses working in public psychiatric hospitals using the Patient Health Questionnaire-2 [PHQ-2] and the Generalized Anxiety Disorder-2 [GAD-2] concluded that, depression and anxiety are in high prevalence among mental health nurses with 52.7% and 48.2% of them at risk of depression and anxiety respectively (Tsaras et al., 2018).

The findings of the study suggest that, mental health nurses working in public psychiatric hospitals in Greece are at high risk of developing depression and anxiety. Major areas of weakness of the study included the use of the Patient Health Questionnaire-2 [PHQ-2] and the Generalized Anxiety Disorder-2 [GAD-2] to determine the prevalence of depression and anxiety among mental health nurses. The PHQ-2 and GAD-2 are ultra-brief instruments that are used as an initial screening method in primary and secondary care settings. Both instruments contain two questions each on a four-point scale with a cut point of ≥ 3. The use of these instrument may not be appropriate for such a study and this may have accounted for the high prevalence of depression and anxiety among mental health nurses.

In addition, a cross sectional study conducted in Australia to assess the prevalence and risk factors of depression, anxiety and stress among 102 nurses using the Depression Anxiety and Stress Scale [DASS] revealed that, depressive symptoms were common in nurses with a prevalence rate of over 30%. Also, the prevalence of anxiety and stress were found to be 41.2% and 41.2% respectively. (Maharaj et al., 2019).

These, results indicate that more than a quarter of nurses in Australia had presented with severe depressive symptoms and almost half of them presented with high levels of anxiety and stress. The study findings reveal that, a large portion of nurses experience psychological distress. However, the use of 102 nurses as the sample for the study may not be representative enough to generalize the findings to all nurses in Australia.

Likewise, a cross-sectional survey to identify the prevalence of burnout, depression, anxiety and stress in Australian midwives using the Copenhagen Burnout Inventory [CBI] (Personal, Work and Client subscales), and Depression, Anxiety, and Stress Scale [DASS] with a sample of 1037 reveals a high level of personal and work-related burn-out with 48.4% and 25.6% of prevalence respectively. Furthermore, 20% of midwives reported significant symptoms of depression, 20.4% anxiety and 22.1% stress (Creedy et al., 2017).

The study revealed that, the prevalence of burn-out, depression and anxiety among midwives is high. The findings further suggest the pervasive impact of burnout, depression, anxiety, and stress symptoms is across midwives' personal and work lives. However, the response rate for the data collection was low. Out of the expected 4600 registered midwives in Australia, a total of 1037 survey forms were received giving an estimated response rate of around 22.5% and therefore the findings may not be a true reflection of psychological disorders on Australian midwives.

Furthermore, in Hong Kong, a study to examine the incidence of depression, anxiety and stress using the Depression, Anxiety and Stress Scale [DASS-21] with a sample size of 850 nurses indicated that, the prevalence rate of depression, anxiety and symptoms of stress came in at 35.8%, 37.3% and 41.1% respectively (Cheung & Yip, 2015). Also, in establishing the prevalence of stress, anxiety and depression among clinical nurses in Vietnam using the Depression, Anxiety and Stress Scale [DASS-21] in a cross-sectional study reveals significant levels of mental health challenges among nurses. 18.5%, 39.8% and 13.2% of nurses suffered from stress, anxiety and depression respectively (Tran et al., 2019).

The results from these studies indicate high prevalence of depression, anxiety and stress among nurses in Asia. The high incidence of nurses suffering from depression, anxiety and symptoms of stress is worrying as this affect negatively the performance of nurses in the clinical setting. A major weakness of Cheung and Yip's (2015) study was that, the study obtained a response rate of 5.3% and therefore could not have been seen as s true reflection of the prevalence of depression, anxiety and stress among nurses in Hong Kong.

In a study that evaluated the effects of perceived stress on nurses in the United State of America [USA] indicated that, nurses were not mentally healthy, as 92% of nurses were suffering from moderate-to-very high stress level (Jordan, Khubchandani, & Wiblishauser, 2016). Also, in Iran, 71% of certified critical health nurses were identified to be suffering from stress (Vahedian-Azimi et al., 2019). In a similar study in Tabriz, Iran using descriptive correlational design to determine the relation of depression,

anxiety and stress with personal characteristic of nurses indicate high prevalence of depression, anxiety and stress among nurses (Khodadadi et al., 2016).

The results of these studies indicate high level of stress among nurses. This was linked to inadequate salary and lack of appreciation from the employers. High levels of stress impacted negatively the well-being of the nurses and their job performance. Low income level of nurses and the lack of recognition from their employers also served as risk factors that expose nurses to various forms of mental disorders.

Similarly, Chen et al. (2016) in their study in Taiwan to explore the impact of job content and stress on anxiety, depressive symptoms and self-perceived health status among nurse practitioners identified that, nursing practitioners had moderate job stress. The study showed that 33.5% of nurse practitioners experienced mild anxiety and 24.22% of them experienced moderate-to- severe levels of anxiety. A longitudinal cohort study in Taiwan aimed at exploring the risks and influencing factors of treated anxiety, depression, and insomnia among nurses reveals that generally, based on hazard ratios of 3-year data, the results suggest that nurses have lower hazards of treated anxiety and depression than the general population, although they have a higher hazard of treated insomnia (Huang et al., 2018).

It was concluded from the study results that, nurse practitioners experienced moderate job stress, mild anxiety and depressive symptoms, and below-average self-perceived health. It was further indicated that, nurses have lower risk of experiencing depression and anxiety. These findings are not consistent with the findings of other studies that identified high prevalence of

depression, anxiety and stress among nurses. This difference in the findings may have resulted from the use of longitudinal cohort design in the study.

The prevalence of depression, anxiety and stress in Africa is not different from other parts of the world. A study in Tunisia to identify the prevalence of anxiety and depression among medical residents using the Hospital Anxiety and Depression Questionnaire indicates that, 43.6% and 30.5% showed symptoms of anxiety and depression respectively. Twenty percent of medical residents who experienced anxiety also experienced symptoms of depression (Marzouk et al., 2018). In addition, a cross-sectional study in Ethiopia to assess the prevalence of depression, anxiety, stress and their associated factors among Jimma University staff using the Depression, Anxiety and Stress Scale [DASS-21] indicate that 22.9%, 19.2% and 28.2% of university staff were at risk of developing depression, anxiety and stress respectively (Yeshaw & Mossie, 2017).

Even though the study population in the work of Marzouk et al. (2018) and Yeshaw and Mossie (2017) were medical residents and university staff respectively, the prevalence of depression, anxiety and stress was not different from studies that involved nurses. The results indicate high prevalence of depression, anxiety and stress in Africa which is not different from what is reported in studies in other parts of the world.

A cross-sectional study in Ghana to identify the prevalence of stress, anxiety and sleep disorder among nurses using the Perceived Stress Scale [PSS] and Kessler Psychological Distress Scale using 243 nurses revealed that, 63% of nurses suffered from anxiety and 83% of them were stressed (Amidu et al., 2018).

The results from the study indicated high anxiety and stress level among nurses in Ghana. The prevalence of anxiety and stress recorded in this study is higher than what has been reported in similar studies elsewhere. These inconsistencies may have resulted from the difference in study settings. However, the sample (243 nurses) for the study may not be representative enough to generalize the findings to all nurses in Ghana.

Work Place Risk Factors of Depression, Anxiety and Stress among Nurses

The nature of nursing profession makes nurses the most vulnerable working group in the health care team to experience high stress levels due to the fact that are continuously exposed in emotional challenging conditions (Fradelos et al., 2014). The stressful nature of the working conditions put nurses on an increasing risk to present psychiatric morbidity such anxiety and depression that can affect their personal, family and professional life. The type of ward or clinical setting where nurses work have been linked to high prevalence of stress (Khodadadi et al., 2016; Papathanasiou, 2015). Poor mental health of nurses can have a negative impact on the nurse and the health care system as a whole (Maharaj et al., 2019).

The multidimensional presentation of depression, anxiety and stress makes it difficult to predict the risk factors of these conditions. Predicting factors of depression, anxiety and stress among nurses include; age, marital status, level of education, personal experience, economic status, emotional maturity, heavy work load, different shift rotation and work experience (Khodadadi et al., 2016; Koinis et al., 2015; Tsaras et al., 2018). Poor nurse patient ratio, excessive work load, frequent breakdown of equipment, and shift rotation systems used in hospitals were identified to be risk factors of stress

among certified critical care nurses in Iran (Vahedian-Azimi et al., 2019). In Australia, nurses who were not satisfied with their job reported symptoms of stress and depression than other categories of nurses (Maharaj et al., 2019).

Midwives have reported high levels of stress due to the nature of their work, workplace conditions, and their socialization into ways of working that minimize self- care. workplace circumstances contribute to some midwives becoming highly susceptible to occupational burnout, which eventually contributes to reduced quality of care (Creedy et al., 2017). It was further revealed that, among university, staff, gender, age, marital status, education, income level, hours of sleep and job satisfaction were associated with the prevalence of depression, anxiety and stress (Yeshaw & Mossie, 2017).

Results from the studies reveals that, the risk for depression, anxiety and stress included the type of ward or clinical setting where nurses work, age, marital status, level of education, personal experience, economic status, emotional maturity, heavy work load, different shift rotation and work experience. Even though these factors where identified to increase the risk of developing mental disorders among nurses, it was not clear why some nurses with the same level of risk may not experience depression, anxiety or stress.

Demographic Factors Associated with Depression, Anxiety and Stress

Personal characteristics of individuals such as age, gender and marital status play key role in the study of the nature of diseases (Tran et al., 2019). Demographic characteristics such as marital status, education, wealth and age have been linked to satisfaction with life, well-being and improve life expectancy (Ghazwin et al., 2016). A cross-sectional study to examine the prevalence and associated risk factors of depression, anxiety and stress among

nurses in Hong Kong indicated that, female, divorced/widowed/separated nurses reported more episodes of depression, anxiety and symptoms of stress than male nurses. Also, age was found to have no significant relationship with depression but interestingly, age had significant correlation with anxiety and stress symptoms. The results further indicated an inverse relationship between age and depression, anxiety and symptoms of stress. As the age of nurses increased, depressive, anxiety and stress symptoms decreased (Cheung & Yip, 2015).

The risks of psychiatric problems in healthcare-seeking nurses seem to vary among different demographic subgroups. A study showed that, middle aged and late middle-aged nurses had significantly higher risk for anxiety, depression, and insomnia when compared to younger nurses, although the middle aged and late middle-aged nurses still had significantly lower risks for anxiety, depression, and insomnia than the general population. Male nurses had a significantly lower risk for anxiety when compared to female nurses, although female nurses still had a significantly lower risk for anxiety than the general population (Huang et al., 2018).

The prevalence of depression among female nurses is higher than male nurses working in health care facilities (Ghazwin et al., 2016). Furthermore, in Iran female nurses had higher risk of experiencing depression, anxiety and stress as compared to male nurses (Khodadadi et al., 2016). In addition, a study in Ethiopia among university staff revealed that, female staff were more likely to develop depression, anxiety and stress as compared to male staff and widows were more likely to have stress than married once (Yeshaw & Mossie, 2017).

In a similar study in Taiwan, it was identified that, nurses without degree showed high levels of job stress than nurses with degree. Nurses aged 34 years and below experienced higher level of stress than nurses who were 40 years and above. In relation to number of years of work, the study showed that, nurses with 5-10 years of work experience showed higher level of job stress than nurses with over 10 years of work experience (Chen et al., 2016).

Furthermore, nurses who were 29 years and older showed higher risk for anxiety than the general population but showed lower risk for depression than the general population. Nurses working in medical hospitals within the ages of 30-44 years had higher risk for developing anxiety, depression and insomnia. Male nurses suffered from lower risk for anxiety than female nurses (Id et al., 2018). Demographic characteristics such as level of education, age and number of years of work have significant relationship with job related stress.

In addition, a study among mental health nurses in Greece, revealed that nurses who were single or divorced were at higher risk of experiencing depression than married nurses. Furthermore, marital status and educational level were highly associated with anxiety and age was positively correlated with risk of experiencing anxiety, as nurses increase in age the risk for developing anxiety also increased. Nurses who obtained a university degree were more likely to develop depression and anxiety. The higher the level of education of nurses, the higher their risk of experiencing depression and anxiety (Tsaras et al., 2018).

A study in Tunisia among medical residents shows that, anxiety is significantly associated with age, marital status and gender. It was also revealed that married and older medical residents experienced more symptoms of depression (Marzouk et al., 2018). Additionally, it was identified in Iran that, nurses who have higher education such as master of science in nursing were less likely to experience depression, anxiety and stress as compared to nurses with lower form of education such as bachelor of science in nursing (Khodadadi et al., 2016).

The study findings show that, demographic characteristics that are associated with depression, anxiety and stress include age, gender, marital status, and educational level. While some studies revealed that, higher educational status reduced the risk of stress and anxiety among nurses (Khodadadi et al., 2016) others reported the opposite, that is the higher the level of education of nurses, the higher their risk of experiencing depression and anxiety (Tsaras et al., 2018). These conflicting reports makes it difficult to determine the level of association between demographic characteristics and depression, anxiety and stress.

Occupational Factors Associated with Depression, Anxiety and Stress

The prevalence of mental health challenges varies among health professionals, not all of them develop signs of stress or depression. Conditions at the work place such as heavy workload, conflict and violence can be associated with high risk of developing mental health condition among health care professionals (Ghazwin et al., 2016; Koinis et al., 2015; Tran et al., 2019). The responsibility of taking care of human life makes the nursing professional very stressful because, lack of action by the nurse can result in

loss of life. Nurses who work in departments such as the emergency unit and intensive care units experience high rate of mental health challenges as compared to other nursing staff because of increased workload and dealing with death situations (Khodadadi et al., 2016; Koinis et al., 2015).

Maharaj et al. (2019) indicated in their study that, occupational factors in the hospital associated with the development of depression, anxiety, and stress were limited. Job dissatisfaction among nurses was associated with an increased risk of distress and depression that is nurses who were not satisfied with their profession is at high risk of developing depression. Also, the prevalence of anxiety was not found to increase with an increase of job dissatisfactions among nurses. Furthermore, staff who were not satisfied with their work were 10.6, 7.1 and 6.7 times more likely to develop depression, anxiety and stress respectively. Staff with a history of conflict with colleague at work within the past month were 2.3, 2.5 and 2.7 times more likely to develop depression, anxiety and stress respectively. Those who were middle income earners were less likely to suffer from depression anxiety and stress (Yeshaw & Mossie, 2017).

Likewise in Hong Kong, nurses who were monthly middle-income earners were 1.9 times more likely to report anxiety than those earning higher monthly household income (Cheung & Yip, 2015). Additionally, in Iran, lack of collaboration and support from colleagues, poor physician and nurse relationship and inadequate salaries were identified to be risk factors for stress among critical care nurses (Khodadadi et al., 2016; Vahedian-Azimi et al., 2019). Similarly, nurses who were abused emotionally be their colleagues at

the workplace were more likely to report mental health challenges (Perry et al., 2015).

In a cross-sectional study in India which aimed to find out the level of stress among staff nurses, indicated that, doctor's, nurses', paramedical staff's and attendants' attitude was not found to significantly influence nurses' stress level. Instead, poor to satisfactory attitude of the male patients compared to female patients' attitude was a major contributory factor in nurses' stress (Davey, Sharma, Davey, & Shukla, 2019). One of the greatest causes for nurses' stress at the hospital is their lack of preparation in handling the emotional needs of patients, which causes anxiety and stress within the nursing staff. Nurses inability to identify and manage patients' emotional needs predispose them to high risk of experiencing depression, anxiety and stress.

Furthermore, it was identified that, the hospital or department in which nurses work have a statistically significant positive impact on the level of stress among them. Evidence suggests that job demands have a significant impact on well-being of nurses resulting in fatigue, psychosomatic symptoms, and emotional exhaustion (Khodadadi et al., 2016). Different work settings may pose varying levels of job demands on the staff. It was found that a large number of nurses posted in ICU/emergency department suffered from stress followed by those posted in medicine and surgery department. For example, nurses who worked in emergency department reported higher job demands and lower decision-making authority than those in paediatric palliative care unit. It should be noted that, the risk for developing mental health conditions varies from one department to another. Nurses through their training should be well

equipped on department specific task (Davey, 2019; Khodadadi et al., 2016; Koinis et al., 2015).

Moreover, in Greece, it was identified that psychiatric wards were discouraging and poses a lot of stress to nurses who work in such environment. Mental health nurses who worked in such wards experienced high symptoms of stress and depression. Nurses who work in mental health facilities have higher rate of suicide as compared to others who work in the general hospital (Tsaras et al., 2018). In addition, nurses who work in tertiary care facilities such as regional and teaching hospitals have higher risk for developing depression and anxiety as compared to nurses working in primary health care facilities such as health centres. These findings can be associated with heavy work load of nurses who work in tertiary hospitals.

Working hours of nurses have shown to have positive correlation with the prevalence of depression and anxiety. Nurses who work for longer hours and in a shift system have higher risk for developing depression, stress and anxiety (Id et al., 2018; Khodadadi et al., 2016). Working in shift system negatively affect the physical, emotional and psychological wellbeing of nurses. The prevalence of mental health disorders among nurses who work in shift system is higher than those who do not work in such systems (Perry et al., 2015). Contrary to these findings, a study in Ghana found that there is no significant difference in the prevalence of stress and anxiety between nurses who work in shift rotation as compared to fixed shift workers (Amidu et al., 2018).

On regular basis, nurses are expected to form working relationship with patient and relatives. Dealing with patient and family on regular basis could expose nurses to high levels of stress. Threats and aggression from patients and relatives increases emotional stress among nurses which results in increase absenteeism (Vahedian-Azimi et al., 2019).

The studies reviewed indicate that, nurses who are exposed to occupational factors such as heavy workload, conflict, violence, Job dissatisfaction, inadequate salaries, lack of collaboration and support from colleagues are at risk for developing depression, anxiety and stress. Also, it was further revealed that, longer working hours, department in which nurses work and work in shift rotation are associated with an increase in the incidence of depression, anxiety and stress among nurses.

The literature reviewed so far show that, a number of studies have assessed the prevalence of depression, anxiety and stress among nurses who work in general hospitals using quantitative research designs (Abdallah & Gabr, 2014; Amidu et al., 2018; Cheung & Yip, 2015; Creedy et al., 2017; Gong et al., 2014; Letvak et al., 2012; Maharaj et al., 2019; Tran et al., 2019; Veloso et al., 2016; Yeshaw & Mossie, 2017; Yoon & Kim, 2013). However, several gaps exist in the scholarly literature. Few studies have been conducted among nurses working in psychiatric hospitals (Atindanbila et al., 2012; Tsaras et al., 2018). Literature on depression, anxiety and stress among nurses working in psychiatric hospitals is limited in Ghana (Amidu et al., 2018; Atindanbila et al., 2012). The studies reviewed focused on the prevalence of depression, anxiety and stress among general nurses, few have been conducted on mental health nurses. Therefore, very little is known about the prevalence

of these condition among mental health nurses in Ghana. More so, limited studies exist on socio-demographic characteristics that predict depression, anxiety and stress among mental health nurses. Therefore, this study aimed at determining the prevalence and risk factors of depression anxiety and stress among mental health nurses in Ghana.

Conceptual Framework

The conceptual framework for this study was developed by the author and informed by Beck's cognitive theory of depression and anxiety. It is aimed at describing the variables in this study and how they relate to each other.

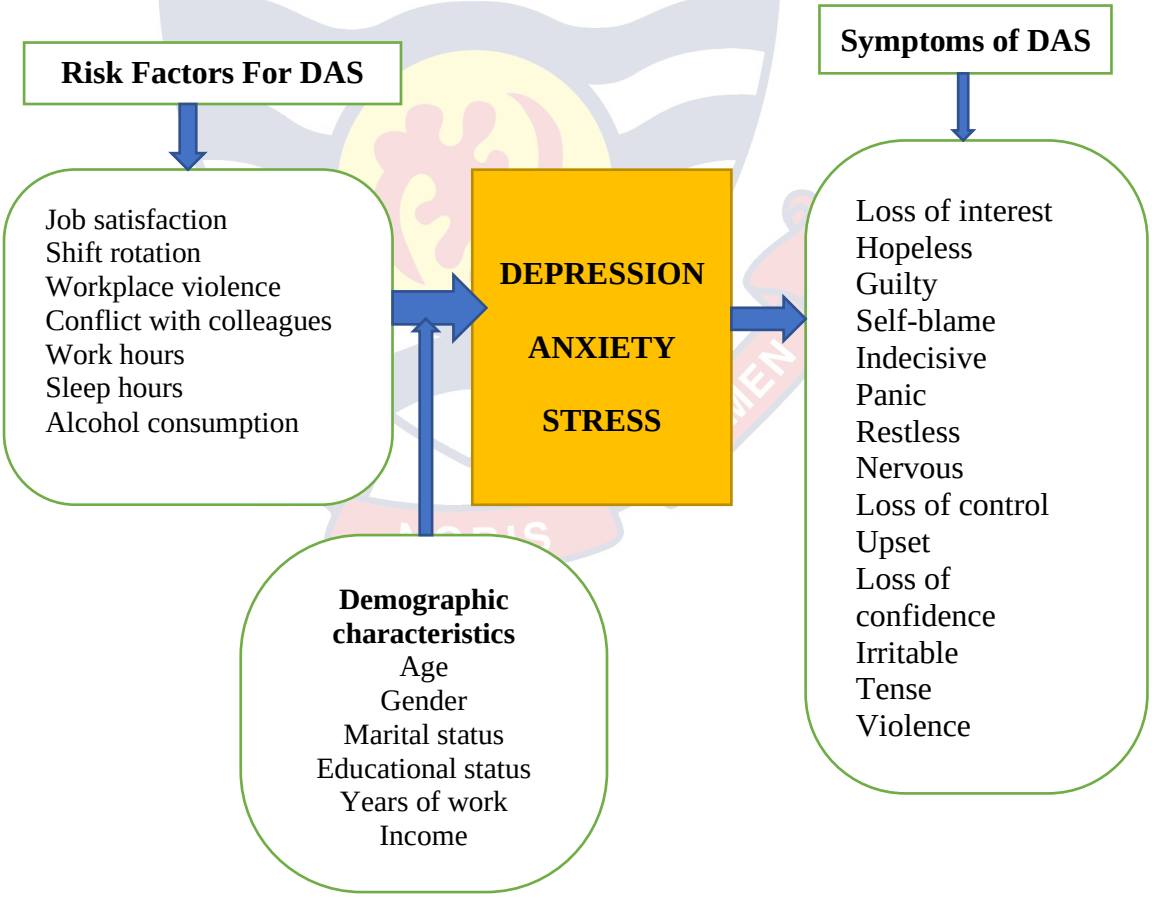


***Figure 1*: Conceptual Framework of Depression, Anxiety and Stress**

Author's Construct, Informed by Beck's Cognitive Theory (Beck, 1967)

The conceptual framework shown in Figure 1 guided this study. The risk factors for developing depression, anxiety and stress, demographic characteristics that influence these mental health disorders and their symptoms are represented in this conceptual framework. This framework was informed by Beck's Cognitive Theory of Anxiety and Depression (Beck, 1967). In Beck's theory cognition plays an important role in the development of depression, anxiety and stress. He argues that, dysfunctional beliefs about the self, events in one's life and the world create negative thoughts that lead to symptoms of depression, anxiety and stress (Clark & Beck, 2010). The negative biased beliefs of nurses about their job, shift rotation system, work hours, sleep hours, age, marital status, educational status, years of work and income may increase depression, anxiety and stress symptoms among them. Nurses with negative view about their future may develop symptoms of depression, anxiety and stress which is manifested in hopelessness, loss of interest, guilt feelings, self-blame, indecisiveness, panic, restlessness, nervousness, loss of control, loss of confidence, irritability and feeling of tension (Abela & D'Alessandro, 2002).

In this study, the concepts depression, anxiety and stress have been operationally defined to show the variables that constitute these concepts. Depression is defined as the presence of sadness, loss of interest, feelings of guilt, self-blame, alterations in the sleep pattern and indecisive which can become persistent and recurrent, making the person dysfunctional in activities of daily living. Anxiety on the other hand is described as a condition that is characterized by panic, restlessness, nervousness, loss of control and inability to sleep as a result of perceived threat. Also, stress is defined as loss of

control, loss of confidence, upset, irritable, tense and violence when one's resources is unable to meet his demands.

The complex relationship between depression, anxiety and stress makes it unclear if these mental health conditions have separate aetiologies. It is difficult to differentiate between the separate causes of depression, anxiety and stress (Tran et al., 2019). Some studies identified that stress has an impact on the development of depression and anxiety. Individuals exposed to high levels of stress may suffer from depression and anxiety (Creedy et al., 2017; Vahedian-Azimi et al., 2019). Other studies identified that, nurses who experienced symptoms of anxiety also experienced symptoms of depression (Perry et al., 2015; Tsaras et al., 2018). In view of this it is imperative to study these conditions together to appreciate the prevalence of these common mental health conditions.

Figure 1 shows that the risk factors for developing depression, anxiety and stress include lack of job satisfaction, shift rotation system at the workplace, workplace violence, conflict with colleagues, long working hours, inadequate sleep hours and alcohol consumption. The causes of depression, anxiety and stress are influenced by demographic characteristics such as age, gender, marital status, educational level, years of work and inadequate income. Increased levels of depression, anxiety and stress are expressed in symptoms such as loss of interest, hopeless, guilt feelings, self-blame, indecisiveness, panic attacks, restless, nervousness, loss of control, upset, loss of confidence, irritable, tense and violence. These symptoms may affect the performance of mental health nurses at the workplace. Beck's central assumption is that depression, anxiety and stress is principally cognitive which is characterized

by negative self-beliefs. Depressed dissatisfied with life, pessimistic, hopeless, worthless, trouble sleeping, nervous and intense sadness (Beck, 1967; Chan & La Greca, 2020).

This framework is relevant for this study because it presents the common risk factors for depression, anxiety and stress and demographic characteristics that can influence the aetiology of these mental health conditions. It also present common symptoms that are presented by patients diagnosed with these mental health condition. Anxiety and depression have high comorbidity because both phenomena are associated with negative effects, stressful life situations and impaired cognitive process (Clark & Beck, 2010). It is suggested that, depression, anxiety and stress have common aetiology as well as clinical presentations. This framework may be helpful to researchers interested in identifying the prevalence and relationship between these mental health conditions.

Chapter Summary

From the literature review, it was observed that, there is high prevalence of depression, anxiety and stress among nurses worldwide. In Ghana however, studies reviewed have shown high prevalence of depression and stress among nurses working in general hospitals. Work place risk factors associated with depression, anxiety and stress as identified in the review include the type of ward or clinical setting where nurses work, heavy work load, different shift rotation, work experience, conflict, violence, Job dissatisfaction, inadequate salaries and lack of support from colleagues. In addition, it was observed that, demographic characteristics such as age, gender, marital status, and educational level are associated with the prevalence of depression, anxiety and stress. Furthermore, it was revealed in the review that, studies on the prevalence and risk factors of depression, anxiety and stress among nurses working in psychiatric hospitals is limited. It is therefore necessary to identify the prevalence and risk factors of depression, anxiety and stress among nurses in psychiatric hospitals in Ghana.

CHAPTER THREE

RESEARCH METHODS

Introduction

The purpose of this study was to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. This chapter focused on the research methodology and design selected for this study, which included the techniques used for data collection and analysis. Description of the procedures used in collecting data will enable readers of this study appreciate the particular strengths and limitations of the study. This included, description of the research design, study area, population, sampling procedure, data collection instruments, data collection procedure, data processing and analysis and ethical consideration.

Research Design

Quantitative research is characterized by deductive approaches to the research process which is directed at proving, disproving or lending credence to existing theories. It involves measuring variables and testing relationships between variables in order to reveal patterns of correlations. The underlying values of quantitative research include neutrality, objectivity and obtaining a sizeable scope of knowledge (Ogah, 2013; Polit & Beck, 2010).

Qualitative research on the other hand is characterized by inductive approaches to knowledge acquisition which is aimed at generating meaning. This is used to explore; investigate and learn about social phenomenon; build a depth of understanding about a situation or event. Qualitative research is primary used to explore, describe or explain an event or situation (Frost, 2011).

Mixed methods research involves integrating both qualitative and quantitative research approaches in a single project. The phases of a research are integrated with the quantitative phase influencing the qualitative phase or vice versa. Mixed methods research results in comprehensive understanding of the phenomenon under investigation because of the integration of quantitative and qualitative data. It is appropriate in description, explaining and evaluating a phenomenon (Ogah, 2013; Polit & Beck, 2010).

A cross-sectional research design was used for this study. A cross-sectional research design was deemed for this study because, this design enabled the researcher collect information on depression, anxiety and stress among nurses at one point in time with the intention of describing the nature of existing conditions (Ogah, 2013). Cross-sectional study is generally quicker, more economical and easier to undertake. Cross-sectional studies are essentially one-time survey that provides a more accurate and meaningful picture of an event (Fraenkel, Wallen, & Hyun, 2012). Another strength of the cross-sectional study is that the sample may be more representative of the target population than other analytic or experimental studies since it is easier to obtain a representative sample of the target population.

A major weakness of the cross-sectional study design is that one cannot generally determine the temporal sequence between exposure and outcome, which is necessary to establish cause-effect relationships. It is difficult in ensuring that respondents answer questions correctly (Ogah, 2013).

Notwithstanding these challenges with the use of this design, the use of cross-sectional research design remains the best and most appropriate design for this study.

Study Area

This study was conducted at the three public psychiatric hospitals in Ghana, that is Ankaful Psychiatric Hospital in Cape Coast, Accra Psychiatric Hospital, Accra and Pantang Hospital, Accra. Accra Psychiatric Hospital is located in Adabraka in the Greater Accra Region of Ghana. The hospital was built in 1904 and commissioned in 1906 with a bed capacity of 200 patients. Currently, the hospital has a bed capacity of 600 patients but accommodates over 400 patients. It is the oldest and most populated psychiatric hospital in Ghana. The functions of the hospital include treatment, welfare, training and rehabilitation of the mentally ill patients in Accra and other parts of the country. Accra Psychiatric Hospital is used as a training facility by the University of Ghana Medical School for undergraduate and postgraduate training in psychiatry. During training, nurses all over the country are affiliated to the Accra Psychiatric Hospital for proficiency training in psychiatry. Departments in the hospital include: The Out Patients Department [OPD], Nursing, General Administration, Environmental Sanitation, Biostatistics (Medical Records), Telephone Exchange Unit, Pharmacy, Occupational Therapy, Laboratory and Drug Rehabilitation Centre.

Ankaful Psychiatric Hospital was the first psychiatric hospital to be built outside the nation's capital after the construction of the Accra Psychiatric Hospital. The hospital is located near the Ankaful village from which it derives it's name in the Komenda-Edina-Eguafo-Abirem Municipality in the Central Region of Ghana. It is the only psychiatric hospital outside the capital of Ghana (Accra) to serve the Central, Western and Northern sector of Ghana. It was established in 1965 with a bed capacity of 500 but currently, the

hospital has a total bed capacity of 311. Ankaful Psychiatric Hospital operates 4 male wards, 2 female wards, 1 Drug and Alcohol Rehabilitation Centre and an Out Patients Department. The hospital is responsible for the treatment, welfare, training and rehabilitation of the mentally ill patients and serves as a training centre for health training institutions in mental health across the country. The hospital also receives psychiatric patients from all over Ghana and from neighbouring countries, namely, Benin, Burkina Faso, Ivory Coast, Nigeria and Togo.

The Pantang Hospital is the largest psychiatric hospital (acreage wise), it was commissioned in the year 1975. It is a 500-bed facility which is located close to the Pantang village, 1.6 km off the Accra-Aburi road and 25 km from Accra. The hospital is used as a training centre for nursing and medical students all over the country. Pantang Hospital is made up of twenty-eight departments which include; six male and three female wards which has bed capacity of 50 each, an assessment unit and drug rehabilitation centre. The hospital also operates a polyclinic, maternity, child welfare clinic and an eye clinic which serves the general population. The Out-Patients Department provides free Psychiatric Services, as well as Primary Health Care [PHC] services to over fifteen villages in its catchments area of about 10 km.

Population

A study population comprise the total number of cases from which a sample is drawn (Ogah, 2013). A target population is the entire population the researcher is interested to study. It is a group of people who have common characteristics that the researcher is interested to study. The accessible population comprise cases from the target population that the researcher will

have access to as respondents of the study (Polit & Beck, 2010). The target population for this study included professional nurses who work in the three public psychiatric hospitals in Ghana namely Accra Psychiatric Hospital, Ankaful Psychiatric Hospital and Pantang Hospital. For the purpose of this study, the accessible population consists of a total of 993 nurses working in the three public psychiatric hospitals in Ghana. It comprises 462 nurses from Accra Psychiatric Hospital, 210 nurses from Ankaful Psychiatric Hospital and 321 nurses from the Pantang Hospital (Accra Psychiatric Hospital, 2019; Ankaful Psychiatric Hospital, 2019; Pantang Hospital, 2019).

Population for this study included; all professional nurses who work in the three public psychiatric hospitals and have worked for at least six months. Nurses who are on any form of leave; annual leave; maternity leave; sick leave, study leave, casual leave at the time of the study were excluded from the study.

Sampling Procedure

Sampling is the process of selecting a portion of the population to represent the entire population for a study(Polit & Beck, 2010). A probability proportionate to size and simple random sampling method were used to select the sample for this study. The sample size was derived by application of the formula proposed by Miller and Brewer (2003) at 95% confidence level which reads; $n= \frac{N}{(1+N\,(a)2)}$. Thus, n- desired sample size, N- target population, a- level of statistical significance of 0.05, 1-is a constant. A total of 993 nurses work in the three public psychiatric hospitals in Ghana. It comprises 462 nurses from

Accra Psychiatric Hospital, 210 nurses from Ankaful Psychiatric Hospital and 321 nurses from the Pantang Hospital

Therefore, the sample size, n= $\frac{993}{(1 + 993(0.05)2)}$ = 285.139=285

The calculated sample size of 285 was increased by 10% in order to ensure sample size is not less than the calculated sample size of 285 after data collection and data cleaning. 10% of 285 which is 29, was added to 285 to obtain the final sample size for the study which is 314. The 10% was to cover any uncertainties that may arise (Bryman, 2008).

Probability proportionate to size sampling method was adopted to select respondents from the three hospitals for the study to ensure equitable selection of respondents based on the population of nurses from each of the three hospitals. The sample size for each hospital was derived from the calculated sample size (314) using simple proportion based on the population of nurses in that particular hospital.

Sample size for Accra Psychiatric Hospital (N= 462)

$\frac{462}{993}$ x 314 = 146

Sample size for Ankaful Psychiatric Hospital (N=210)

$\frac{210}{993}$ x 314 = 66

Sample size for Pantang Hospital (N=321)

$\frac{321}{993}$ x 314 = 102

Finally, after the sample size for each hospital was determined, simple random sampling procedure was used to recruit respondent at each of the hospital. Simple random sampling technique gives each element an equal chance to be selected for the study (Polit & Beck, 2010). The sample frame of

the population for each of the hospital was determined by obtaining a list of all professional nurses working in that hospital from the nursing administration. Then, sequential numbers were assigned to each of the respondent to form the sample frame. A random number generator was used to generate random numbers and register the name in the sample frame corresponding to the numbers to constitute the sample for that particular hospital. This was continued until the required number was met.

Data Collection Instrument

Data was collected using a questionnaire. Questionnaire is a set of printed or written questions with choice of answers, devised for the purposes of a survey or statistical study. It is designed to be completed by a respondent of a study without the involvement of the researcher (Wolf, 2008). Advantages with the use of questionnaire include the relative ease in responding to them. It allows the researcher to collect relatively large data from a group of respondents within a short period of time and it is easy to score (Ogah, 2013). When properly constructed and responsibly administered, questionnaire become a vital instrument by which statements can be made about specific groups of people or entire population. Most respondents feel more comfortable in responding to pre-determined responses. Again, data collected through structured questionnaire is easily analysed statistically (Polit & Beck, 2010).

Unfortunately, questionnaire makes it difficult to examine complex issues and opinions. It is unable to explore the feeling and experiences of the respondents. Questionnaires are not able to elicit in-depth knowledge of respondents about an issue as compared to interview. Respondents may have different meaning to the items on the questionnaire which may affect the

responses (Ogah, 2013). However, questionnaire was chosen for this study because it enabled me to contact a large number of respondents quickly and efficiently.

The instrument consists of five sections: Section A (Socio-demographic characteristics), Section B (Risk factors for Depression, Anxiety and Stress), Section C (Beck's Depression Inventory), Section D (Beck's Anxiety Inventory), Section E (Perceived Stress Scale). The items on the questionnaire were mostly close ended questions with only two items which were open-ended. The Beck's Depression Inventory, Beck's Anxiety Inventory and Perceived Stress Scale were adopted for this study. The five sections are described below.

The second section (section B) centred on prevalence of work place risk factors of depression, anxiety and stress. This section of the research instrument consists of 8 items that were used to collect data on respondents' risk to depression, anxiety and stress. It is necessary to collect information on risk factors in order to describe the factors that contribute to risk of depression, anxiety and stress among respondents.

The third section (section C) concentrated on the prevalence of depression. Depression among respondents was assessed using the Beck's Depression Inventory [BDI]. The BDI is a 21-item self-reporting scale that is used to assess symptoms of depression among individual adults and adolescents 13 years old and older. These include mood, sense of failure, lack of satisfaction, feelings of guilt, self-dislike, self-accusations, suicidal ideations, social isolation, difficulty in taking decisions (Gebrie, 2018). The BDI is on a 4-point scale: 0- (Never- do not apply to me), 1- (Sometimes-

applied to me to some degree), 2- (Often- applied to me to a considerable degree), 3- (Almost always- applied to me very much). It has a minimum score of 0 and a maximum score of 63 (Jackson-Koku, 2016). Beck's Depression Inventory has internal consistency reliability with a Cronbach's alpha of 0.92 for psychiatric population and 0 .93 for non-psychiatric population (Osman, Barrios, Gutierrez, Williams, & Bailey, 2007). In this study the Cronbach's alpha reliability coefficients for BDI is 0.91 which demonstrate good internal consistency.

The fourth section (section D) focussed on prevalence of anxiety. Anxiety among respondents was assessed using Beck's Anxiety Inventory [BAI]. It is a 21-item self-report that is used to assess anxiety symptoms among adults and adolescents on a 4-point Likert scale, which ranges from: 0- (Not at all), 1- (Mildly- but it didn't bother me much), 2- (Moderately- it wasn't pleasant at times), 3- (Severely- it bothered me a lot) (Oh et al., 2018). The BAI is used to describe the emotional (unable to relax, terrified or afraid, feeling of choking, scared), physiological (numbness or tingling, dizzy, heart pounding, difficulty in breathing) and cognitive (fear of worst happening, nervous, fear of losing control, fear of dying) symptoms of anxiety (Beck, Brown, Robert, & Lechter, 1988). Becks Anxiety Inventory is reported to have internal consistency with a Cronbach's alpha of 0.91 among psychiatric and non-psychiatric respondents (Bardhoshi, Duncan, & Erford, 2016). In this current study the Cronbach's alpha reliability coefficients for BAI is 0.91 which indicates good internal consistency.

The fifth section (section E) determined the prevalence of stress. Stress level of respondents was assessed using the Perceived Stress Scale-10 [PSS]. PSS-10 was designed for use among respondents with at least junior high school education (Cohen, Kamarck, & Mermelstein, 1983). It is the mostly used instrument in assessing stressfulness of events. PSS is a 10-item scale that is used to assess respondent's perception of stressful experiences over the previous month. Items on the scale are rated on a 5-point Likert scale which ranges from: 0- (Never), 1- (Almost Never), 2- (Sometimes), 3- (Fairly Often), 4- (Very Often). The scores are calculated after reversing the positive item's score. It has a minimum score of 0 and a maximum score of 40, a high score indicates greater stress (Andreou et al., 2011). 6 out of the 10 items of the PSS-10 are considered negative (1,2,3,4,5,6) and the remaining 4 are positive (7,8,9,10). PSS-10 have internal consistency with a Cronbach's alpha of 0.82 (Herrero & Meneses, 2006). In this current study the Cronbach's alpha reliability coefficients for PSS is 0.74 which demonstrate good internal consistency.

The first section of the questionnaire concentrated on socio-demographic characteristics. The socio-demographic data consist 9-items that were used to collect information from respondents such as: age, marital status, educational status, name of hospital, number of years spent in the nursing profession, department or ward, monthly income, and religion. This information is necessary to describe the characteristics of the respondents.

Validity of the Instrument

In order to ensure the content validity of the questionnaire, it was given to my supervisor and other faculty of the School of Nursing and Midwifery of the University of Cape Coast for expert assessment and scrutiny. The items were examined to see whether they were related to the objectives of the research. This is to ensure content related evidence of the items in the questionnaire. Suggestion that was made by faculty and weakness identified were addressed to improve the content validity of the questionnaire.

Pre-testing of the Instrument

Pre-testing of the instrument was conducted at public hospitals with Mental Health Units in the Cape Coast Metropolis and Komenda-Edina-Eguafo-Abirem Municipality. That is Cape Coast Metropolitan Hospital, Adisadel Urban Health Centre, Ewim Poly Clinic and Elmina Urban Health Centre. The pre-testing was aimed at improving the validity and reliability of the research instrument. Respondents were provided with questionnaire to complete and provide comments or suggestions about questions they find ambiguous. Comments and suggestions from the respondents were addressed to improve the validity and reliability of the instrument.

Ethical Consideration

Ethical clearance was sought from the Institutional Review Board of the University of Cape Coast with reference ID (UCCIRB/CHAS/2019/210). An introductory letter was obtained from the School of Nursing and Midwifery of the University of Cape Coast and presented to the directors of the three psychiatric hospitals (Accra Psychiatric Hospital, Pantang Hospital

and Ankaful Psychiatric Hospital) for approval to conduct the study. The purpose of the study, anonymity and confidentiality of respondents were explained to the respondents to seek their informed consent before data collection.

Participation in this study was voluntary and respondents could pull out from it at any point in time without any adverse effect. Anonymity of respondents were highly considered in this study as names of respondents were not used in any part of the study in order to protect the respondent's privacy and confidentiality. Information collected from the respondents were protected to the best of my ability. The respondents were told that their responses would be kept confidential and that no one known to them would have access to the information provided. The survey was stored in a safe and I was the only one who had access to the research records.

Data Collection Procedures

Approval for the study was sought from the Institutional Review Board of the University of Cape Coast with reference ID (UCCIRB/CHAS/ 2019/210). Following the approval, I obtained an introductory letter from the School of Nursing and Midwifery of the University of Cape Coast to the hospital directors of the three psychiatric hospitals (Accra Psychiatric Hospital, Pantang Hospital and Ankaful Psychiatric Hospital) to seek approval to conduct the study.

After approval from the hospitals, the respondents were informed of the purpose of the study, benefits, confidentiality and possible risk associated with the study before data collection to seek their consent. The respondents were given the opportunity to ask questions concerning the study, which were

addressed by the researcher or his assistants. Those who consented to take part in this study were then given a consent form to fill before data collection. Three hundred and fourteen questionnaires were administered personally or by my trained research assistants to all 314 respondents who were involved in this study at their ward or department in the hospital. The respondents were allowed to read the instructions on the instrument and where they had challenges it was explained to them. They were given a period of one week to complete the questionnaire after which the research assistants and myself went around the various wards and departments in the hospitals to collect them. Data collection from all the three hospitals lasted for seven weeks that is from 4th March 2020 to 24th of April 2020.

The outbreak of the COVID-19 pandemic in Ghana and the subsequent lockdown of Accra from 30th March 2020 to 20th April 2020 made it difficult to collect data at Accra Psychiatric Hospital. This prolong the estimated period for data collection at that facility. However, after the lockdown was lifted, the data collection was completed. Three hundred and eleven questionnaires were returned and entered into the database for analysis (response rate of 99% was achieved). The high response rate reflects the interest of Registered Mental Health Nurses to express themselves about the topic under study.

Data Processing and Analysis

The responses to 311 questionnaires returned, were edited, coded and scored using SPSS version 23.0 the editing procedure was used to check whether respondents followed instructions correctly and to check if all items on the questionnaire were responded to. Demographic data of respondents,

research question one and two was analysed using descriptive statistics and a multinomial logistic regression was used to analyse research question three.

Research question one: What is the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana? Frequencies and percentages were used to analyse this question to establish the prevalence level of depression, anxiety and stress. The Beck's Depression Inventory [BDI] was used to assess the prevalence of depression. The highest ratings on the scale was added to obtain the score. The minimum score is 0 and 63 is the maximum score. The score of 0–13 indicate (minimal depression), 14–19 (mild depression), 20–28 (moderate depression) and 29–63 (severe depression) (Jackson-Koku, 2016).

The prevalence of anxiety was calculated by finding the sum of the 21 items of the Beck's Anxiety Inventory [BAI]. A score of 0-21 indicate (low anxiety), 22-35 (moderate anxiety), score of 36 and above (potential concerning level of anxiety) (Oh et al., 2018).

Stressed was assessed using the Perceived Stress Scale [PSS] which indicates that, a score of 0-13 represent (low stress), 14-26 (moderate stress) and 27-40 (high perceived stress) (Herrero & Meneses, 2006). The scores were calculated after reversing the positive item's score on the PSS.

Research question two: What is the prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana? Frequencies, percentages, mean and standard deviation were used to analyse this question to identify the work place risk factors of depression, anxiety and stress.

Research question three: What socio-demographic characteristics predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana? A multinomial logistic regression analysis was used to analyse this research question to establish socio-demographic characteristics that predict depression, anxiety and stress.

Chapter Summary

This study was conducted to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. A cross-sectional research design was used for this study. This study was conducted in the three public psychiatric hospitals in Ghana, that is Ankaful Psychiatric Hospital in Cape Coast, Accra Psychiatric Hospital, Accra and Pantang Hospital, Accra. Respondents for this study were professional nurses who work in the three public psychiatric hospitals in Ghana.

Probability proportionate to size and simple random sampling procedure were used to select the sample for this study and data was collected using a questionnaire. The instrument used for this study consists of five sections: Section A (Socio-demographic characteristics), Section B (Risk factors for Depression, Anxiety and Stress), Section C (Beck's Depression Inventory), Section D (Beck's Anxiety Inventory), Section E (Perceived Stress Scale). Data generated from the questionnaire were coded and analysed descriptively (frequencies and percentages). A multinomial logistic regression analysis was used to establish socio-demographic characteristics that predict depression, anxiety and stress.

Limitations of this study included the outbreak of COVID-19 pandemic in Ghana and the subsequent lock down of Accra made it difficult to collect data at Accra Psychiatric Hospital. This prolong the data collection period at that facility. The next chapter presents the results and discussion of the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents the results of the analyses and discussion of the findings of the study. The purpose of this study was to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. The study specifically focused on (a) the prevalence of depression, anxiety and stress among nurses, (b) the prevalence of work place risk factors of depression, anxiety and stress among nurses and (c) socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

The study employed a cross-sectional research design. The chosen instrument for data collection was a questionnaire. The data was analysed using descriptive statistics (frequencies, percentages, mean and standard deviation) and multinomial logistic regression.

Demographic Data of Respondents

The study included professional nurses who work in the public psychiatric hospitals in Ghana namely Accra Psychiatric Hospital, Ankaful Psychiatric Hospital and Pantang Hospital. The actual sample size finally used in the study was 311 nurses. The number of respondents from Accra Psychiatric Hospital, Ankaful Psychiatric Hospital and Pantang Hospital were 145, 66 and 100 respectively. Table 1 presents the socio-demographic data of respondents involved in the study.

Table 1: Distribution of Demographic Variables of Respondents N=311

Variable	Frequency	Percentage (%)
Gender		
Male	124	39.9
Female	187	60.1
Age		
18-24	8	2.6
25-34	215	69.1
35-44	86	27.7
45 and above	2	.6
Marital status		
Single	140	45.0
Married	168	54.0
Divorced/separated	2	.6
Widowed	1	.3
Educational status		
Diploma	185	59.5
Bachelor's degree	121	38.9
Master's degree	5	1.6
Name of Hospital		
Ankaful Psychiatric Hospital	66	21.2
Accra Psychiatric Hospital	145	46.6
Pantang Hospital	100	32.2
Years spent in the nursing profession		
Less than 1 year	4	1.3
1-3	54	17.4
4-6	88	28.3
7-9	84	27.0
10 and above	81	26.0
Department/ward		
Administration	7	2.3
OPD	49	15.8
Acute ward	167	53.7
Chronic ward	88	28.3
Monthly income		
Less than 1500 cedis	40	12.9
1500-2000 cedis	156	50.2
2100-2900 cedis	106	34.1
3000 cedis and above	9	2.9
Religion		
Christianity	282	90.7
Islam	27	8.7
Traditional religion	2	.6

Source: Field Survey (2020)

The results in Table 1 shows that 60.1% of the respondents were female whilst 39.9% were male. It was found that 69.1% of the nurses were between 25 to 34 age range whilst .6% were 45 years and above. The study findings further indicated that 54.0% were married, and 45.0% were single. Also, it was observed that 59.5% were diploma holders whilst 1.6% were master's degree holders.

Additionally, it was found that 46.6 % of the nurse worked at Accra Psychiatric Hospital, 32.2% worked at Pantang Hospital and 21.2% worked at Ankaful Psychiatric Hospital. Moreover, the results revealed that 28.3% of the respondents had spent 4 to 6 years in the nursing profession whilst 1.3% had spent less than 1 year.

It is important to know that 53.7% of the nurses worked at the Acute ward, 15.8% worked at OPD and 2.3% worked at Administration. The study also revealed that 50.2% of the nurses earned between 1500 to 2000 cedis monthly whilst 2.9% earned 3000 cedis and above. Furthermore, 90.7% of the respondents were found to be Christians whilst .6% were found to be Traditionalist.

Research Question One

What is the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?

The purpose of research question one was to determine the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. Frequencies and percentages were used to analyse the data. Table 2 presents the results of data analysis.

Table 2: Distribution of Results of Prevalence of Depression, Anxiety and Stress. N=311

Variable	No.	%	Mean	SD	t-value	df	p-value
Depression							
Minimal depression (0-13)	286	92.0					
Mild depression (14-19)	16	5.1	5.86	.51	-67.75	310	0.001
Moderate depression (20-28)	2	.6					
Severe depression (29-63)	7	2.3					
Anxiety							
Low anxiety (0-21)	300	96.5					
Moderate anxiety (22-35)	10	3.2	5.38	.17	-69.84	310	0.001
Severe anxiety (36 and above)	1	.3					
Stress							
Low stress (0-13)	176	56.6					
Moderate stress (14-26)	133	42.8	12.10	.52	-22.3	310	0.001
High perceived stress (27-40)	2	.6					

Source: Field Survey (2020)

The results in Table 2 shows that 92.0% of the study respondents experienced minimal depression whilst 2.3% experienced severe depression. It was found that 96.5% of the respondents experienced low anxiety and 3.2% experienced moderate anxiety. It is evident that generally the nurses involved in this study experienced low levels of anxiety. Also, it was observed that 56.6% experienced low stress and 42.8% experienced moderate stress. It can be concluded generally that greater portion of the nurses experienced low to moderate stress levels. The results further revealed that statistically significant difference existed among the various categories of depression, anxiety and stress. It was found that depression; $t(310)=-67.75$, p=.001, anxiety; $t(310)=-69.84$, p=0.001 and stress; $t(310)=-22.3$, p=0.001. It can be concluded

generally that significant difference existed within the various categories of the variables under study.

Research Question Two

What is the prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?

This research question found out the prevalence of work place work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospital in Ghana. Frequencies and percentages were used to analyse the data. Also, means and standard deviations were computed to enhance the analysis. With this, a criterion in Table 3 was calculated by dividing the range (2) by the number of categories (3), giving 0.66. Then the criterions are 1.00-1.66=Yes; 1.67-2.33=No, 2.34-3.00=Not sure. Table 3 presents the results of data analysis.

Table 3: Distribution of Results of Risk Factors of Depression, Anxiety and Stress

Statement	Yes		No		Not sure		M	SD
	Freq	%	Freq	%	Freq	%		
1. Are you satisfied with your current job	129	41.5	132	42.4	50	16.1	1.74	.71
2. Do you work in a shift rotation pattern	293	94.2	17	5.5	1	0.3	1.06	.25
3. Have you experience workplace violence in the past 1 month	111	35.7	195	62.7	5	1.6	1.65	.50
4. Have you had conflict with colleagues at the work place in the past 1 month	46	14.8	255	82.0	10	3.2	1.88	.40
5. Do you have a history of chronic illness	17	5.5	287	92.3	7	2.3	1.96	.27
6. Do you drink alcohol	35	11.3	269	86.5	7	2.3	1.91	.35
Overall mean							1.70	.41

Source: Field Survey (2020) *M=Mean* *SD=Standard deviation*

It was observed that 42.4% of the respondents indicated "No" to the statement "are you satisfied with your current job" and 41.5% indicated "Yes" with (*M=1.74, SD=.71*). The results showed that 62.7% indicated "No" to the statement "have you experience workplace violence in the past 1 month" and 35.7% indicated "Yes" with (*M=1.65, SD=.50*). Moreover, it was found that 82.0% indicated "No" to the statement "Have you had conflict with colleagues at the work place in the past 1 month" and 14.8% indicated "Yes" with (*M=1.88, SD=.40*).

Additionally, the results revealed that 92.3% of the respondents indicated "No" to the statement "do you have a history of chronic illness" with (*M=1.96, SD=.27*). Lastly, it was seen that 86.5% responded "No" to the statement "Do you drink alcohol" and 11.3% responded "Yes" with (*M=1.91, SD=.35*). It is worth noting that the overall mean and standard deviation were 1.70 and .41 respectively, indicating respondents not sure or perceiving items outlined on the questionnaire as low risk factors of depression, anxiety and stress. It could be concluded generally that, mental health nurses involved in the study had low risk of depression, anxiety and stress. Work place risk factors of depression, anxiety and stress with high prevalence identified in this study include lack of satisfaction with current job, work place violence and conflict with colleagues.

Table 4: What is Your Average Work Hours Per Day N=311

Work hours	Frequency	Percentage%
Up to 8 hours	260	83.6
9-10 hours	34	10.9
11 hours or more	17	5.5
Total	311	100.0

Source: Field Survey (2020)

Table 4 shows that 83.6% of the respondents had average work hours per day up to 8 hours and it was found that 5.5% also had for 11 hours or more. It could be concluded that majority of the nurses had average work hours per day up to 8 hours.

Table 5: What is Your Average Sleep Hours Per Day N=311

Sleep hours	Frequency	Percentage%
Up to 5 hours	92	29.6
6-7 hours	183	58.8
8 hours or more	36	11.6
Total	311	100.0

Source: Field Survey (2020)

The result in Table 5 shows that 58.8% of the nurses had average sleep hours per day for 6 to 7 hours and 11.6% had it for 8 hours or more. It could be suggested that, averagely the nurses sleep between 6 to 7 hours in a day.

Research Question Three

What socio-demographic characteristics predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana?

This research question determined socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. To achieve this objective, a multinomial logistic regression

analysis was carried out between socio-demographic characteristics of respondents and the psychological distress dimensions (e.g., depression, anxiety and stress).

A multinomial logistic regression analysis is used when the dependent variable is nominal and have more than two categories. It allows the testing of models to predict categorical outcomes with more than two categories. The predictor (independent variable) in this study included; age, gender, educational level, income, department and hospital and the dependent variable was made up of depression, anxiety and stress. The Assumptions underpinning multinomial logistic regression was checked to merit it use in this study.

Assumption 1: The dependent variable should be measured at nominal level and have more than two categories. In this study, the dependent variables included depression, anxiety and stress all of which were nominal with more than two categories. Depression was categorized into four (minimal, mild, moderate and severe), anxiety categorized into three (low, moderate and severe) and stress categorized into three (low, moderate and high).

Assumption 2: There must be one or more independent variables that are continuous, ordinal or nominal. In this study the continuous variable was; age (measured in years), and the nominal variables included gender, educational level, hospital, income (measured in Ghana cedis) and department.

Assumption 3: There must be independence of observations and the dependent variable should have mutually exclusive categories. In this study, the independent variables were distinct from each other and the dependent variables had exclusive categories from each other.

Assumption 4: There should be no multicollinearity. Multicollinearity occurs when you have two or more independent variables that are highly correlated with each other. This leads to problems with understanding which variable contributes to the explanation of the dependent variable. In this study, the independent variables were not correlated.

Assumption 5: There must be a linear relationship between independent variables and the dependent variable. Linearity test results showed that linearity relationship exist between the independent variables the dependent variables.

Assumption 6: There should be no outliers, high leverage values or highly influential points. The minimum and maximum response of participants were checked and the results showed that no extreme values were entered therefore, there was no outlier in the data.

The result of the analysis has been presented from three different angles. First, analyses are presented on socio-demographic variables and depression; followed by socio-demographic variables and anxiety; and lastly, socio-demographic variables and stress.

Socio-Demographic Variables and Depression

Table 6 presents how socio-demographic characteristics of respondents predict depression. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was depression levels of nurses working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.008. The goodness of fit indices revealed that the data fit the model, p=.719. The Nagelkekerke pseudo-R-square value was .540 indicating that the

socio-demographic variables of the respondents accounted for 54% of the variances in depression levels of mental health nurses.

As shown in Table 6, the education level of respondents was found to be significantly associated with depression. Precisely, diploma holders are more likely than master's holders to be minimally depressed relative to severely depressed, b=3.643, p=.001, OR=38.222. Similarly, respondents with a bachelor's degree are more likely than master's holders to be minimally depressed relative to severely depressed, b=3.611, p=.002, OR=37.000. This trend of results is similar to the category of mild or severe depression. That is, the diploma holders were more likely than master's holders to have mild depression relative to severe depression, b=18.412, p<.001, OR=991.935. Again, diploma holders have a higher probability than master's holders to be moderately depressed relative to severely depressed, b=18.294, p<.001, OR=881.197. On a whole, there appears to be a positive association between educational level and depression such that nurses with higher educational level are more likely to have a higher level of depression and vice versa.

Table 6: Socio-demographic Variables Prediction of Depression

Depression		B	Std. Error	Wald	Sig.	Exp(B)
minimal	Intercept	.405	.913	.197	.657	
	Diploma	3.643	1.083	11.322	.001	38.222
	Bachelor's Degree	3.611	1.159	9.713	.002	37.000
	Administration	-3.490	1.309	7.115	.008	.030
	OPD	-2.032	1.134	3.212	.007	.131
	Acute Ward	7.955	38.718	.042	.037	2849.968
	Less than 1500 cedis	18.177	40.354	.000	.996	783.199
	1500-2000 cedis	1.490	1.176	1.607	.205	4.437
	2100-2900 cedis	1.812	1.279	2.009	.156	6.125
	Ankaful Psychiatric Hospital	-1.558	1.166	1.784	.182	.211
	Accra Psychiatric Hospital	-.777	1.163	.447	.504	.460
	18-24 years	15.084	666.813	.982	.001	355.253
	25-34 years	3.674	1.485	6.121	.013	39.400
	35-44 years	4.382	1.736	6.374	.012	80.000
	Male	-1.372	.845	2.632	.105	.254
Mild	Intercept	-17.313	.802	466.272	.000	.736
	Diploma	18.412	1.043	311.776	.000	991.935
	Bachelor's Degree	18.566	.000	231.667	.000	1156.757
	Administration	-19.028	4284.067	.000	.096	.449
	OPD	-2.303	1.396	2.719	.099	.100
	Acute Ward	7.900	38.722	.042	.838	2696.508
	Less than 1500 cedis	34.703	4061.354	7.021	.009	117.000
	1500-2000 cedis	18.484	1.021	313.954	.000	714.344
	2100-2900 cedis	18.090	67.000	3.713	.000	107.516
	Ankaful Psychiatric Hospital	-1.386	1.384	1.003	.317	.250

Table 6 Continued

	Accra Psychiatric Hospital	-.288	1.302	.049	.825	.750
	18-24 years	16.911	3210.424	2.796	.000	220.221
	25-34 years	17.040	3109.286	1.906	.000	251.227
	35-44 years	17.183	3109.286	1.911	.000	290.416
	Male	-1.168	.977	1.429	.232	.311
moderate	Intercept	-19.393	1.225	250.716	.000	123.451
	Diploma	18.294	1.683	118.119	.000	881.197
	Bachelor's Degree	18.699	.000	114.181	.000	132.296
	Administration	-10.299	.704	42.310	.000	.336
	OPD	-2.002	167.881	.207	.009	.135
	Acute Ward	17.204	106.706	.026	.008	296.237
	Less than 1500 cedis	18.218	18971.329	.000	.999	816.658
	1500-2000 cedis	18.777	16902.236	.000	.999	142.193
	2100-2900 cedis	1.891	17528.482	.000	.999	6.625
	Ankaful Psychiatric Hospital	-1.528	.000	.987	.873	.217
	Accra Psychiatric Hospital	18.045	.000	.564	.443	686.257
	18-24 years	16.911	1414.522	2.990	.000	220.267
	25-34 years	5.625	236.233	1.981	.001	277.188
	35-44 years	18.857	23.080	9.023	.000	154.868
	Male	-.916	1.643	.311	.577	.400

a. The reference category for criterion variable: severe.
Reference groups for predictors: Education status- *Masters*; Department-*Chronic Ward*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.

Besides, it was found that the department of the respondents was associated with depression. Those working in the Administration were less likely than those in Chronic Ward to be minimally depressed comparable to severely depressed, b=-3.490, p=.008, OR=.030. Nurses in the OPD had

lesser tendencies than those in the Chronic Ward to be minimally depressed comparable to severely depressed, *b*=-.032, *p*=.007, *OR*=.131. Also, nurses in the Acute Ward Department have a higher probability than those in the Chronic Ward to be minimally depressed relative to severely depressed, *b*=7.955, *p*=.037, *OR*=2849.968. Further results also show that nurses in the Administration were less likely than those in Chronic Ward to be moderately depressed comparable to severely depressed, *b*=-10.299, *p<.001*, *OR*=.336. Similarly, respondents in the OPD had lesser tendencies than those in the Chronic Ward to be moderately depressed relative to severely depressed, *b*=-2.002, *p*=.009, *OR*=.131. Lastly, nurses in the Acute Ward have a higher probability than those in the Chronic Ward to be moderately depressed relative to severely depressed, *b*=17.204, *p*=.002, *OR*=296.237. The result suggests that nurses in the Administration and OPD are more likely to have high depression than those in the Acute Ward and Chronic Ward. However, those in the Chronic Ward are more likely to have higher levels of depression than those in the Acute Ward.

The income of the nurses was generally found to be significantly associated with depression levels, especially, at mild depression comparable to severe level. Nurses with income less than 1500 cedis are more likely than those taking 3000+ cedis to have mild depression relative to severely depressed, *b*=34.703, *p*=.009, *OR*=117.000. Similarly, respondents with income between 1500-2000 cedis are more likely than those taking 3000+ cedis to be mildly depressed relative to severely depressed, *b*=18.084, *p*<.001, *OR*=714.344. For nurses who receive between 2100-2900 cedis salary, they are more likely than those with an income of 3000+ cedis to be mildly

depressed compared to being severely depressed. In all, it can be indicated that the income of nurses is positively and significantly associated with levels of depression. Thus, nurses who take a higher amount of income are more likely to have higher levels of depression than those who take a relatively smaller amount.

The results, as presented in the age of nurses was found to be significantly associated with levels of depression. Exactly so, nurses within the age range of 18-24 years are more likely than those 45 years and above to be minimally depressed relative to severely depressed, b=15.084, p=.001, OR=3555.253. Equally, respondents aged between 25-34 years are more likely than those 45 years and above to be minimally depressed relative to severely depressed, b=3.674, p=.013, OR=39.400. Nurses around the age of 35-44 years were more likely than those 45 years and above to have minimally depression relative to severe depression, b=4.382, p=.012, OR=80.000.

Further probing revealed that nurses within the age bracket of 18-24 years were more likely than those 45 years and above to have moderate depression relative to severe depression, b=16.911, p<.001, OR=220.267. Respondents aged 25-34 years have a higher probability than those aged 45 years and above to be moderately depressed relative to severely depressed, b=5.625, p=.001, OR=277.188. It was also found that nurses aged 35-44 years are more likely than those aged 45 years and above to be moderately depressed relative to severely depressed, b=18.857, p<.001, OR=154.868. The result generally implies that there is a positive association between age and depression such that older nurses are more likely to have higher levels of depression as compared to younger nurses.

The type of hospital was not significantly associated with depression. That is, enough evidence could not be gathered to understand how the type of hospital in which the nurses find themselves predicts depression. Stated differently, the nurses in all the hospitals used for this study have the tendencies of experiencing similar levels of depression. Additionally, gender was not found to be significantly associated with levels of depression. Thus, male and female nurses had similar levels of depression.

Socio-Demographic Variables and Anxiety

Table 7 presents the analysis of how socio-demographic variables of respondents predict anxiety. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was the anxiety levels of nurses working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.026. The goodness of fit indices revealed that the data fit the model, p=.059. The Nagelkekerke pseudo-R-square value was .380 indicating that the socio-demographic variables of the respondents accounted for 38% of the variances in anxiety levels of mental health nurses.

Table 7: Socio-demographic Variables Prediction of Anxiety

Anxiety		B	Std. Error	Wald	Sig.	Exp(B)
low	Intercept	20.335	1.803	127.237	.000	67.906
	Diploma	-.137	1827.846	192.000	.909	.872
	Bachelor's Degree	- 15.556	1.503	107.152	.000	.757
	Administration	16.736	1.296	166.872	.000	185.329
	OPD	16.779	5856.834	.001	.998	193.958
	Acute Ward	16.762	3170.651	.003	.996	190.986
	Less than 1500 cedis	-16.524	2322.514	.006	.994	.663
	1500-2000 cedis	.041	3058.412	.002	.900	1.041
	2100-2900 cedis	.062	1.279	.002	.961	1.064
	Ankaful Psychiatric Hospital	-.014	.852	1. 987	.007	.514
	Accra Psychiatric Hospital	-17.748	.742	571.722	.000	.659
	18-24 years	-7.736	128.941	34.952	.004	.390
	25-34 years	-7.692	24.253	76.751	.010	.683
	35-44 years	-14.969	1.735	74.396	.000	.155
	Male	17.516	.656	712.585	.000	404.460
moderate	Intercept	18.949	1.414	179.531	.000	12.987
	Diploma	-1.848	182.846	111.000	.045	.158
	Bachelor's Degree	- 18.949	127.000	219.000	.007	.896
	Administration	18.693	59.000	318.087	.076	131.333
	OPD	16.658	5856.834	.000	.908	171.650
	Acute Ward	17.222	3170.651	.000	.996	301.208
	Less than 1500 cedis	-18.082	2322.514	.000	.994	.403

Table 7 Continued

1500-2000 cedis	-1.099	3058.412	.000	.980	.333
2100-2900 cedis	-1.810	.000	.000	.342	.164
Ankaful Psychiatric Hospital	-.507	.000	.000	.326	.602
Accra Psychiatric Hospital	-18.654	.000	.000	.792	.921
18-24 years	-9.681	128.936	19.940	.006	.243
25-34 years	-11.084	24.215	10.647	.021	.536
35-44 years	-19.400	65.907	9.954	.000	.756
Male	17.516	7.090	25.781	.000	403.461

a. The reference category for the criterion variable is: severe anxiety
Reference groups for predictors: Education status- *Masters*; Department-*Chronic*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.

Among the findings, it was found that the respondents with bachelor's degree were less likely than those with master's degree to have low anxiety relative to severe anxiety, b=-15.556, p<.001, OR=.757. Again, those nurses with diploma certificates were also less likely than master's holders to have moderate levels of anxiety relative to severe anxiety, b=-1.828, p=.045, OR=.158. Also, nurses with a bachelor's degree were less likely than those with a master's degree to have moderate anxiety relative to severe anxiety, b=-18.949, p=.007, OR=.896. The findings suggest that higher levels of education are associated with lower levels of anxiety. This is to say that nurses who have diploma degrees are more likely to be anxious than those with a master's degree.

Nurses working at the Ankaful Psychiatric Hospital were less likely than those at the Pantang Hospital to have low anxiety relative to severe anxiety, *b*=-.014, *p*=.007, *OR*=.514. Similarly, nurses at Accra Psychiatric Hospital were also less likely than those at the Pantang Hospital to have low anxiety relative to severe anxiety, *b*=-.17.748, *p*<.001, *OR*=.659. Generally speaking, it can be concluded that nurses at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of anxiety than those working in Pantang Hospital.

Additionally, it was found that the age of the respondents was associated with anxiety. Those who are between 18-24 years were less likely than those 45 years and above to have low anxiety comparable to severe anxiety, *b*=-7.736, *p*=.004, *OR*=.390. Nurses between the ages of 25 and 34 years had lesser tendencies than those aged 45 years and above to have low anxiety comparable to severe anxiety, *b*=-7.692, *p*=.010, *OR*=.683. Also, nurses aged 35-44 years have lower chances than those 45 years and above to have low anxiety relative to severe anxiety, *b*=-14.969, *p*<.001, *OR*=.155. Further results also show that nurses who are between 18-24 years were less likely than those 45 years and above to have moderate anxiety comparable to severe anxiety, *b*=-9.681, *p*=.006, *OR*=.243.

Similarly, nurses between the ages of 25-34 years had lesser tendencies than those aged 45 years and above to have moderate anxiety comparable to severe anxiety, *b*=-11.084, *p*=.021, *OR*=.536. Likewise, nurses aged 35-44 years have lower chances than those 45 years and above to have a moderate level of anxiety relative to severe anxiety, *b*=-19.400, *p*<.001, *OR*=.756. In

effect, the results indicate that younger nurses are more likely to suffer from severe anxiety as compared to older nurses.

The results also found that male nurses were more likely than female nurses to have low anxiety relative to severe anxiety, b=17.516, p<.001, OR=404.460. Again, male nurses were more likely than female nurses to have moderate levels of anxiety relative to severe anxiety, b=17.516, p<.001, OR=403.461. The results suggest that whereas male nurses have more chances of experiencing low levels of anxiety female nurses have higher chances of experiencing higher levels of anxiety.

The department of the respondent and the income levels was not found to be significantly associated with anxiety levels. This means that irrespective of the respondents' department and income level, similar anxiety levels were reported.

Socio-Demographic Variables and Stress

Results from Table 8 presents how socio-demographic characteristics of respondents predict their level of stress. The model comprised six predictors, namely, gender, age, department, education status, hospital and income. The criterion variable was the stress levels of staff working in psychiatric hospitals. The model fitting information for the above-specified model was found to be significant, p=.043. The goodness of fit indices revealed that the data fit the model, p=.107. The Nagelkekerke pseudo-R-square value was .610 indicating that the socio-demographic variables of the respondents accounted for 61% of the variances in stress levels of mental health nurses.

As presented in Table 8, the education level of respondents was found to be significantly associated with stress. To be precise, diploma holders were less likely than master's holders to have low stress relative to highly stressed, b=-12.267, p<.001, OR=.704. Similarly, respondents with a Bachelor's degree were less likely than master's holders to have low stress relative to highly stressed, b=-12.741, p<.001, OR=.929.

Furthermore, diploma holders were less likely than master's holders to be moderately stressed relative to highly stressed, b=-11.188, p<.001, OR=.385. Again, bachelor degree holders had fewer chances than master's holders to be moderately stressed relative to highly stressed, b=-11.555, p<.001, OR=.586. On a whole, there appears to be a negative association between educational level and stress such that nurses with higher educational level are more likely to experience lower levels of stress and vice versa.

Table 8: Socio-Demographic Variables Prediction of Stress

Stress		B	Std. Error	Wald	Sig.	Exp(B)
low	Intercept	16.931	1.506	126.357	.000	24.12
	Diploma	-12.267	1.811	45.907	.000	.704
	Bachelor's Degree	-12.741	1.133	126.457	.000	.929
	Administration	-.251	6810.055	98.000	.000	.285
	OPD	-16.382	1101.237	64.000	.008	.683
	Acute Ward	.009	.266	87.001	.042	1.991
	Less than 1500 cedis	-.096	1531.205	1.000	.000	.909
	1500-2000 cedis	-13.668	775.087	.986	.000	.156
	2100-2900 cedis	-.052	.699	.941	.005	.053
	Ankaful Psychiatric Hospital	-16.113	1124.354	.989	.000	.106
	Accra Psychiatric Hospital	-.139	.264	.599	.027	.870
	18-24 years	-.219	1132.185	1.268	.000	.245
	25-34 years	-11.248	326.098	.972	.001	.303
	35-44 years	-.080	1.431	9.955	.003	.083
	Male	-16.745	.239	4920.261	.000	.342
moderate	Intercept	15.544	1.009	237.230	.000	7.983
	Diploma	-11.188	1.425	61.615	.000	.385
	Bachelor's Degree	-11.555	2.000	78.109	.000	.586
	Administration	-.391	810.550	.000	.900	.676

Table 8 Continued

OPD	-16.407	101.732	.000	.908	.488
Acute Ward	.012	23.000	.000	.075	1.012
Less than 1500 cedis	-.127	1531.205	1.0860	.000	.136
1500-2000 cedis	-13.759	775.087	.986	.000	.056
2100-2900 cedis	-.068	665.000	1.765	.000	.934
Ankaful	-16.045	3452..456	.989	.000	.076
Psychiatric Hospital					
Accra Psychiatric Hospital	.184	.000	.00	.064	1.202
18-24 years	-.292	1132.185	1.000	.000	.747
25-34 years	-11.561	326.095	.972	.001	.534
35-44 years	-.107	98.090	2.456	.000	.899
Male	-17.221	.604	238.054	.000	.318

a. The reference category for the criterion variable is: high stress
Reference groups for predictors: Education status- *Masters*; Department-*Chronic*; Income-*3,000 and above*; Hospital- *Pantang*; Age- *45 and above*; Gender-*Female*.

Additionally, it was found that the department of the respondents was significantly associated with stress. Nurses working in the Administration were less likely than those in Chronic Ward to have low stress relative to highly stressed, b=-.251, p<.001, OR=.285. Nurses in the OPD had lesser tendencies than those in the Chronic Ward to have low stress comparable to highly stressed, b=-.16.382, p<.008, OR=.683. Also, nurses in the Acute Ward have a higher probability than those in the Chronic Ward to experience low stress relative to highly stressed, b=.009, p=.042, OR=1.9991. These

findings speak to the fact that nurses in the Administration and OPD are more likely to be highly stressed than those in the Acute Ward and Chronic Ward. However, those in the Chronic Ward are more likely to have higher levels of stress than those in the Acute Ward.

The income of the nurses was generally found to be significantly associated with stress levels. Nurses with income less than 1500 cedis are less likely than those taking 3000+ cedis to experience low stress relative to highly stressed, b=-.096, p<.001, OR=.909. Similarly, respondents with income between 1500-2000 cedis are less likely than those taking 3000+ cedis to experience low stress relative to highly stressed, b=-13.668, p<.001, OR=.156. For nurses who receive between 2100-2900 cedis salary, they are less likely than those with an income of 3000+ cedis to experience low stress compared to being highly stressed, b=-.052, p=.005, OR=.053. In all, it can be indicated that the income of nurses is negatively and significantly associated with stress levels. Thus, nurses who take a higher amount of income are likely to experience low stress levels than those with relatively smaller income.

The results, as presented in the age of nurses was found to be significantly associated with levels of stress. Exactly so, nurses within the age range of 18-24 years are less likely than those 45 years and above to experience low stress relative to high stress, b=-.219, p=.001, OR=.245. Equally, respondents aged between 25-34 years are less likely than those 45 years and above to experience low stress relative to high stress, b=-11.248, p=.001, OR=.303. Nurses around the age of 35-44 years were also less likely than those 45 years and above to experience low stress relative to high stress, b=-.080, p=.003, OR=.083. Further probing revealed that nurses within the

age bracket of 18-24 years were less likely than those 45 years and above to be moderately stressed relative to highly stressed, *b*=-.292, *p*<.001, *OR*=.747. Respondents aged 25-34 years have a lower probability than those aged 45 years and above to be moderately stressed relative to highly stressed, *b*=-11.561, *p*=.001, *OR*=.534. It was also found that nurses aged 35-44 years are less likely than those aged 45 years and above to be moderately stressed relative to highly stressed, *b*=-.107, *p*<.001, *OR*=.899. The result generally implies that there is a negative association between age and stress such that older nurses are likely to experience low levels of stress and younger nurses are more likely to have high levels of stress.

Furthermore, nurses working at the Ankaful Psychiatric Hospital were less likely than those at the Pantang Hospital to have low stress relative to high stress, *b*=-16.113, *p*<.001, *OR*=.106. Similarly, nurses at Accra Psychiatric Hospital were also less likely than those at the Pantang Hospital to have low stress relative to high stress, *b*=-.139, *p*=.027, *OR*=.870. Generally speaking, it can be concluded that nurses at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of stress than those working in Pantang Hospital.

Finally, the results also found that male nurses were less likely than female nurses to have low stress relative to high stress, *b*=-16.745, *p*<.001, *OR*=.342. Male nurses were also less likely than female staff to experience moderate levels of stress relative to high stress, *b*=-17.221, *p*<.001, *OR*=.318. The findings suggest that male nurses have more chances of experiencing high levels of stress whereas female nurses have lower chances of experiencing higher levels of stress.

Discussion of Research Findings

The findings of this study were discussed in relation to the following:

1. Prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana,
2. Prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana,
3. Socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

Prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana.

The purpose of research question one was to determine the prevalence of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. The study revealed that an overwhelming majority of mental health nurses (over 90 percent) had minimal depression and low anxiety. This suggests that mental health nurses had little to no exhibition of self-accusations, sense of failure, lack of satisfaction, feelings of guilt, self-dislike, suicidal ideations, mood swing, social isolation, and decision-making difficulties. Similarly, these mental health nurses exhibited little to no behavioural patterns regarding difficulty in relaxing, terrified, numbness, breathing difficulties, nervousness, and fear of losing control. In my view, the presence of minimal depression and low anxiety does not necessarily mean that these two psychological distress variables are non-existent in the nursing career. Rather, it could be attributed to the fact that depression and anxiety among these mental health nurses are being managed properly. Looking at certain indicators concerning socio-demographic background of the mental

health nurses who participated in this study appears not to be surprising obtaining such results. Take for example age, it is obvious that younger adults will be able to manage anxiety and depression very well as compared to older adult nurses. Let me hasten to say that older adults already have challenges with emotional, social and psychological adjustment and this coupled with depression and anxiety affecting these same elements, older adults may be more susceptible to depression and anxiety.

In this study, about 69% of mental health nurses were in the age bracket of 25-34 years and this might explain why depression and anxiety were found to be minimal. Another important demographic variable which may explain the result is years of experience. Over 80% had worked as mental health nurses for more than a year. It is expected that the longer nurses work in an area the better their adjustment levels. Thus, they may experience anxiety and depression but would have the ability to manage and control them due to their experience. Interestingly, more than half of the mental health nurses who participated in this study were in the acute ward; suggesting why depression and anxiety are very little in existence. In such a department, patients stay for short times and they leave or even placed at an appropriate ward for further treatment. Arguably, depression and anxiety may not be that much.

Stress, however, had a different trend of results in this study. Although, a larger percentage of mental health nurses had low stress (56.6%), a relatively high number of them were moderately stressed (42.8%). Generally, it could be said that the mental health nurses in this study had low to moderate stress. This is to say that these mental health nurses had some level of emotional and

physical tensions which arises from several activities and in this case, the nature of nursing may introduce stress to them.

Whereas findings from some previous studies support that of this study, other studies seem to have findings which are contrary to this study. Unlike the findings of this study, Tsaras and colleagues (2018) found a high prevalence among mental health nurses in Greece with 52.7% and 48.2% of them at risk of depression and anxiety respectively. Contrary to the findings of this study, Jordan et al. (2016) also found that nurses in the United States of America were not mentally healthy, as 92% of nurses were suffering from moderate-to-very high-stress level. In Maharaj et al.'s (2019) study, it was found that more than a quarter of the nurses had presented with severe depressive symptoms. The prevalence of anxiety symptoms was common among nurses in Australia, with a prevalence rate of over 40 and over 10% had presented with severe anxiety. This contradict the findings of this study.

However, in Maharaj et al.'s (2019) study, the trend of results for stress levels corroborates the findings of this study. In Maharaj et al.'s study, more than half of the nurses had low to moderate stress levels; this was confirmed in this study. Creedy et al.'s (2017) study also had some findings which were consistent with that of this study and other findings were not. Whereas Creedy et al. (2017) found that midwives had high depression, anxiety and stress levels, this study found depression and anxiety among mental health nurses to be low and stress to be low to moderate. Several other studies reported that nurses recorded moderate to a high incidence rate of depression, anxiety and stress (Chen et al., 2016; Cheung & Yip, 2015; Huang et al., 2018; Tran et al., 2019).

These discrepancies observed between the findings of this study and previous studies are due to differences in research study settings. Previous studies have concentrated on psychological distress among general nurses with only a few of them focusing on mental health nurses (Jordan et al., 2016; Tsaras et al., 2018). The psychological distress arguably is more likely to be different among these two population. Also, the majority of the studies were conducted outside Ghana and thus, the conditions of work in nursing or health sector might differ from one country to another. The study by Amidu et al. (2018) which happens to be conducted in Ghana (and had contrary results with this study), also sampled general nurses and found high distress levels.

Prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana

The aim of research question two was to identify the prevalence of work place risk factors of depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. This study revealed that the mental health nurses were not satisfied with their current job, probably, due to their conditions of work such as heavy workload, low salaries, low incentives, bad leadership, few equipment available for use, among others. Conditions at the workplace such as heavy workload, conflict and violence can be associated with a high risk of developing mental health condition among health care professionals (Ghazwin et al., 2016; Koinis et al., 2015; Tran et al., 2019). Although their source of dissatisfaction is unknown, the understanding is that these sources of dissatisfaction pertain to the work. An obvious one, which was found in this study, is working in the shift rotation pattern, especially when the shift rotations comes with different role and responsibilities.

In addition, the average hours of work per day for mental health nurses were up to 8 hours and sleep up to 6-7 hours. These findings corroborate with several other previous studies in this area. Studies conducted by Khodadadi et al. (2016); Koinis et al. (2015); Tsaras et al. (2018) have shown that the risk factors of depression, anxiety and stress among nurses include personal experience, economic status, emotional maturity, heavy workload, different shift rotation and work experience. Findings in Iran revealed that lack of collaboration and support from colleagues, poor physician and nurse relationship and inadequate salaries were identified to be risk factors for stress among critical care nurses (Khodadadi et al., 2016; Vahedian-Azimi et al., 2019). Other findings include poor nurse-patient ratio, excessive workload, frequent breakdown of equipment, and shift rotation systems used in hospitals were identified to be risk factors of stress among certified critical care nurses in Iran (Vahedian-Azimi et al., 2019). In Australia, nurses who were not satisfied with their job reported symptoms of stress and depression than other categories of nurses (Maharaj et al., 2019).

These findings support the results of this study. Consistent with the findings of this study, Creedy et al. (2017) found that nurses reported high-stress levels due to the nature of their work, workplace conditions, and their socialization into ways of working that minimize self- care. Thus, workplace circumstances contribute to some midwives becoming highly susceptible to occupational burnout, which eventually contributes to reduced quality of care. This was also supported by Yeshaw and Mossie (2017) who found that hours of sleep and job satisfaction were associated with the prevalence of depression, anxiety and stress. Working hours of nurses have shown to have a

positive correlation with the prevalence of depression and anxiety. Nurses who work for longer hours and in a shift system have a higher risk for developing depression, stress and anxiety (Id et al., 2018; Khodadadi et al., 2016).

Socio-demographic characteristics that predict depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana

The objective of research question three was to identify socio-demographic characteristics that predicts depression, anxiety and stress among nurses in public psychiatric hospitals in Ghana. The study revealed that there is a positive association between educational level and depression such that those with higher educational level are more likely to have a higher level of depression and vice versa. However, the findings suggest that higher levels of education are associated with lower levels of anxiety. This is to say that mental health nurses with diploma, degrees are more likely to be anxious than those with a master's degree. The study also found a negative association between educational level and stress such that those with higher educational level are more likely to experience lower levels of stress and vice versa. This confirms the findings of Chen et al.'s (2016) study in Taiwan, which found that nurses without degree showed high levels of job stress than nurses with a degree.

Tsaras et al. (2018) also found that nurses who obtained a university degree were more likely to develop depression and anxiety. The higher the level of education of nurses, the higher their risk of experiencing depression and anxiety. The findings of Tsaras et al. (2018) is consistent with the findings of this study which found a positive association between educational level and depression. However, the result of the association between education

level and anxiety was inconsistent. Whereas Tsaras et al. (2018) found a positive association, this study found a negative association. It was identified in Iran that, nurses who have higher education such as a master of science in nursing were less likely to experience depression, anxiety and stress as compared to nurses with a lower form of education such as bachelor of science in nursing (Khodadadi et al., 2016). The findings of this study support the findings of Khodadadi et al. (2016) except for the relationship between education level and depression which was positive in this study.

Although the department of the nurses was not significantly associated with the anxiety levels, this association was significant in the case of depression and stress. The result found that mental health nurses in the Administration and OPD are more likely to have high depression than those in the Acute Ward and Chronic Ward. However, those in the Chronic Ward are more likely to have higher levels of depression than those in the Acute Ward. Similarly, it was also found that mental health nurses in the Administration and OPD are more likely to be highly stressed than those in the Acute Ward and Chronic Ward. However, those in the Chronic Ward are more likely to have higher levels of stress than those in the Acute Ward. Seemingly, different work settings may pose varying levels of job demands on the nurses.

The findings suggest that mental health nurses at the Administration and OPD are more depressed and stressed. This could be as a result of the structure of the hospital. That is, in hospitals where very few nurses are placed at the OPD and Administration, there is the likelihood of workload being heavy and as such these nurses may be more depressed and stressed more than those in the wards. For those in the acute ward, it is obvious that they were the

least stressed and depressed. This is because patients are treated in a short period and this may account for the reasons why they had the least stress and depression levels. The findings of this study reflect the views of scholars that nurses who work in departments such as the emergency unit and intensive care units experience a high rate of mental health challenges as compared to other nursing staff because of increased workload and dealing with death situations (Khodadadi et al., 2016; Koinis et al., 2015).

In this study, it can be indicated that the income of mental health nurses is positively and significantly associated with levels of depression. Thus, nurses who take a higher amount of income are more likely to have higher levels of depression than those who take a relatively smaller amount. It was found that the income of nurses is negatively and significantly associated with stress levels. Thus, nurses who take a higher amount of income are likely to experience low-stress levels than those with a relatively smaller income. However, income was not significantly associated with anxiety levels. This finding is consistent with the study by Yeshaw and Mossie (2017) who found that middle to high-income earners was less likely to suffer from stress except for the relationship of depression and income which is positively associated in this study. Whereas this study did not find any association between income and anxiety levels, Yeshaw and Mossie (2017) observed; there was a significant association between income and anxiety level.

The result from this study generally revealed that there is a positive association between age and depression such that older mental health nurses are more likely to have higher levels of depression as compared to younger nurses. The results further indicate that younger mental health nurses are more

likely to suffer from severe anxiety as compared to older nurses. This finding is consistent with the results of Huang et al. (2018) who found that middle-aged and late-middle-aged nurses had a significantly higher risk for depression compared to younger nurses. However, the findings of this study are inconsistent with the findings of Id et al. (2018) which indicates that, nurses in the middle ages have higher risk of anxiety as compared to younger nurses.

The result of this study revealed that there is a negative association between age and stress such that older mental health nurses are likely to experience low levels of stress and younger mental health nurses are more likely to have high levels of stress. This finding is consistent with that of Cheung and Yip's (2015) study, as the age of nurses increased, depression, anxiety and stress symptoms decreased. Unlike the findings of this study, Huang et al. (2018) found a positive association between age and stress.

It was found that mental health nurses at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of anxiety than those working in Pantang Hospital. The results further showed that mental health nurses at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of stress than those working in Pantang Hospital. However, the type of hospital was not significantly associated with depression.

Even though gender was not significantly associated with depression, the results suggest that male mental health nurses have more chances of experiencing low levels of anxiety whereas female mental health nurses have higher chances of experiencing higher levels of anxiety. The findings further revealed that male mental health nurses have more chances of experiencing

high levels of stress whereas female mental health nurses have lower chances of experiencing higher levels of stress. Cheung and Yip (2015) found that female nurses in Hong Kong reported more episodes of depression, anxiety and symptoms of stress than male nurses. Except for the stress component, the finding of this study is consistent with the findings of Cheung and Yip (Cheung & Yip, 2015). In Huang et al.'s (2018) study, male nurses had a significantly lower risk for anxiety when compared to female nurses, although female nurses still had a significantly lower risk for anxiety than the general population (Huang et al., 2018). This finding is consistent with the results of this study which found that female mental health nurses were more likely to have higher levels of anxiety. The prevalence of depression among female nurses is higher than male nurses working in health care facilities (Ghazwin et al., 2016). Furthermore, in Iran female nurses had a higher risk of experiencing depression, anxiety and stress as compared to male nurses (Khodadadi et al., 2016). This is in disagreement with the findings of this study which revealed that there is no significant association between depression and gender.

Chapter Summary

In summary the study revealed that, mental health nurses experienced low levels of depression and anxiety. It was shown that greater portion of mental health nurses experienced low to moderate stress levels. Also, mental health nurses had low risk to develop depression, anxiety and stress at the work place. In addition, mental health nurses with higher educational level were more likely to have a higher level of depression. However, mental health nurses who have diploma were more likely to be anxious and stressed than

those with a degree or master's degree. It was further revealed that, mental health nurses in the Administration and OPD are more likely to have high depression and stress than those in the Acute ward and Chronic ward. Furthermore, mental health nurses who take a higher amount of income are more likely to experience higher levels of depression than those who take a relatively smaller amount. Also, older mental health nurses are more likely to experience low levels of stress and anxiety than younger ones. It can be concluded that mental health nurses who work at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to have higher levels of stress and anxiety than those working in Pantang Hospital.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

This study was conducted to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. A cross-sectional research design was used for this study. This study focused on (a) prevalence of depression, anxiety and stress, (b) prevalence of work place risk factors of depression, anxiety and stress, and (c) socio-demographic characteristics that predict depression, anxiety and stress among nurses in public Psychiatric Hospitals in Ghana.

The study was conducted in the three public psychiatric hospitals in Ghana, that is Ankaful Psychiatric Hospital in Cape Coast, Accra Psychiatric Hospital, Accra and Pantang Hospital, Accra. Respondents for this study were professional nurses who work in the three public psychiatric hospitals in Ghana. A probability proportionate to size and simple random sampling method were used to select the 311 respondents from the three public psychiatric hospitals in Ghana for this study and data was collected using a questionnaire.

The instrument consists of five sections: Section A (Socio-demographic characteristics), Section B (Risk factors for Depression, Anxiety and Stress), Section C (Beck's Depression Inventory), Section D (Beck's Anxiety Inventory), Section E (Perceived Stress Scale). Data generated from the questionnaire were coded and analysed descriptively (frequencies, percentages, mean, standard deviation). A multinomial logistic regression

analysis was used to establish socio-demographic characteristics that predict depression, anxiety and stress.

Summary of Key Findings

1. It was found that majority of mental health nurses (over 90 percent) experienced minimal depression and low levels of anxiety. This suggests that the mental health nurses experienced little to no exhibition of self-accusations, sense of failure, lack of satisfaction and feelings of guilt. Also, a larger percentage of the mental health nurses experienced low to moderate stress levels.
2. This study findings showed that conditions at the workplace such as heavy workload, conflict and violence can be associated with a high risk of developing mental health condition. Mental health nurses were generally not satisfied with their current job, probably due to their conditions of work such as heavy workload and few equipment available for use.
3. The study revealed a positive association between educational level and depression such that mental health nurses with higher educational level are more likely to experience higher level of depression and vice versa. However, there appears to be a negative association between educational level and anxiety and stress such that nurses with higher educational level are more likely to experience lower levels of anxiety and stress and vice versa. In addition, the results suggest that mental health nurses working in Administration and OPD are more likely to experience high depression and stress levels than those working in the Acute and Chronic wards. Also, it can be indicated that the income of

mental health nurses is positively associated with levels of depression. Thus, mental health nurses who take a higher amount of income are more likely to have higher levels of depression than those who take a relatively smaller amount. Whereas, income of mental health nurses is negatively associated with stress levels. Thus, mental health nurses who take a higher amount of income are likely to experience low stress levels than those with relatively smaller income. The result generally implies that there is a positive association between age and depression such that older mental health nurses are more likely to have higher levels of depression as compared to younger ones. However, younger mental health nurses are more likely to suffer from severe anxiety and high levels of stress as compared to older ones. It can be concluded that nurses at Ankaful Psychiatric Hospital and Accra Psychiatric Hospital are likely to experience higher levels of stress and anxiety than those working in Pantang Hospital.

Conclusions

On the basis of the results obtained in this study, the following conclusions were drawn. The study generally indicated that over 90 percent of mental health nurses had minimal depression and low anxiety. It could, therefore, be concluded that, to a great extent, mental health nurses had little to no exhibition of self-accusations, sense of failure, lack of satisfaction and feelings of guilt. It was generally shown that, a larger percentage of the mental health nurses had low to moderate stress levels.

On the work place risk factors of depression, anxiety and stress among nurses, the study reported that, heavy workload, conflict and violence at the

work place can be associated with a high risk of developing mental health condition among nurse in the three public psychiatric hospitals in Ghana.

Mental health nurses with degree are more likely to experience depression than those with diploma however, mental health nurses with diploma are more likely to experience anxiety and stress than those with degree. The challenges faced by mental health nurses in obtaining higher education such lack of study leave, financial difficulties coupled with lack of recognition of their certificate after higher education may increase their risk of experiencing depression, anxiety and stress. It can be concluded that mental health nurses working at Pantang Hospital experience minimal anxiety and stress levels as compared to those working at Accra Psychiatric Hospital and Ankaful Psychiatric Hospital.

Recommendations

In view of the above research findings and the conclusions arrived at, the following recommendations are made.

1. Majority of mental health nurses experienced minimal depression, low anxiety and stress levels. It is recommended that the management of the psychiatric hospitals especially Accra Psychiatric Hospital and Ankaful Psychiatric Hospital give timely in-service training on management of depression, anxiety and stress even though mental health nurses depression, anxiety and stress level is low. The purpose of this is to help mental health nurses experience very minimal level of depression, anxiety and stress to improve nurse's quality of life, patients care and service delivery.

2. Heavy workload, conflict and violence at the work place were associated with high risk of developing mental health conditions among mental health nurses. It is therefore, recommended that, the management of the psychiatric hospitals organize training for mental health nurses on conflict resolution and management of violence to reduce the risk of developing depression, anxiety and stress.
3. Mental health nurses with higher educational level were more likely to have higher level of depression. It is therefore, recommended that mental health nurses with higher education level should be given training on management of depression. This would help highly educated mental health nurses to reduce the level of depression they experience at the workplace.
4. Higher levels of education are associated with lower levels of anxiety and stress among mental health nurses. It is recommended that, the Ministry of Health, Mental Health Authority and the management of the three public psychiatric hospitals institute measures to facilitate the easy enrolment of mental health nurses into higher level of education to reduce their stress and anxiety levels.
5. Mental health nurses who work at the OPD and Administration were more likely to experience higher levels of depression and stress. It is therefore recommended that management of the three public psychiatric hospitals organize in-service training for mental health nurses especially those working at the OPD and Administration to equip them with the needed skills to ensure quality delivery of health care and reduce their depression and stress levels.

6. Majority of mental health nurses experienced minimal depression, low anxiety and low stress level. It is recommended that hospital management should encourage nurses to keep up and maintain their positive attitude at the workplace. This would help ensure quality and effective mental health care delivery and promote the welfare of mental health nurses.

Suggestions for Further Research

The following are recommended for future research:

1. It is suggested that, research that will centre on the effects of depression, anxiety and stress on nurses' work performance should be conducted. This is because this study focused on the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana.
2. A qualitative study should also be conducted to describe the experience of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. This study used a quantitative study design which did not give respondents the opportunity to express their emotions and feelings.

REFERENCE

Abdallah, A. R., & Gabr, H. M. (2014). Depression , anxiety and stress among first year medical students in an Egyptian public university. *International Research Journal of Medical Science*, *2*(1), 11–19.

Abela, J. R. Z., & D'Alessandro, D. U. (2002). Beck's cognitive theory of depression: A test of the diathesis-stress and causal mediation components. *British Journal of Clinical Psychology*, *41*(2), 111–128.

Accra Psychiatric Hospital. (2019). *Annual Report*. Accra, Ghana.

Adu-Gyamfi, S. (2017). Mental Health Service in Ghana: A review of the case. *International Journal of Public Health Science (IJPHS)*, *6*(4), 299.

Allen, J. P. (2014). An Overview of Beck's cognitive theory of depression in contemporary literature. *Rochester Institute of Technology*, *53*(9), 1689–1699.

American Psychiatric Association. (2013). *American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders*. Arlington: American Psychiatric Association.

Amidu, N., Issah, H., Alhassan, M., Yakong, V., Yahaya, W., Dapare, P., & Adams, Y. (2018). Stress, anxiety and sleep disorder among nurses: A cross-sectional study of rotation vs fixed shift workers. *International Neuropsychiatric Disease Journal*, *11*(1), 1–12.

Andreou, E., Alexopoulos, E. C., Lionis, C., Varvogli, L., Gnardellis, C., Chrousos, G. P., & Darviri, C. (2011). Perceived Stress Scale: Reliability and validity study in Greece. *International Journal of Environmental Research and Public Health*, *8*(8), 3287–3298.

Ankaful Psychiatric Hospital. (2019). *Annual Report*. Cape Coast, Ghana.

Asamoah, M. K., Osafo, J., & Agyapong, I. (2014). The role of Pentecostal clergy in mental health-care delivery in Ghana. *Mental Health, Religion and Culture*, *17*(6), 601–614.

Ashina, S., Serrano, D., Lipton, R. B., Maizels, M., Manack, A. N., Turkel, C. C., … Buse, D. C. (2012). Depression and risk of transformation of episodic to chronic migraine. *Journal of Headache and Pain*, *13*(8), 615–624.

Atindanbila, S., Abasimi, E., & Anim, M. T. (2012). A study of work related depression, anxiety and stress of nurses at Pantang hospital in Ghana. *Research on Humanities and Social Sciences*, *2*(9), 1–8.

Australian Department of Health. (2010). National Standards for Mental Health Services 2010. *National Mental Health Strategy*, 1–60.

Bardhoshi, G., Duncan, K., & Erford, B. T. (2016). Psychometric meta-analysis of the english version of the beck anxiety inventory. *Journal of Counseling & Development*, *94*, 356–373.

Baxter, A. J., Vos, T., Scott, K. M., Norman, R. E., Flaxman, A. D., Blore, J., & Whiteford, H. A. (2014). The regional distribution of anxiety disorders: implications for the Global Burden of Disease Study, 2010. *International Journal of Methods in Psychiatric Research*, *23*(4), 422–438.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects.* Pennsylvania: University of Pennslylvania Press.

Beck, A. T. (1972). *Depression: Causes and Treatment*. Philadelphia: University of Pennsylvania Press.

Beck, A. T., Brown, G., Kiyosaki, R. T., &, & Lechter, S. L. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, *56*(6), 893–897.

Bird, P., Omar, M., Doku, V., Lund, C., Nsereko, J. R., & Mwanza, J. (2011). Increasing the priority of mental health in Africa: Findings from qualitative research in Ghana, South Africa, Uganda and Zambia. *Health Policy and Planning*, *26*(5), 357–365.

Brandford, A. A., & Reed, D. B. (2016). Depression in registered nurses: A state of the science. *Workplace Health and Safety*, *64*(10), 488–511.

Brown, G. K., Ten Have, T., Henriques, G. R., Xie, S. X., Hollander, J. E., & Beck, A. T. (2005). Cognitive therapy for the prevention of suicide attempts. *Jama*, *294*(5), 563.

Bryman, A. (2008). Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research. *Advances in Mixed Methods Research*, 87–100.

Chan, S. F., & La Greca, A. M. (2020). Perceived Stress Scale (PSS). *Encyclopedia of Behavioral Medicine*, 1–2.

Chen, C. H., Wang, J., Yang, C. S., & Fan, J. Y. (2016). Nurse practitioner job content and stress effects on anxiety and depressive symptoms, and self-perceived health status. *Journal of Nursing Management*, *24*(5), 695–704.

Cheung, T., & Yip, P. S. F. (2015). Depression, anxiety and symptoms of stress among Hong Kong nurses: A cross-sectional study. *International Journal of Environmental Research and Public Health*, *12*(9), 11072–11100.

Clark, D., & Beck, A. T. (2010). Anxiety: A common but multifaceted condition. *Cognitive Therapy of Anxiety Disorders: Science and Practice*, 3–30.

Cohen, S., Kamarck, T. & Mermelstein, R. (1983). A Global Measure of Perceived Stress. *Journal of Health and Social Behavior*, *24*(4), 385–396.

Cooper, S. E. (2014). DSM-5, ICD-10, ICD-11, the psychodynamic diagnostic manual, and person-centered integrative diagnosis: An overview for college mental health therapists. *Journal of College Student Psychotherapy*, *28*(3), 201–217.

Creedy, D. K., Sidebotham, M., Gamble, J., Pallant, J., & Fenwick, J. (2017). Prevalence of burnout, depression, anxiety and stress in Australian midwives: A cross-sectional survey. *BMC Pregnancy and Childbirth*, *17*(1), 1–8.

Dagan, O., Facompré, C. R., & Bernard, K. (2018). Adult attachment representations and depressive symptoms: A meta-analysis. *Journal of Affective Disorders*, *236*, 274–290.

Dapaah, A. K. (2014). Causes of stress among nurses in the Greater Accra Region. *International Journal of Research In Social Sciences*, *3*(8).

Davey, A., Sharma, P., Davey, S., & Shukla, A. (2019). Is work-associated stress converted into psychological distress among the staff nurses: A hospital based study. *Journal of Family Medicine and Primary Care*, *8*(6), 511–516.

Doblyte, S., & Jiménez-Mejías, E. (2017). Understanding help-seeking behavior in depression: A qualitative synthesis of patients' experiences. *Qualitative Health Research*, *27*(1), 100–113.

Elhai, J. D., Hall, B. J., & Erwin, M. C. (2018). Emotion regulation's relationships with depression, anxiety and stress due to imagined smartphone and social media loss. *Psychiatry Research*, *261*(28–34).

Eskay, M., & Nwefuru, B. C. (2019). Cross-sectional study of perceived stress among special education teachers. *Global Journal of Health Science*, *11*(14), 123.

Fajkowska, M., Domaradzka, E., & Wytykowska, A. (2018). Types of anxiety and depression: Theoretical assumptions and development of the anxiety and depression questionnaire. *Frontiers in Psychology*, *8*(JAN), 1–23.

Ferrari, A. J., Somerville, A. J., Baxter, A. J., Norman, R., Patten, S. B., Vos, T., & Whiteford, H. A. (2013). Global variation in the prevalence and incidence of major depressive disorder: A systematic review of the epidemiological literature. *Psychological Medicine*, *43*(3), 471–481.

Fradelos, E., Tzitzikos, G., Giannouli, V., Argyrou, P., Vassilopoulou, C., & Theofilou, P. (2014). Assessment of burn-out and quality of life in nursing professionals: the contribution of perceived social support. *Health Psychology Research*, *2*(1), 11–12.

Fraenkel, J., Wallen, N., & Hyun, H. (2012). *How to design and evaluate research In education.* (8th ed.). New York, NY: McGraw-Hill.

Frost, N. (2011). *Qualitative research methods in psychology: combining core approaches*. New York, NY: McGraw-Hill Education.

Gebrie, H. M. (2018). An analysis of Beck depression inventory 2nd edition (BDI-II). *Global Journal of Endocrinological Metabolism*, *2*(3), 1–5.

Ghazwin, M. Y., Kavian, M., Ahmadloo, M., Jarchi, A., Javadi, S. G., Latifi, S., … Ghajarzadeh, M. (2016). The association between life satisfaction and the extent of depression, anxiety and stress among Iranian nurses: A multicenter survey. *Iranian Journal of Psychiatry*, *11*(2), 120–127.

Gong, Y., Han, T., Chen, W., Dib, H. H., Yang, G., Zhuang, R., … Lu, Z. (2014). Prevalence of anxiety and depressive symptoms and related risk factors among physicians in China: A cross-sectional study. *PLoS One*, *9*(7), 1–7.

Gotlib, I. H., & Krasnoperova, E. (1998). Biased information processing as a vulnerability factor for depression. *Behavior Therapy*, *29*(4), 603–617.

Hallam, R. (1992). *Counselling for anxiety problems* (Vol. 3). London: Sage Publications, Inc.

Herrero, J. & Meneses, J. (2006). Short web-based versions of the perceived stress (PSS) and center for epidemiological studies-depression (CESD) Scales: A comparison to pencil and paper responses among internet users. *Computers in Human Behaviour*, *22*(5), 830–846.

Huang, C. L. C., Wu, M. P., Ho, C. H., Wang, J. J., Id, C. L. H., Wu, M. P., … Wang, J. J. (2018). Risks of treated anxiety, depression, and insomnia among nurses: A nationwide longitudinal cohort study. *PLoS One*, *13*(9), 10–14.

Id, C. L. H., Wu, M., Ho, C., & Wang, J. (2018). Risks of treated anxiety , depression , and insomnia among nurses : A nationwide longitudinal cohort study. *PloS One*, *13*(9), 10–14.

Jackson-Koku, G. (2016). Beck depression inventory. *Occupational Medicine*, *66*(2), 174–175.

Jordan, T. R., Khubchandani, J., & Wiblishauser, M. (2016). The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. *Nursing Research and Practice*, *2016*, 1–11.

Kahn, W. A. (2001). Holding environments at work. *The Journal of Applied Behavioral Science*, *37*(3), 260–279.

Khodadadi, E., Hosseinzadeh, M., Azimzadeh, R., & Fooladi, M. (2016). The relation of depression , anxiety and stress with personal characteristics of nurses in hospitals of Tabriz , Iran. *International Journal of Medical Research & Health Sciences*, *5*(5), 140–148.

Kinser, P. A., & Lyon, D. E. (2014). A conceptual framework of stress vulnerability, depression, and health outcomes in women: Potential uses in research on complementary therapies for depression. *Brain and Behavior*, *4*(5), 665–674.

Koinis, A., Giannou, V., Drantaki, V., Angelaina, S., Stratou, E., & Saridi, M. (2015). The impact of healthcare workers job environment on their mental-emotional health. Coping strategies: the case of a local general hospital. *Health Psychology Research*, *3*(1).

Letvak, S., Ruhm, C. J., & McCoy, T. (2012). Depression in hospital-employed nurses. *Clinical Nurse Specialist*, *26*(3), 177–182.

Lucas, H., Scammell, A., & Hagelskamp, C. (2005). How do GP registrars feel about dealing with mental health issues in the primary care setting? A qualitative investigation. *Primary Health Care Research and Development*, *6*(1), 60–71.

Maharaj, S., Lees, T., & Lal, S. (2019). Prevalence and risk factors of depression, anxiety, and stress in a cohort of Australian nurses. *International Journal of Environmental Research and Public Health*, *16*(1).

Marcus, M., Taghi, Y. M., van Ommeren, M., Chisholm, D., & Saxena, S. (2012). Depression: A global public health concern. *World Mental Health Day*.

Marzouk, M., Ouanes-Besbes, L., Ouanes, I., Hammouda, Z., Dachraoui, F., & Abroug, F. (2018). Prevalence of anxiety and depressive symptoms among medical residents in Tunisia: a cross-sectional survey. *BMJ Open*, *8*(7), 1–7.

McEwen, B. S. (2007). Physiology and neurobiology of stress and adaptation: Central role of the brain. *Physiological Reviews*, *87*(3), 873–904.

McIntosh, C. N., & Fischer, D. G. (2000). Beck's cognitive triad: One versus three factors. *Canadian Journal of Behavioural Science*, *32*(3), 153.

McLachlan, R., Gilfillan, G., & Gordon, J. (2013). *Deep and persistent disadvantage in Australia*. Canberra: Productivity Commission.

Miller, R. L. & Brewer, J. D. (2003). *The A-Z of social research- A dictionary of key social science research concepts*. London: Sage.

Moilanen, D. L. (1995). Validity of Beck's Cognitive Theory of Depression With Nonreferred Adolescents. *Journal of Counseling & Development*, *73*(4), 438–442.

Murray, C. J. L., Vos, T., Lozano, R., Naghavi, M., Flaxman, A. D., Michaud, C., … Lopez, A. D. (2012). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: A systematic analysis for the global burden of disease study 2010. *The Lancet*, *380*(9859), 2197–2223.

Ogah, K. J. (2013). *Decision making in the research process: companion to students and beginning researchers*. Accra, Ghana: Adwinsa.

Oghenetega, L. U., Ejedafiru, E. F., & Rabiu, A. M. (2014). Comparative study of Job stress among teaching staff of library and information science in higher institutions in Nigeria. *Journal of Education and Practice*, *5*(16), 213–221.

Oh, H., Park, K., Yoon, S., Kim, Y., Lee, S.-H., Choi, Y. Y., & Choi, K.-H. (2018). Clinical utility of Beck anxiety inventory in clinical and nonclinical Korean samples. *Frontiers in Psychiatry*, *9*(December), 1–10.

Osman, A., Barrios, F. X., Gutierrez, P. M., Williams, J. E., & Bailey, J. (2007). Psychometric properties of the Beck depression inventory-II in nonclinical adolescent samples. *Journal of Clinical Psychology*, *64*(1), 83–102.

Pantang Hospital. (2019). *Annual Report*. Accra, Ghana.

Papathanasiou, I. V. (2015). Work-related mental consequences: Implications of burnout on mental health status among health care providers. *Acta Informatica Medica*, *23*(1), 22–28.

Perry, L., Lamont, S., Brunero, S., Gallagher, R., & Duffield, C. (2015). The mental health of nurses in acute teaching hospital settings: A cross-sectional survey. *BMC Nursing*, *14*(1), 1–8.

Polit, D. F., & Beck, C. T. (2010). Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, *47*(11), 1451–1458.

Reilly, C. E., Sokol, L., & Butler, A. C. (1999). A cognitive approach to understanding and treating anxiety. *Human Psychopharmacology*, *14*(SUPPL. 1), 16–21.

Ribeiro, R. M., Pompeo, D. A., Pinto, M. H., & De Cassia, R. (2015). Coping strategies of nurses in hospital emergency care services. *ACTA Paulista de Enfermagem*, *28*(3), 216–223.

Roberts, M., Mogan, C., & Asare, J. B. (2014). An overview of Ghana's mental health system: Results from an assessment using the World Health Organization's assessment instrument for mental health systems (WHO-AIMS). *International Journal of Mental Health Systems*, *8*(1), 1–13.

Rotenstein, L. S., Ramos, M. A., Torre, M., Segal, B. J., Peluso, M. J., Guille, C., … Mata, D. A. (2016). Depression, depressive symptoms, and suicidal ideation among medical students. *Jama*, *316*(21), 2214–2236.

Sanz, J., & García-Vera, M. P. (2017). Misconceptions about depression and its treatment (I). *Papeles Del Psicologo*, *38*(3), 169–176.

Sato, T., & McCann, D. (2012). Sociotropy-Autonomy and the Beck depression inventory. *European Journal of Psychological Assessment*, *16*(1), 66–76.

Shahsavarani, A. M., Ashayeri, H., Lotfian, M., & Sattari, K. (2013). The effects of stress on visual selective attention: The moderating role of personality factors. *Journal of American Science*, *9*(6s), 1–16.

Shahsavarani, A. M., Azad, E., Abadi, M., & Kalkhoran, M. H. (2015). Stress: Facts and theories through literature review. *International Journal of Medical Reviews*, *2*(2).

Sharan, P. (2010). An overview of Indian research in personality disorders. *Indian Journal of Psychiatry*, *52*(7), 250.

Starkstein, S. (2018). *A conceptual and therapeutic analysis of fear*. Springer.

Tran, T. T. T., Nguyen, N. B., Luong, M. A., Bui, T. H. A., Phan, T. D., Tran, V. O., … Nguyen, T. Q. (2019). Stress, anxiety and depression in clinical nurses in Vietnam: A cross-sectional survey and cluster analysis. *International Journal of Mental Health Systems*, *13*(1), 1–11.

Trivedi, J. K., & Gupta, P. K. (2010). An overview of indian research in anxiety disorders. *Indian Journal of Psychiatry*, *52*(1), 210.

Tsaras, K., Aristides, D., Mitsi, D., Papathanasiou, I. V., Tzavella, F., Zyga, S., & Fradelos, E. C. (2018). A cross-sectional study for the impact of coping strategies on mental health disorders among psychiatric nurses. *Health Psychology Research*, *6*(1), 9–15.

Usman, A., Akbar, Z., Ahmed, Z., & Ahmed, I. (2011). Work stress experienced by the teaching staff of university of the Punjab, Pakistan: Antecedents and consequences. *International Journal of Business and Social Science*, *2*(8), 202–210.

Vahedian-Azimi, A., Hajiesmaeili, M., Kangasniemi, M., Fornés-Vives, J., Hunsucker, R. L., Rahimibashar, F., … Miller, A. C. (2019). Effects of Stress on Critical Care Nurses: A National Cross-Sectional Study. *Journal of Intensive Care Medicine*, *34*(4), 311–322.

Van de Mortel, T. F. (2008). Faking it: Social desirability response bias in selfreport research. *Australian Journal of Advanced Nursing*, *25*(4), 40–48.

Veloso, L. U., Laurindo, B., Marcilon, L., Pereira, L. R., & De Souza, M. C. F. (2016). Prevalence of anxiety in nursing professionals of urgency and emergency. *Journal of Nursing UFPE*, *10*(11).

Whisman, M. A., & Kwon, P. (1993). Life stress and dysphoria: The role of self-esteem and hopelessness. *Journal of Personality and Social Psychology*, *65*(5), 1054–1060.

Wilson, A., & Somhlaba, N. Z. (2017). The position of Ghana on the progressive map of positive mental health: A critical perspective. *Global Public Health*, *12*(5), 579–588.

Wolf, J. (2008). *Self-administered questionnaire.* Thousand Oaks: Sage Publications, Inc.

World Health Organization. (2005). Quality improvement for mental health. *Mental Health Policy and Service Guidance Package*, 1–74.

World Health Organization. (2011). Human resources for mental health: workforce shortages in low- and middle-income countries. *WHO Press*, (8), 56.

World Health Organization. (2017). Depression and other common mental disorders: Global health estimates. *Geneva: World Health Organization*, *1*(24).

Yeshaw, Y., & Mossie, A. (2017). Depression, anxiety, stress, and their associated factors among Jimma university staff, Jimma, southwest Ethiopia, 2016: A cross-sectional study. *Neuropsychiatric Disease and Treatment*, *13*, 2803–2812.

Yoon, S. L., & Kim, J. H. (2013). Job-related stress, emotional labor, and depressive symptoms among Korean nurses. *Journal of Nursing Scholarship*, *45*(2), 169–176.

APPENDIX A

INFORMED CONSENT FORM

Title: Depression, Anxiety and Stress Among Nurses in Public Psychiatric Hospitals in Ghana

Principal Investigator: Sampson Opoku Agyemang

Address: Department of Mental Health, School of Nursing and Midwifery, College of Health and Allied Sciences, University of Cape Coast.

General Information about Research

This is a research study that seeks to assess the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana with objectives to; determine the prevalence of depression, anxiety and stress among nurses, identify the risk factors of depression, anxiety and stress among nurses, and to assess the relationship between socio-demographic characteristics and depression, anxiety and stress among nurses in public Psychiatric Hospitals in Ghana. Your participation in this study will last for a maximum of one week and during this period, you will be required to fill a questionnaire that will last between 15-20 minutes.

Procedures

To find answers to some of these questions, we invite you to take part in this research project. If you accept, you will be required to: fill out a survey which will be provided by Beatrice Danso, Ruth Dufie Osei, Dennis Mochiah Abizi or myself and collected by Beatrice Danso, Ruth Dufie Osei, Dennis Mochiah Abizi or myself. You are being invited to take part in this survey because we feel that your experience as a professional nurse working in a psychiatric hospital can contribute much to this research project.

If you do not wish to answer any of the questions included in the survey, you may skip them and move on to the next question. The survey will be administered personally by the researcher or his assistant to you. Instructions on the survey will be read and explained to you. You will be given a period of one week to complete the questionnaire after which the researcher or his assistant will come to you for collection. The information recorded is considered confidential, and no one else except myself, and my supervisor will have access to your survey. The expected duration of the survey is about 15-20 minutes.

Possible Risks and Discomforts

It is anticipated that, you will not be exposed to any reasonable physical, social and psychological risk. However, if during the survey you are not comfortable answering any question, you can refuse to answer without any consequences on you.

Possible Benefits

The findings from this study will contribute to the body of knowledge in the area of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. This will contribute to the understanding of how nurses are exposed to depression, anxiety and stress. It will help to identify the most prevalent stressors among nurses. This is essential to provide a safe and adaptable workplace and promote the mental health and wellbeing of nurses in the clinical area.

It will be beneficial to the three psychiatric hospitals in Ghana to realize the number of nurses in the facilities who suffer from these mental

health challenges. It will influence the decision of the management of these hospitals to put measures in place to reduce the effects of these conditions on job performance of nurses. The World Health Organization, Ministry of Health, Ghana Health Services, Mental Health Authority and other relevant organizations in that, they will be furnished with evidence of the existence of depression, anxiety and stress among nurses. This will inform policy on how to reduce the prevalence of these mental health challenges among nurses.

Confidentiality

Information about you will be protected to the best of my ability. You will not be named in any reports. The survey will be stored in a safe and only the research team may have access to look at your research records. The answered questionnaire will be keyed into Statistical Package for Social Sciences (SPSS) software and stored on the researcher's laptop with password protection while the hardcopy will be put in a drawer under key and lock. Only the principal investigator and the supervisor will have access to the information on the questionnaire. The questionnaire will be kept for five (5) years after data analysis.

Compensation

There will be no compensation packages either in cash or kind available for you.

Voluntary Participation and Right to Leave the Research

Participation in this study is voluntary without coercion or any form of force, you are at liberty to withdraw from it for your own personal reasons without prior approval from any one. Withdrawal from this study will not in any way affect you.

Contacts for Additional Information

In case of additional information about the study, you can contact the underlisted persons

Sampson Opoku Agyemang

Department of Mental Health, School of Nursing and Midwifery, College of Health and Allied Sciences, University of Cape Coast, PMB, Cape Coast, Ghana

Telephone: +233243373271

email address: sampson.agyemang@stu.ucc.edu.gh

Supervisor

Dr. Ebu Enyan Nancy

Tel: 0541145193

Email: nebu@ucc.edu.gh

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB). If you have any questions about your rights as a research participant you can contact the Administrator at the IRB Office between the hours of 8:00 am and 4:30 p.m. through the phones lines 0558093143/0508878309/0 244207814 or email address: irb@ucc.edu.gh.

VOLUNTEER AGREEMENT

The above document describing the benefits, risk and procedures for the research title: **Depression, Anxiety and Stress Among Nurses in Public Psychiatric Hospitals in Ghana** has been read and explained to me.

I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

_____ _____

Date Name and signature or mark of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions answered and the volunteer has agreed to take part in the research

_____ _____

Date Name and signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated participating in this research have been explained to the above individual.

_____ _____

Date Name Signature of Person Who Obtained Consent

APPENDIX B

QUESTIONNAIRE

UNIVERSITY OF CAPE COAST

COLLEGE OF HEALTH AND ALLIED SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

I am a second year Master of Nursing student of the University of Cape Coast conducting a study as part of partial fulfilment for the award of Master of Nursing Degree. You have been selected to participate in this study to provide information on depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. The study is important in the sense that it will ultimately lead to identify the prevalence and risk factors of depression, anxiety and stress among nurses working in public psychiatric hospitals in Ghana. Please answer the questions as frankly as you can. Whatever you say will be treated as confidential. Your name will not be associated with the responses you will give. Thank you in advance for your cooperation.

Instruction: Please tick [√] where appropriate, and for others you may specify by writing.

SECTION A: DEMOGRAPHIC DATA OF RESPONDENT

1. Gender

   A. Male [ ] B. Female [ ]

2. How old are you? …….

3. Marital status

   A. Single [ ] B. Married [ ] C. Divorced/separated [ ] D. Widowed [ ]

4. Educational status

   A. Diploma [ ] B. Bachelor degree [ ] C. Masters [ ]

5. Name of hospital where you work?

   ……

6. Number of years spent in the nursing profession

   A. Less than a year [ ] B. 1-3 years [ ] C. 4-6 years [ ] D. 7-9 years [ ] E. 10 years and above [ ]

7. Department/Ward

   A. Administration [ ] B. OPD [ ] C. Acute Ward [ ] D. Chronic Ward [ ]

8. Monthly income

   A. Less than 1500 cedis [ ] B. 1500-2000 cedis [ ]

   C. 2100-2900 cedis[ ] D. 3000 cedis and above [ ]

9. Religion

   A. Christianity [ ] B. Islam [ ] C. Traditional religion [ ]

   Other specify ……..

SECTION B: RISK FACTORS FOR DEPRESSION, ANXIETY AND STRESS

The statements below give a description of risk factors for depression, anxiety and stress. Please kindly indicate your response to the statement by ticking [√] Yes, No, Not sure where appropriate.

No	Statement	Yes	No	Not sure
10	Are you satisfied with your current job?			
11	Do you work in a shift rotation pattern?			
12	Have you experience workplace violence in the past 1 month?			
13	Have you had conflict with colleagues at the work place in the past 1 month?			
14	Do you have a history of chronic illness?			
15	Do you drink alcohol?			

16. What is your average work hours per day?

A. Up to 8 hours [ ] B. 9-10 hours [ ] C. 11 hours or more. [ ]

17. What is your average sleep hours per day?

A. Up to 5 hours [ ] B. 6 to 7 hours [ ] C. 8 hours or more [ ]

SECTION C: BECK'S DEPRESSION INVENTORY

Please read each statement and circle a number 0,1,2, or 3 which indicates how much the statement applied to you over the past month. There are no right or wrong answers. The rating scale is as follows:

0: Did not apply to me at all- **NEVER**

1: Applied to me some degree, or some of the time- **SOMETIMES**

2: Applied to me to a considerable degree, or a good part of time- **OFTEN**

3: Applied to me very much, or most of the time- **ALMOST ALWAYS**

No	Statement	N	S	O	AA
18.	I am so sad and unhappy that I can't stand it				
19.	I feel the future is hopeless and that things cannot improve				
20.	I feel I am a complete failure as a person				
21.	I am dissatisfied or bored with everything				
22.	I feel guilty all of the time				
23.	I feel I am being punished				
24.	I hate myself				
25.	I blame myself for everything bad that happens				
26.	I would kill myself if I had the chance				

27.	I used to be able to cry, but now I can't cry even though I want to				
28.	I feel irritated all the time				
29.	I have lost all of my interest in other people				
30.	I can't make decisions at all anymore				
31.	I believe that I look ugly				
32.	I can't do any work at all				
33.	I wake up several hours earlier than I used to and cannot get back to sleep				
34.	I am too tired to do anything				
35.	I have no appetite at all anymore				
36.	I have lost more than fifteen pounds				
37.	I am so worried about my physical problems that I cannot think of anything else				
38.	I have lost interest in sex completely				

SECTION D: BECK'S ANXIETY INVENTORY

Please read each statement and circle a number 0,1,2, or 3 which indicates how much the statement applied to you over the past month. There are no right or wrong answers. The rating scale is as follows:

0: **Not at All**

1: **Mildly**- but it didn't bother me much

2: Moderately- it wasn't pleasant at times

3: **Severely**- it bothered me a lot

No	Statement	Not at All	Mildly	Moderately	Severely
38	Numbness or tingling				
39	Feeling hot				
40	Wobbliness in legs				
41	Unable to relax				
42	Fear of worst happening				
43	Dizzy or lightheaded				
44	Heart pounding/racing				
45	Unsteady				
46	Terrified or afraid				

47	Nervous				
48	Feeling of choking				
49	Hands trembling				
50	Shaky / unsteady				
51	Fear of losing control				
52	Difficulty in breathing				
53	Fear of dying				
54	Scared				
55	Indigestion				
56	Faint / lightheaded				
57	Face flushed				
58	Hot/cold sweats				

SECTION E: PERCEIVED STRESS SCALE

Please read each statement and circle a number 0,1,2, or 3 which indicates how much the statement applied to you over the past month. There are no right or wrong answers. The rating scale is as follows:

0: **NEVER**, **1**: **Almost Never**, **2: Sometimes**, **3: Fairly Often**, **4: Very Often**

No	Statement **In the last month, how often have you been/felt:**	N	AN	S	FO	VO
59	Upset because of something that happened unexpectedly?					
60	You were unable to control the important things in your life?					
61	Nervous and stressed?					
62	You could not cope with all the things that you had to do?					
63	Angered because of things that happened that were outside of your control?					
64	Difficulties were piling up so high that you could not overcome them?					
65	Confident about your ability to handle your personal problems?					
66	Things were going your way?					

67	Able to control irritations in your life?					
68	You were on top of things?					

APPENDIX C

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143 / 0508878309/ 0244207814
E-MAIL: irb@ucc.edu.gh
OUR REF: UCC/IRB/A/2016/610
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

C/O Directorate of Research, Innovation and Consultancy

20TH FEBRUARY, 2020

Mr. Sampson Opoku Agyemang
School of Nursing and Midwifery
University of Cape Coast

Dear Mr. Agyemang,

ETHICAL CLEARANCE – ID (UCCIRB/CHAS/2019/210)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol titled **Depression, Anxiety and Stress among Nurses in Public Psychiatric Hospital in Ghana.** This approval is valid from 20th February, 2020 to 19th February, 2021. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST