UNIVERSITY OF CAPE COAST

HEALTH ANXIETY, STRESS AND COPING STRATEGIES AMONG HEALTH PROFESSIONALS DURING COVID-19 PANDEMIC IN CAPE COAST METROPOLIS

BRIDGETTE BAABA NZIMA-MENSAH

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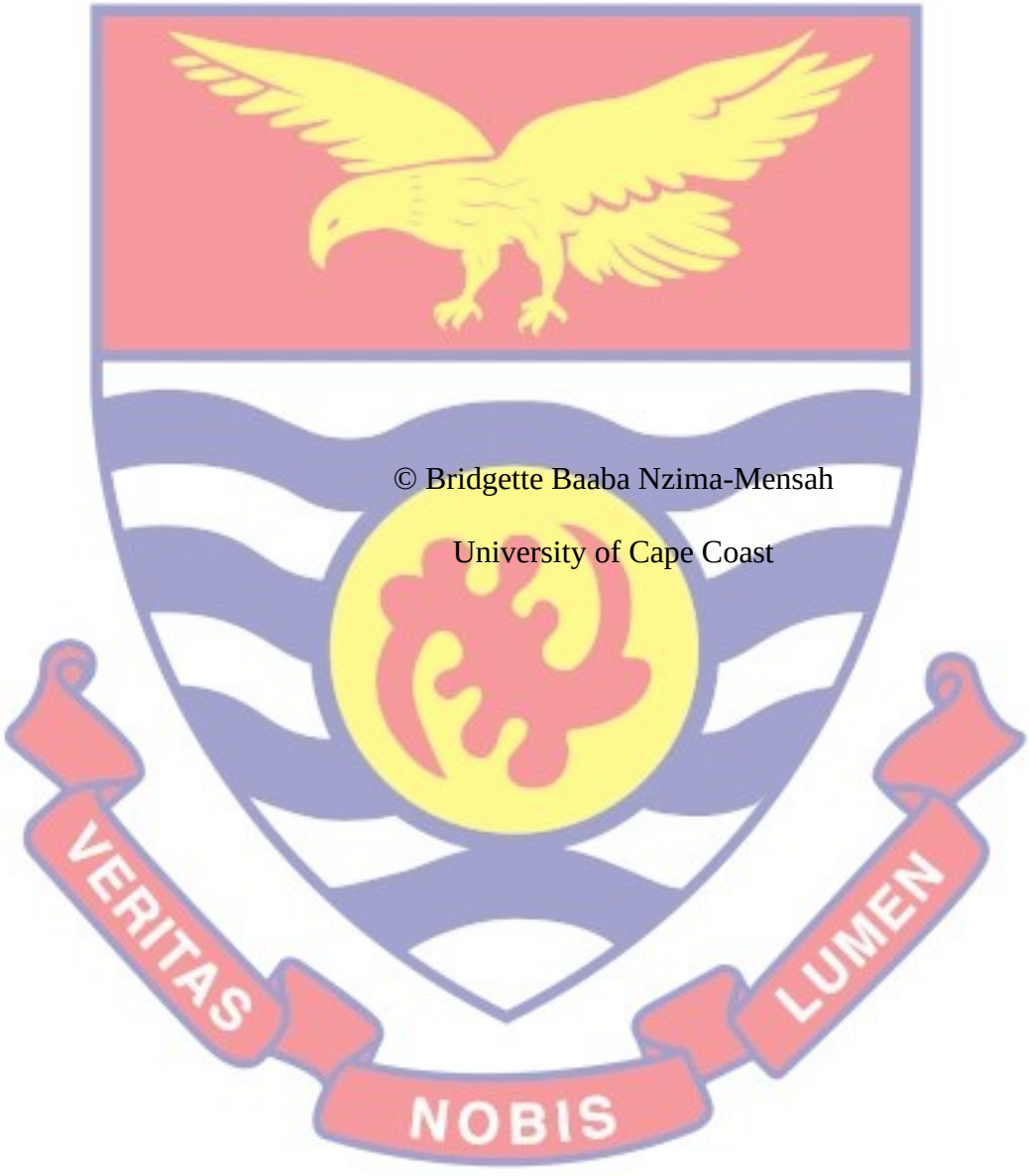

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BY

BRIDGETTE BAABA NZIMA-MENSAH

Thesis submitted to the Department of Guidance and Counselling of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Guidance and Counselling

MAY 2022

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 ……..…

Name: ……

Supervisors' Declaration

We 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.

Principal Supervisor's Signature …….. Date ……..…

Name: ……

ABSTRACT

The insurgence of Coronavirus disease popularly referred to as COVID-19 has tremendously affected healthcare professionals globally. The aim of this study was to investigate experiences of Health Anxiety, Stress and Coping during the Covid-19 pandemic among healthcare professionals in selected hospitals in the Cape Coast Metropolis. This study adopted the Descriptive survey design. The Multistage sampling technique was used to select 322 health professionals. The health professionals included Medical Officers, Physician Assistants and Nurses. Data were gathered using the Health Anxiety Inventory (HAI-SF), Perceived Stress Scale (PSS), and the Brief-COPE Inventory. Analyses were conducted using mean and standard deviation, ANOVA, Pearson Correlation Coefficient, Multiple Linear Regression Analysis, as well as Independent Sample t test. The findings showed that healthcare professionals in the Cape Coast Metropolis experienced low levels of health anxiety and stress during the current COVID-19 pandemic. There were no significant differences in the experiences of health anxiety and stress with regards to the categories of health professionals. However, male healthcare professionals were discovered to have experienced a significantly higher health anxiety than females. Additionally, it was found that coping strategies predicted or accounted for variances in experiences of health anxiety and stress among health professionals. But there were no significant gender differences in terms of stress. Considering the findings, it was recommended that medical personnel should be consistently examined for evaluating indicators of anxiety and stress and also trained to adopt appropriate coping strategies to mitigate the effect in this pandemic

KEYWORDS

Health Anxiety

Stress

Coping

Healthcare Professionals

Covid-19

Pandemic

Coronavirus

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DEDICATION

In memory of my mother, Dorothy Adwoa Anfua Barkers.

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CHAPTER ONE

INTRODUCTION

Coronavirus disease commonly called COVID-19 is believed to have spread from Wuhan, China to the rest of the world, killing millions of people globally. This disease is not only highly infectious and contagious, but very devastating. Researches have been conducted into many infectious diseases such as Influenza (flu), Ebola, and Tuberculosis (TB), Chicken pox. The prevention and management of the disease generally is the work of healthcare professionals, who do their best to save lives. This study therefore examined the health anxiety, stress, and coping strategies of healthcare professionals during COVID-19 pandemic in Cape Coast Metropolis of Ghana. It is hoped that the theoretical and practical implication of the results of the study will help Healthcare Professionals cope with this pandemic.

Background to the Study

The insurgence of Coronavirus disease popularly referred to as COVID-19 has tremendously affected people globally. The condition is extremely infectious and mainly caused by a virus known as Severe Acute Respiratory Syndrome – Coronavirus 2 (SARS-CoV-2) (Gorbalenya, Baker, Baric, De Groot, Drosten, Gulyaeva, 2020). Some studies have revealed that a person can be infected through contact with droplets from the nose or mouth when an infected individual normally sneezes, coughs or speaks (Muhie, 2020; World Health Organization (WHO), 2020). The novel disease was discovered in Wuhan city, in the Hubei Province in China in December 2019 (WHO, 2020).

Evidence also suggests that the virus that causes COVID-19 can survive outside a host from three (3) to seventy-two (72) hours depending on the contact surfaces (WHO, 2020). The condition is characterized by fever, difficulty in breathing, dry cough, and fatigue (Grant, Geoghegan, Arbyn, Mohammed, Mcguinness, Clarke, & Wade, 2020). The virus has an incubation period of 14 days after which affected persons experience few to no symptoms before the condition worsens (Lauer, Grantz, Bi, Jones, Zheng, Meredith & Lessler, 2020). The Centers of Disease Control and Prevention (2020) and the WHO (2020) approved techniques for prevention include ensuring a physical gap of at least 3 feet in a social gathering, wearing face mask, regular and proper washing of hands, and constantly using hand sanitizers as well as the regular disinfecting of open environment such as the workplace, church, homes among others. Treatment of the disease varies in various countries and it mostly depends on the country's resources and experts available.

Due to the swift spread of COVID-19 to other parts of the world, the WHO affirmed the condition as a pandemic on March 11th 2020 (WHO, 2020). By February 2020, China had experienced a significant morbidity and mortality rate due to the condition (Bassetti, Vena, & Giacobbe, 2020; Holshue *et al*., 2020). A report by the WHO (2020) indicated that as at 24th May 2020, there were approximately 5, 200, 000 cases including a death toll of 336 430. The John Hopkins University (2020) reported over 23 million established cases and 790,000 deaths due to the disease in 188 countries worldwide (John Hopkins University, 2020). Similarly, Dong, Du and Gardner (2020) found that in April 2020, 198 countries had cases of COVID-19, and approximately 2.4 million persons have been infected whiles over 150, 000 persons lose their lives through

the condition. According to the WHO (2020), as at 22nd September 2020, confirmed cases globally stood at approximately 3.2 million and with a mortality of approximately 970, 000. This data represents global morbidity and mortality in a space of 10 months since the disease was discovered.

In Africa, the first case was discovered on February 14th, 2020 in Egypt whiles Sub-Saharan Africa (SSA) recorded its first case on 27th of February in Nigeria. Further, it was revealed that as at July 7th, the continent had 493, 131 confirmed cases of COVID-19 whiles 11, 643 deaths were reported (WHO, 2020). This represented a 25% rise in confirmed cases and 18% increase in deaths within one week. The African continent was ranked 5th globally in terms of high confirmed cases as at September 2020. Confirmed cases in the sub-region were approximately 1.2 million. Nonetheless, during the onset of the spread of the disease, projections revealed that the continent would record the highest morbidity and mortality. Also, the Continent was projected to have the major impacts of COVID-19 due to earlier experiences of Ebola (Moore, Gelfed, & Adeyemi Okunodge, 2017). However, with regards to mortality and morbidity, Africa has seen significantly lower rates compared to other continents.

On 12th March, 2020, the first case of COVID-19 was detected in Ghana with an increase of approximately 200% on the second day. As at 21st March, as many as 21 individuals had contracted the disease and 1 death in the country. By 15th May, 2020, confirmed cases in Ghana were 5, 530 and the number of deaths was 24 (UNICEF, 2020). Ghana's confirmed cases between 13th January to 22nd September 2020 were 46, 004 with 297 deaths (WHO, 2020). According to reports from the Ghana Health Service (2020) as at 23rd September 2020,

confirmed cases were 46, 116 whiles 297 persons lost their lives. Further, the region with the highest confirmed cases in Ghana was Greater-Accra (23, 469), followed by Ashanti (10, 954). Central Region was ranked 5th with total confirmed cases of 1, 921. North East Region recorded the least confirmed cases (19). Analysis of confirmed cases in Ghana revealed that the disease saw its peak in July 2020. Since then there has been a downward trend for the condition.

The high rates of morbidity and mortality associated with the condition have adversely affected the physiological and emotional wellbeing of persons all over the world (Fiorillo & Gorwood, 2020; Mahase, 2020). Several studies have projected that because the disease is highly contagious, the uncertainties and fear of contracting it may affect people's psychological wellbeing (Zandifar & Badrfam, 2020; Wang *et al*., 2020). Likewise, suggestions have indicated that as a result of COVID-19 over 23 million individuals in Sub Saharan Africa (SSA) will be living in extreme poverty in 2020 (Mahler, Lakner, Aguilar, & Wu, 2020). Bukari *et al*. (2020) found that COVID-19 has affected the economy of Ghana and had adversely decreased the already marginal living standards of some Ghanaians. From observations, it seems that COVID-19 has adversely affected nearly every aspect of human life.

One of the most exposed groups during pandemics and epidemics are health professionals and the most affected sector is the health care sector (Rodriguez & Sanchez, 2020). Braquehais, *et al*. (2020) emphasized that the outbreak of COVID-19 has further worsened healthcare in western countries which was already faced with decreased human and material resources to meet the health needs of people. Studies have revealed that Sub-Sahara African economic strength and medical resources will not be able to cater for the high

demands of COVID-19. Additionally, the capacity to detect, and control the novel disease varies among countries (Skrip *et al*., 2020; Gilbert *et al*., 2020).

According to Alegbeleye and Mohammed (2020), multiple challenges such as inadequate medical supplies and lack of skilled personnel undermines the ability of countries in Africa to regulate the rapid spread of coronavirus. Similarly, many have questioned the preparedness of Ghana's health sector to control the impact of COVID-19. Kugbey, Ohene-Oti, and Vanderpuye (2020) revealed that Ghana lacks the number of skilled health professionals to match the population. Also, Afulani, Gyamerah, Aborigo, Nutor, Malechi, Laar, & Awoonor-Williams (2020) lamented that the already constrained health system and overburdened health infrastructure in Ghana presents a challenge to slow the spread of COVID-19. Based on these findings, it seems that the pandemic has stressed the already overburdened healthcare system in Africa particularly, Ghana.

Studies have found that health professionals are among the most vulnerable group to be infected during the outbreak of COVID-19 due to their essential role in fighting the disease (Koh, 2020; Lin *et al*., 2020). The WHO (2020) reported in July 2020 that as high as 10, 000 health workers in over 40 nations in Africa had been infected with the novel disease. This incidence was ascribed to a shortage of protective equipment and the absence of quality measure to prevent and control infections. In Ghana, a press release by the Health Workers Union revealed that the burden associated with coronavirus is very substantial and the number of health workers infected with the disease is alarming (Health Workers Union of Ghana, 2020). According to the Director-General of the Ghana Health Service, Dr Kuma-Aboagye, over 2000 health

workers in Ghana were infected with coronavirus as at 16th July 2020. The report further indicated that 6 of the health professionals had lost their lives (Tarlue, 2020). It could therefore be asserted that the high number of infected health professionals will lead to increased levels of health anxiety among other health professionals.

Consistent with this assertion, previous studies established that health professionals experienced serious psychological distresses due to work-related stress, increased workload, stigma from society and family throughout the outbreak of the Severe Acute Respiratory Syndrome (SARS) in 2002 to 2004 (Brug, Aro, Oenema, De Zewart, Richardus & Bishop, 2004; Chan & Hauk, 2004). Similarly, other reports suggested that health workers experienced extreme stress associated with the fear of the possible infection, stigma from family and society, uncertainties during similar pandemic and epidemics (Lee, Kang, Cho, Kim, & Park, 2018; Maunder *et al*., 2003). Hammen (2018) observed that health professionals are disturbed by fear of infection and likelihood of infecting their family members while they provide services to patients. The heightened level of health anxiety adversely impacts the wellbeing and performance of such health professionals. In Ghana, Ofori, Osarfo, Adgeno, Manu and Amoah (2021) discovered that like the rest of the world, the COVID-19 pandemic has impacted the psychological well being of health professionals. Similarly, Adom, Mensah, and Osei (2021) reported that health workers in Ghana were subject to significant stigma and discrimination during the current COVID-19 pandemic.

Recent studies have established that COVID-19 is linked with high levels of stress, depression and anxiety among the general population (Wang *et*

al., 2020; Zhu, Chen, Ji, Xi, Fang, & Li, 2020). In China, Liu *et al*. (2020) found that health workers' challenges related to caring for COVID-19 patients in wards include fatigue. This is as a result of heavy workload and schedule, use of new protective equipment, fear of infection of self and others. Also, inability to handle the needs of COVID-19 patients and maintaining positive relationships with patients were additional challenges. These challenges were related to extreme levels of mental distresses among health workers. Lai, Ma, Wang, Cai, Wei, & Tan (2020) found that healthcare workers particularly, women, nurses, and those directly caring for COVID-19 patients in China experienced depression, anxiety, insomnia, and a significant level of distress. Similarly, Temsah, Al-Sohime, Alamro, Al-Eyadhy, Al-Hasan, Jamal, & Al-Subaie (2020) observed that just like other pandemics, COVID-19 imposes a high amount of stress and anxiety on health professionals due to fear of possible infection and spreading the disease to their families and friends.

Coping with stress and anxiety is very essential and determines the exact influence of these psychological distresses on humans' health. Folkman and Lazarus (1988) revealed that positive coping strategies lead to better psychological responses. Si, Su, Jiang, Wang, Gu, Ma, & Qiao (2020) assessed the psychological impact of coronavirus on health workers and coping strategies. Results indicated that the predominance of adverse emotional disorders (stress, hopelessness, anxiety and PTSD) among participants were significantly high. It was observed that maladaptive coping strategies and lack of social support significantly contributed to the psychological outcomes among health professionals. Savitsky, Findling. Ereli and Hendel (2020) reported that anxiety scores among nursing students increased owing to intensified level of

fear of infection with COVID-19. In the study, positive coping strategies serve as buffers to anxiety. It has also been shown that negative coping styles are predictors of mental health problems (Meli, Birk, Edmondson, & Bonanno, 2020).

The preceding discussions highlighted the fact that health professionals are most at risk of COVID-19 infection due to their proximate working relationship with infected patients. Similarly, the increased demand for healthcare during the pandemic connotes that health professionals have to work long hours and adapt to the changes and challenges associated with the condition. Additionally, health professionals have fears of possible infection with coronavirus and further transmitting the disease to loved ones. These challenges and the burden of the disease contribute to significant psychological distresses (anxiety, depression, stress and PTSD) among health professionals. Exploring the psychological impact of COVID-19 and the coping strategies adopted by healthcare professionals in some healthcare facilities in the Cape Coast Metropolis can help in the development of appropriate interventions and treatment for health professionals to improve their psychological wellbeing. It seems that the attention of the Ministry of Health and stakeholders has been channeled towards ensuring the physical safety of health professionals by ensuring the availability of adequate protective equipment. According to Karlson and Fraenkel (2020), protective equipment such as "protective suits, isolation gowns, gloves, face shields or goggles, hair covers, boots, and shoe covers as well as N95 respirators or surgical masks" are relevant (p.1). Nonetheless, little efforts have been committed to ensuring the psychological wellbeing of these professionals. This study examined the experiences of health

anxiety and stress as well as the means of coping among health professionals during the current Covid-19 pandemic in the Cape Coast Metropolis.

Statement of the Problem

Infectious disease such as COVID-19 is linked with a higher prevalence of morbidity and mortality worldwide (WHO, 2020). The disease has caused significant social, economic and health crises (Wasim, Raana, Bushra & Riaz, 2020). Compared with the general population, health professionals are highly susceptible to this infectious disease due to their essential role as health providers (Ornell, Schuch, Sordi, & Kessler, 2020). Given the urgency of the pandemic, health professionals are required to adjust to new work schedule, long hours of work and heavy workload in a resource depleted environment (Pappa, Ntella, Giannakas, Giannakoulis, Papoutsi, & Katsaounou, 2020). Additionally, the growing number of discovered cases among the general population and health workers, lack of adequate protective equipment, lack of medication and support are significant predictors of occupational burnout among health workers (Neto *et al.*, 2020).

Likewise, empirical studies have established that during the outbreak of the SARS (between 2002 and 2004) many health professionals considered resignation due to the challenges that they were extremely stigmatized and feared spreading and infecting their family and friends. These challenges were connected with significant levels of psychological distresses (Lee *et al.*, 2007; Brug *et al.*, 2004; Chan & Hauk, 2004). Also, Wu *et al.* (2009) found that healthcare workers are at higher risk of mental disorders namely fear, anxiety, depression, and sleep disorder. According to Temsah *et al.* (2020), the coronavirus pandemic has surged the levels of stress among health professionals

and this has raised concerns that the psychological impact of the disease is on the ascendancy. These empirical discoveries insinuate a pressing demand to develop interventions to enhance the mental health of healthcare professionals.

Wasim, Raana, Bushra and Riaz (2020) revealed that though physical wellbeing of health professionals (provision of personal protective equipment, adequate training to prevent infections, and other safety measures) have been taken care of by the health sectors in many countries, the mental health needs of health professionals have received little or less attention in many countries. Wasim and colleagues found health professionals experienced a severe level of anxiety, insomnia, stress, and depression. Moreover, psychological disturbances among healthcare workers could lead to attention deficit, impairment in cognitive function, and impairment in clinical decision-making (Wasim et al, 2020). The presence of such impairment will mostly affect the performance of health professionals and could lead to serious medical mistakes and adverse events and eventually put innocent patients at risks of death or irreversible medical harm. Chang, Xu, Rebaza, Sharma, and Cruz (2020) established that for optimum delivery of quality health care to the populace, the wellbeing and mental health of healthcare professionals are important to consider. Without adequate measures and interventions, the impact of coronavirus will have deliberating and enduring consequences on health professionals. It seems that empirical studies assessing the psychological impact of COVID-19 on health workers are limited in Ghana, especially in the Central Region. Whiles few studies have been conducted on the psychological impact of COVID-19 pandemic in Ghana, only a hand full have been dedicated to the psychological wellbeing of healthcare professionals who serve as the frontline

workers (Afulani et al., 2022; Swaray et al., 2021; Ofori, Osarfo, Agbeno, Man, & Amoah, 2021, Oti-Boadi, Malm, Dey, & Oppong, 2021).

Ghana has been commended by international bodies on her drastic measures in the fight against the pandemic. Nonetheless, the virus has had a significant impact on the country. With over 2000 health professionals infected and the majority in fear of contracting the disease (Tarlue, 2020), there is a crucial requisite to wholly measure the Health Anxiety and Stress levels of health workers during the current Covid-19 for informed decision making and interventions to enhance their physical, mental and social wellbeing. (Afulani et al., 2022; Ofori, Osarfo, Agbeno, Man, & Amoah, 2021, WHO, 2020).It is against this sordid background that this research investigated health anxiety and stress as well as ways of coping among health professionals during the current Covid-19 pandemic.

Purpose of the Study

This research investigated Health Anxiety, Stress and Coping during the Covid-19 pandemic among healthcare professionals in selected Hospitals in the Cape Coast Metropolis. Specifically, the study addressed the following objectives:

1. Examine the level of Health Anxiety among healthcare professionals during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.
2. Examine the level of Stress of Healthcare professionals during Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.

3. Identify the coping strategies adopted by healthcare professionals to mitigate the effects of COVID-19 on their Health Anxiety and Stress levels in selected hospitals in the Cape Coast Metropolis.
4. Determine the difference among healthcare professional (medical doctors, Physician Assistants Nurses) in terms of Health Anxiety and Stress during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.
5. Examine the relationship between Health Anxiety and Stress among Healthcare professionals regarding the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis
6. Identify the relationship between Coping Strategies and Health Anxiety levels among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
7. Determine a positive relationship between Coping Strategies and Stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
8. Identify the difference among male and female healthcare professionals in terms of Health Anxiety and Stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
9. Ascertain the difference among age category in terms of Coping Strategies among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

Research Questions

1. What is the level of health anxiety among healthcare professionals during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis?
2. What is the level of stress encountered by healthcare professionals during the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis?
3. What coping strategies are used by healthcare professionals to mitigate the effects of health anxiety and stress in their COVID-19 related responsibilities in the Cape Coast Metropolis?

Research Hypotheses

1. Ho1: There is no significant difference among healthcare professionals (Medical Doctors, Physician Assistants, and Nurses) in terms of health anxiety and stress regarding the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis.

   H_A1 There is a significant difference among healthcare professionals (Medical Doctors, Physician Assistants, and Nurses) in terms of health anxiety and stress regarding the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis.
2. Ho2: There is no significant positive relationship between health anxiety and stress levels among healthcare professionals regarding the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis.

   H_A2: There is a significant positive relationship between health anxiety and stress among health professionals in selected hospitals in the Cape Coast Metropolis.

3. Ho3: There is no significant positive relationship between coping strategies and health anxiety levels among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

   H_A3: There is a significant positive relationship between coping strategies and health anxiety levels among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

4. Ho4: There is no positive relationship between coping strategies and stress among healthcare professionals in the Cape Coast Metropolis.

   H_A4: There is a positive relationship between coping strategies and stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

5. Ho5: There is no significant difference among male and female health professionals in terms of health anxiety and stress in selected hospitals in the Cape Coast Metropolis.

6. H_A5: There is a significant difference among male and female health professionals in terms of health anxiety and stress in selected hospitals in the Cape Coast Metropolis.

7. Ho6: There is no significant difference among age category of health professionals in terms of coping strategies in selected hospitals in the Cape Coast Metropolis.

   H_A6: There is a significant difference among age category of health professionals in terms of coping strategies in selected hospitals in the Cape Coast Metropolis.

Significance of the Study

This study is relevant in countless ways. First, the study's findings will provide insight into the impact of COVID-19 on the psychological wellbeing of health professionals involved in the care of patients with COVID-19. The knowledge would pilot stakeholders in healthcare settings such as the Ghana Association of Quasi Government Health Institutions, the Ministry of Health, Ghana Health Service and Mental Health Advocates to plan and execute quality measures to assist health professionals to overcome mental health challenges and subsequent disorders associated with this novel condition. Health professionals in the Cape Coast Metropolis may consider the impact of health anxiety and stress on their psychological wellbeing during this pandemic.

To ensure that health professionals execute their duties appropriately during this period, employers and stakeholders may be obliged to provide adequate support. The findings would also identify the coping strategies adopted by health professionals during experiences of psychological distresses due to COVID-19. Armed with this knowledge, appropriate support that meets the psychological or mental health needs of health workers can be designed in line with their coping strategies.

Lastly, it will add to the bulk of research concerned with the impact of COVID-19 on the psychological health of healthcare professionals. Researchers could fall on this research work as reference material for future studies.

Delimitation

The study was delimited to Medical Officers, Physician Assistants and Nurses working in the Cape Coast Teaching Hospital and the University of Cape Coast Hospital. Respondents were health professionals who were at post during

the start of the Coronavirus pandemic in Ghana and have not proceeded to leave or vacation. Health professionals who were on leave or vacation during the onset of the pandemic in Ghana were exempted from the study since they have not been at post at a certain time since the start of the pandemic, they may not have experienced any psychological impact and may not have been stressed or adopted any coping strategies during their absence.

Again, the research strictly focused on psychological variables such as health anxiety, stress and coping strategies among healthcare workers during this COVID-19 period.

Limitation

First, all variables under consideration were assessed with self-reported measures, which may result in single-source bias. Additionally, the self-report nature of data collection was also subject to multiple recall biases from participants.

Also, the use of the descriptive survey design imposes a limitation. The descriptive design only describes what happens at the time of data collection and therefore findings cannot be generalized to other areas at a different time interval.

Another limitation of the study was that during the data collection the estimated number of medical officers for the study was had to reach. Out of the proposed 67 medical officers, only 19 were obtained representing a returning rate of 28.4%. In this regard, generalization of the findings of the study very limited.

Definition of Terms

1. **Health Anxiety:** An extensively worrying and apprehensive feeling associated with the imagination that an individual is infected with a serious medical condition. This is mostly due to misinterpretation of bodily symptoms mimicking the disease.
2. **Stress:** The emotional and physical feeling of tension as a result of a challenge or adverse events which require drastic adjustment to life.
3. **Coping:** A conscious behavioural effort (physical and psychological) adopted by an individual to alleviate life challenges.
4. **Healthcare Professionals:** Health professionals involved in the provision of day to day and continual general medical services to patients for example medical doctors, physician assistants and nurses.
5. **COVID-19:** Coronavirus disease discovered in 2019.
6. **Pandemic:** The outbreak of a disease that spreads to almost all countries in the world.

Organization of the Study

This study was structured into five chapters. Chapter one which is the introduction includes background to the study, statement of the problem, purpose of the study, research objectives, questions and hypotheses. Other sub-topics include the significance of the study, delimitation, limitation, and definition of terms, and the organization of the study.

In chapter two, the focus was on literature review. This chapter was organized systematically under the following subheadings: theoretical framework, conceptual review and framework as well as empirical review.

Chapter three discussed the scientific research methods used in this study. In this chapter, the discussion includes the research design, study area, population, and sampling procedure. The chapter also includes the data collection instrument, ethical consideration, data collection procedure and data processing and analysis.

The fourth chapter covered the presentation of results in tables and the discussion of the key findings of the study. The findings were presented and discussed related to previous empirical studies.

Lastly, chapter five provided the summary, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This research investigated Health Anxiety, Stress and Coping among health professionals during the Covid-19 pandemic in Cape Coast Metropolis. The study reviewed literature related to the variables under study. The review was done under three distinct sections, namely theoretical framework, conceptual review and framework, as well as empirical review. Each sub-dimension of the chapter was reviewed from the views of other scholars and writers and finally, the relationships between the variables were established. The theoretical framework provides the tentative hypothetical assumption to explain the extent to which the variables are related. Lastly, a chapter summary is provided.

Theoretical Framework

The main theoretical underpinnings of the study are the

i. Transactional Theory of Stress
ii. The Cognitive Activation Theory
iii. The Cognitive-Behaviour of Health anxiety.

Transactional theory of stress and coping (Lazarus and Folkman, 1984)

Known as the putative founders of the Transactional Theory of Stress and Coping (Biggs, Brough & Drummond, 2017), Lazarus and Folkman were inspired by several ideas and personalities in crafting the model. As opined by Dillard (2019), ideas and concepts from early Aristotelian treatises within

ancient Greece whose works were reexamined by two generations of social, personality and clinical psychologists had a greater bearing on the works of Lazarus (2012). Lazarus and Folkman's (1984) theory is perceived by scholars as one of the key pillars of psychological stress and coping literature (Biggs *et al*., 2017)

The model suggests that humans experience stress through a series of structure known as appraisal, response and adaptation. Glanz, Rimer and Viswanath (2015) posit that the transactional model of stress and coping helps to assess how individuals handle taxing incidents in life and thus the major principles of the model are *"primary appraisal, secondary appraisal, coping efforts, results of coping, and dispositional coping styles"*. According to the theory, individuals undertake an appraisal of a stressor and go through stages before responding to the stressor at hand. As opined by Velichkovsky (2009), the transactional model of stress goes through stages. The first stage involves the individual's disposition, the environmental factors and the stressor at hand. The second stage of the theory is the cognitive appraisal when the individual evaluates coping strategies and the stressors at hand. The third stage entails reactions of the individual to the stressor and the last stage is the stress outcomes.

The transactional model of stress propounds that an individual undertakes an appraisal of a situation before responding to a stressor. The first appraisal is known as the primary appraisal. At this stage, the individual evaluates the extent to which the situation at hand is demanding (Crum, Akinola, Martin & Fath, 2017). Primary appraisal ensures that individuals recognize and assess danger and then proceed to have a plan to curtail the

problem. The possibility of either a gain or harm is assessed at the primary appraisal stage. After the assessment, the individual decides whether the situation at hand is relevant. The relevance here can mean positive or negative and this is where secondary appraisals are made. A secondary appraisal based on the Transactional theory of stress requires individuals to evaluate the resources at hand vital to cope with the stressor at hand (Crum *et al*., 2017). After the secondary appraisal, the theory suggests that if individuals perceive that they do not have the ability and resources to cope with the stressor, negative stress experiences set in and this requires the individual to develop coping strategies.

According to Hudson (2016), Coping encompasses initial appraisal of an event whether it's a threat or has the potential to harm one's wellbeing. In coping with stressors, the model suggests that individuals can either opt for an emotion-focused coping style or problem-focused coping strategy. The problem-focused coping strategies according to Esia-Donkoh, Yelkpieri, and Esia-Donkoh (2011) seek to find solutions to the problem at hand or alter the main source of the stress. Problem-focused coping strategy deals directly with the problem. The emotion-focused coping strategy seeks to manage the emotional distress from the event or stressor at hand (Schoenmakers, Tilburg, & Kokkema, 2015). Examples of emotion-focused coping strategy are denial and avoidance.

It is imperative to note that a person's response to stress and coping changes. In the quest to cope with a particular stressor, individuals tend to make re-appraisal of the event. The individuals begin again from primary appraisal and assess the whole events. Reappraisals influence individuals response to the

situation and this goes a long way to influence the individual in reappraising the whole events within the process of coping. This makes the whole system transactional. In the face of current COVID-19 Pandemic globally, health professionals who are the frontlines of making sure to curb this disease, tends to face stress. Working for long hours, witnessing increased deaths of patients and the probability of contracting this disease from patients compounds the stresses faced by health professionals. Therefore in the quest to examine the stress faced by healthcare professionals and their coping strategy, the transactional theory of stress has been carefully selected as part of the theoretical underpinnings of this work. Though critics of the model point to heavy reliance on subjective interpretations of an event as the major flaw of the theory, the transactional theory of stress and coping provides a structure for testing a predictive model in traumatic stress literature (Dillard (2019). This framework has over the years helped scholars and has served as the basis for most stress research works.

Cognitive Activation Theory of Stress (CAT) (Ursin & Eriksen, 2004)

The Cognitive Activation Theory of Stress birthed through the works of Ursin and Eriksen (2004) provides a systematic analysis of the relationships between how humans and animals handle challenges. According to Reme, Ericksen, and Ursin (2008), the cognitive activation theory of stress provides psychobiological details for the supposed associations between health and events known as stress. The cognitive activation theory of stress is a cognitive theory because both physiological and psychological outcomes rest heavily on one's cognitive assessment of a situation and it requires how one will act towards the situation. Moreover, the cognitive activation theory of stress is an

activation theory because the psychobiological consequences of cognitive activities are clarified by the rise in arousal (activation) (Reme *et al*.,).

According to Meurs and Perrewé (2011), the cognitive activation theory of stress posits that stress alarm takes place when there is a difference between what one desires and the reality at hand. Individuals usually connect with the probability of eliminating the alarm and the source. The expectation of individuals has a bearing on the level of arousal. The cognitive activation theory reveals that if an individual has control and is in expectation of the desired outcome, then there will be no activation of any alarm, i.e. there will be no feeling of stress. On the other hand, when an individual faces an unpredictable future or any uncertainty and at the same time lacks the necessary resources to cope with situations or events, the alarm then is activated. As opined by Ursin & Eriksen (2004), the stress response is a vital and necessary physiological response. The distastefulness of the alarm is by no means a health risk, nevertheless, if it persists, the response will ultimately create diseases.

Stimulus expectancies can either be positive or negative or sometimes, hinges on a dearth of data. Any alarm response founded on expectations might be stifled by emotional defense mechanisms. The Cognitive Activation Theory of Stress also defines such a situation as "distortions of stimulus expectancies". Response outcome expectancies based on the Cognitive Activation Theory of Stress can be positive, negative, or none, to the available responses and according to Ursin & Eriksen (2004), these stress outcomes provides the systematic and formal meaning of helplessness, hopelessness and coping which are some of the situations that can be seen in the lives of humans and animals.

In general, the Cognitive Activation Theory of Stress is a major expansion of activation theory and general arousal from neurophysiology. The theory makes it clear that response is essential for performance whenever an individual faces a potential stressor. Moreover, responses are vital for our day to day dealings with problems. The theory was selected as a major theoretical underpinning of this study because it helps provide meaning into the expectancies of healthcare professionals and the realities they are facing during this COVID-19 pandemic and how the demands from this situation create responses from them and how best they are coping.

Cognitive-Behavioural Theory of Health Anxiety (Hadjistavropoulos, Craig & Hadjistavropoulos, 1998)

The cognitive-behavioural theory of health anxiety designed through the works of Hadjistavropoulos, Craig and Hadjistavropoulos (1998) helps reveal general responses in health anxious persons when they are unprotected from health-related challenges or issues. According to Hadjistavropoulos, Craig and Hadjistavropoulos, cognitive variables are major determinants of health anxiety. For instance, cognitive variables such as the belief that somatic sensations usually indicate severe disease are the major determinants of health anxiety.

Accordingly, the theory argues that in situations where dysfunctional health beliefs are triggered by dire events such as somatic sensations, health anxiety follows. Health anxiety is mainly caused by the obsession with acquiring a serious illness and this causes a high level of health anxiety. The cognitive-behavioural theory of health anxiety suggests that sustaining and exacerbating of problems are as a result of distinctive cognitive and behavioural processes. The theory reveals that health anxiety is often linked with an attention

bias to check the presence of symptoms of an illness. Individuals with health anxiety will partake in several health-related exercises and attitudes such as examining their body for any symptoms of a disease or infection. With this theory, individuals often give an attention bias in the quest to notice symptoms of an illness and then cognitive bias is employed to misinterpret information of the alleged symptoms felt in a catastrophic manner.

In summary, the Cognitive Behavioural Model of Health Anxiety shows how biased attention is given to body symptoms and interpreted as threatening results leading to emotional and physiological feelings of anxiety. This theory was chosen as part of the theoretical underpinnings of the study as it reveals how healthcare professionals who are in the battle against COVID19 pandemic are emotionally and psychologically stressed with the feeling of acquiring the disease in the delivery of their duties at the hospital.

Conceptual Review

This section presents review of literature on the variables in the study namely: coronavirus (COVID-19), health anxiety, stress and coping. The definition of terms, explanation of concepts, and the evidence for literature has been presented as they pertain to the objective of the study.

Coronavirus (COVID-19)

According to the World Health Organization (2020), Coronaviruses are a group of viruses, which belong to the family of Coronaviridae. This virus infects both animals and humans and it's deadly. Coronaviruses in human can create diseases such as Severe Acute Respiratory Syndrome. In December 2019, the World Health Organization identified a new coronavirus, which emerged from Wuhan, China, which is now popularly known as COVID-19 (Holshue *et*

al., 2020). COVID-19 is a respiratory illness and those infected experience symptoms such as headache, muscle pains, sore throats, diarrhoea, loss of smell and loss of taste.

According to the World Health Organization report, globally, 55,064,128 individuals have contracted the virus with confirmed death cases of 1,328,015. This staggering figure explains why COVID-19 disease is deadly and has been classified as a pandemic. The rate at which it spread led to the closure of borders in most countries and the imposition of quarantines within countries and political boundaries to limit the spread of the disease. It was evident that the period between May to August saw a decrease in infected people, however, there has been a resurgent of the disease which has been termed the second wave of the COVID pandemic.

The government of Ghana since the beginning of the COVID-19 pandemic has introduced several measures to curtail the spread and also to limit the importation of the disease into the country. Borders were closed, quarantines were called with several restrictions of social gatherings all in the name of controlling the disease. Several bodies were called to help control the COVID-19 pandemic especially, health care professionals. Their roles within this pandemic have been good. As frontline workers, leading the war against this pandemic, a lot of incentives have been given to them; however, there has been a seeming lack of support in the psychological wellbeing of health workers. How they control the psychological burden associated with the condition is very much unknown. With the burden of attending to patients, health care professionals are highly at risk of contracting the COVID-19 disease. It is from this background that this research examined the health anxiety and the level of

stress of these healthcare professionals and the coping mechanisms they employed during this pandemic.

Health Anxiety

The discovery and spread of the contagious COVID-19 have taken a significant strain on the health system and health professionals. Beside interests for their welfare, health care personnel are scared of infecting their closest relatives. Whereas some level of fear is vital for our survival, excessive fear has harmful effects and can end in mental disorders such as phobia and social anxiety (Olatunji, Etzel, Tomarken, Ciesielskl &, Deacon, 2011). Mertsens, Gerritsen, Dunidam, Salemink, and Engelhard (2020) opined that the level of anxiety among the people has substantially increased as compared to studies conducted before the onset of the pandemic. Tyrer (2020) asserted that as the pandemic dominates every news and social media platforms, health anxiety has become necessary to consider.

Health anxiety is also known as illness anxiety and was formally called hypochondria. Tyrer (2018) indicated that health anxiety is similar to hypochondriasis but is characterized by the fear of illness instead of the conviction that one has acquired an illness. According to Hart and Björgvinsson (2010), the difficulty in the diagnosis of hypochondriasis led to recent use of the term *health anxiety*. Abramowitz, Deacon, and Valentiner, (2007) described health anxiety as "the tendency to misinterpret normal or benign physical symptoms and believe that one has or is acquiring a serious illness, in the absence of any actual illness". Health anxiety is also similar to a novel diagnosis called illness anxiety disorder in According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, also known as DSM-5 (American

Psychiatric Association 2013). Some risk factors include a time of major life stress, the threat of serious illness such as epidemic or pandemic, history of abuse as a child, and personality traits (Te Poel, Baumgartner, Hartmann, & Tanis, 2016). Individuals with neurotic health anxiety have an extreme apprehension of acquiring a disease. During the outbreak of the Swine flu and Zika virus pandemic, findings showed that fear of contracting this deadly disease was associated with more health anxiety (Wheaton, Abramowitz, Berman, Fabricant, & Olatunji, 2012; Blakey & Abramowitz, 2017). According to Hogan (2010), individuals who experience health anxiety exhibit several symptoms and behaviours such as:

Physical Symptoms: People experiencing health anxiety can exhibit some form of physical symptoms such as general aches, headaches, and numbness and chest pains. Individuals experiencing health anxiety tend to develop such physical symptoms.

Interpreting body sensations as signifying severe illness: Individuals experiencing health anxiety begin to interpret the physical symptoms experienced as an indication of contracting the feared disease. For instance, as it was widely known that the major symptom of COVID-19 disease was Flu. In light of individuals and health professionals with health, anxiety, will interpret flu-like symptoms experienced as contracting COVID-19 disease.

Physiological arousal: The increased anxiety levels within these victims and the heightened perception of threats through the interpreting of the physical symptoms experienced create Physiological arousal of anxiety. Here, the individual experiences an increase heart rate, trembling among others.

Increased focus on the body: Persons with health anxiety devote a lot of time concentrating on and checking their body for physical symptoms. They monitor to check for changes within the body.

Reassurance-seeking from Experts and doctors: With the fear that their health is in danger, individuals experiencing health anxiety seek counselling and medical consultations from doctors with the hope that these experts will allay their fears. In search times and even with the growing search engines, individuals will search for the symptoms they are experiencing from the internet and will try to seek the opinions of experts online. At this stage, all relevant materials from any source are checked since such individuals explore for information to look for the possibility of the sickness and its symptoms.

Avoiding things to do with illness: At this stage, individuals with health anxiety tend to stop following any programme or watch any media content that will mention the disease they fear. Newspapers, magazines and televisions that mention anything related to the illness are avoided. Here, the individual intentionally stops talking about the feared illness.

Other avoidant behaviours: Individuals with health anxiety at this stage cease to engage in any activity such as sports and exercises with the fear of putting their lives at risk. Once any symptoms are noticed, the individual either goes to bed or avoids people.

In summary, health care workers with health anxiety within the period of the COVID-19 will experience some of the aforementioned behaviours. Mertens, Gerristsen, Duindam, Salemink and Engelhard (2020) found that increased fear for COVID-19 is associated to health anxiety. Given that health

professionals are more susceptible to coronavirus infection, it is hypothesized these professionals will experience a significant level of health anxiety.

Stress

Stress is a multidimensional concept and occurs when our physical and psychological strength cannot handle threats from the environment (Kakunje, 2011). According to Selye (1973), Stress refers to "the bodily processes that result from circumstances that place physical or psychological demands on an individual". In its basic terms, stress refers to the body's reaction to change that needs response. The body in the face of any adjustment reacts with emotional, physical and mental responses. Ismail *et al*. (2010) established that stress may be divided into positive (good stress or eustress) and negative stress (distress). Whiles eustress aid in higher performance of activity, distress decreases the motivation to engage in quality work and is associated with health problems (Nakao, 2010). According to Seiler *et al*. (2020), over the past three decades studies have proved beyond doubt that stress has a huge impact on clinically important immune system outcomes. These according to the scholar include inflammatory processes, vaccination, and wound healing among others. It is evident that stress is needed to a certain point which helps boost one's performance; however, excessive stress is harmful. Lastly, it is imperative to note that stress is a state and should not be classified as illness (Moustaka & Constantinidis, 2010).

A bird view into existing literature will reveal the numerous types of stress pointed out by scholars. For instance, according to Bhowmik, Vel, Rajalakshmi, and Kumar (2014), there are three kinds of stress. They are: routine stress, stress caused by variation and traumatic stress. According to the

researcher, routine stresses are the types of stress, which are usually connected to the daily pressures, and demands of work. These types of stress are brought about through our daily responsibilities. The second type of stress according to Bhowmik *et al*. (2014) is the type of stress that occurs due to a sudden negative change in the life of an individual. Example of such negative changes includes losing one's job, illness, sickness or divorce. The last type of stress revealed by the researchers is traumatic stress. According to them, traumatic stress occurs when an individual is in danger of being hurt or killed. War, fatal accidents, natural disasters and assaults are some of the events that lead to traumatic stress. Traumatic stress has a tendency to cause Post-Traumatic Stress Disorder (PTSD).

On the other hand, Agarwal and Malhotra (2019) in their quest to research into the stress within the workplace pointed out three forms of stress namely; Acute Stress, Episodic Acute Stress and Chronic Stress. These kinds of stress provide a clear understanding of the specific nature of stress that healthcare providers can encounter as a results of the COVID-19 pandemic. Thus, during this pandemic, healthcare providers' experiences of stress may range from an acute stress which lasts briefly, to chronic stress which demands continuous psychological intervention and plan.

Acute stress: According to the researchers, acute stresses are brief. They are the type of stress that is usually common and frequent in the lives of individuals. Reactive thinking usually causes this type of stress. This type of stress usually calls for an immediate response from the body to a new challenge. Acute stress can be caused by negative thoughts that occur in a particular situation. Usually, overthinking and worry leads to such stress. Some effects of

acute stress are; depression, neck pain, muscular tensions, sweaty palms, sleep problems, cold hands and feet. Acute stress is not always negative.

Episodic Acute Stress: The experience of acute stress over and over again leads to episodic acute stress. It's a repetitive form of acute stress and this can be as a result of facing several stressful challenges. Individuals with episodic acute stress usually live a life full of tension. They are continuously under pressure to act. Individuals experiencing episodic stress disorder usually have a negative outlook on every sphere of their lives and they tend to worry over petty issues. Victims of episodic acute stress embrace stress as part of their lifestyle and they find it hard to change. Some effects of episodic stress disorder are anxiety, compromised attention, high blood pressure and heart palpitation.

Chronic Stress: Prolonged acute stress leads to chronic stress. Chronic stress does not easily go. Chronic stress encompasses heavy pressures and demands with no hope of any solution to the problem. Chronic stress has a negative effect on peoples' wellbeing. Individuals suffering from chronic stress are predisposed to heart attacks and other mental and physical health issues. On top of the list stated above, an article by Wallace (2020), on types of stress added three types of stress that are also common in the lives of individuals. These are:

Psychological Stress: This type of stress deals with both emotional and cognitive stress. According to Wallace (2020), Psychological stress usually triggers panic attacks, anxiety, self-criticism, jealousy, sadness, anger, attachments, Sadness, fear and frustration.

Psychosocial stress: Psychosocial stress is the type of stressed experienced by individuals facing challenges and turmoil in the relationship with others especially, people facing marriage problems. The forms of

relationship that can cause such stress are relationship with family members, spouse, employer and employee. Psychosocial stress can lead to isolation. The loss of employment, loss of a loved one and lack of social support can lead to this type of stress.

Physical stress: Physical stress can occur from major harm to the body. Individuals who experience trauma due to injury are said to be facing this type of stress. Moreover, with regards to the types of stress, Colligan & Higgins (2006) states that stress can be divided into two categories: Distress and Eustress. Distress is known as negative or bad stress whiles Eustress is perceived as positive or good stress. As revealed earlier, individuals especially at workplace need some form of stress to boost their performance and this type of stress is known as Eustress. On the other hand, any form of stress that brings negative or bad reactions and which sometimes lead to depression is known as distress.

Stress at any moment can affect individuals at all levels of life. Stress can affect individuals physically, emotionally, socially, spiritually and cognitively. Usually, individuals experience some form of headaches as signs of stress. Through stress, individuals may find their memories been affected and this sometimes translates into the concentration of the individual. The feeling of hopelessness, having disturbing memories, dizziness, numbness and nervousness are all negative effects of stress when not properly managed.

The foregoing makes it clear that stress may create negative consequences in the life of individuals, likewise, Stress among health professionals may lead to negative consequences on their lives and may extend to the quality of care they provide for patients (Demir, Ay, Erbas, Ozdii, &

Yasar, 2007). Earlier researches, throughout past epidemics (SARS and MERS), health care personnel recounted significant stress levels (Tam, Pang, Lam, and Chiu, 2004; Lee, Kang, Cho, Kim, and Park, 2018). The effect of this crisis on health personnel might surge their stress and this could be connected with other disorders like anxiety and depression (Liu *et al.*, 2012). With an increasing demand for healthcare, health professionals are required to work long hours and are deprived of the required resources to work effectively. Based on these findings the study will explore stress among health professionals during this COIVD-19 pandemic.

Coping

Coping is a usual dominant extenuating feature in models of health, fear, and pain (Salkovskis, Rimes, Warwick, & Clark, 2002). Folkman and Lazarus (1985) revealed that coping strategies are the "behavioural and cognitive efforts that help to reduce the pressure of stressful events and are available (mental) resources to mitigate potential threat". Coping strategies are the behaviours and thoughts used to regulate the exterior and inner demands of situations that are regarded as stressful. Folkman and Lazarus (1980) defined coping as the behavioural and cognitive exertions made to accommodate or lessen the internal or outward pressures and conflicts. According to these researchers, there are two ways of coping, namely: Emotional Coping Strategy and Problem-focused strategy, which have been explained above. Coping is a basic process fundamental to survival and adaptation. Coping helps individuals identify, assess, deal and learn from stressful situations. According to Townsend & Wells (2019), coping is the ability to control challenging, threatening and potentially harmful events, which are critical to one's wellbeing. Coping strategies can be

behavioural or cognitive. Cognitive coping strategies encompass the conscious control of one's emotions and thoughts. On the other hand, behavioural coping strategies are verbal and physical activities used to control stress.

Folkman and Moskowitz (2004) also revealed four kinds of coping strategies i.e.: Positive appraisal, problem-focused strategy, emotion-focused approach and meaning-focused strategy. A positive appraisal is a type of coping strategy where an individual reframes a situation and tries only to see the positive side of the event at hand. This type of coping strategy yields a positive effect on the individuals' health and entire wellbeing. The problem-focused approach is the type of coping strategy that an individual directs all efforts to solve a stressor at hand or finding solutions to a particular problem causing distress. The problem-focused coping approach helps gather resources to solve a problem. It is sometimes known as the task-oriented coping strategy. An emotion-focused coping strategy is that type of coping mechanism where individuals take the step to manage emotional distress. It includes cognitive behaviours such as looking at the positive side and it also has behavioural strategies such as using drugs or seeking emotional support. Lastly, meaning-focused coping strategy as espoused by Folkman and Moskowitz involves looking for meanings into troubles or adversities.

Again, in the face of stressful events, individuals assess their capacity and resources at hand to combat the problem at hand. The perception that available coping resources are enough to help overcome events will keep the threat of those events at a low level. Wong *et al*. (2005) discovered that the everyday coping approaches employed by healthcare workers comprise recognition of the critical condition and use of a positive attitude while working.

For informed decisions and intervention to help health professionals overcome the psychological impact of the pandemic, the study examined the coping strategies used by health professionals.

Conceptual Framework

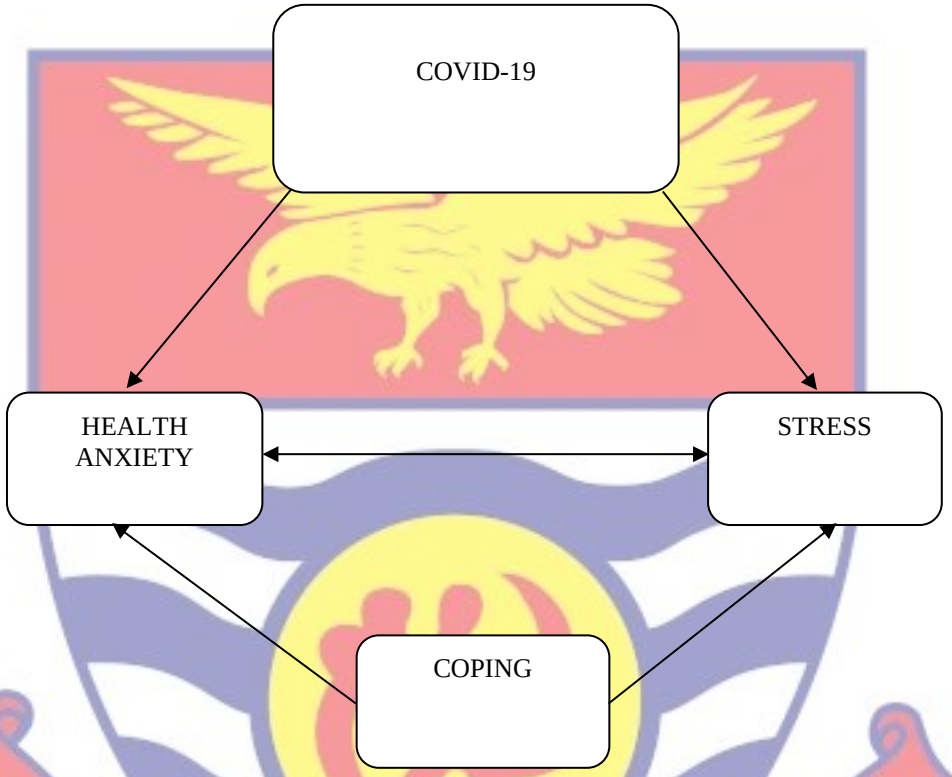

Figure 1: Hypothetical model showing the expected relationships of Health Anxiety, Stress, and Coping Strategies among Health Professionals.

The study investigated health anxiety, stress and ways of coping among health professionals during the current pandemic in the Cape Coast Metropolis. It is expected that the COVID-19 pandemic with its associated pressure within various hospitals will affect the level of health anxiety and stress among health care professionals. Additionally, coping strategies will mitigate the effects of stress and health anxiety.

Empirical Review

The empirical review section considered research findings that help to establish the gap in the study as well as the bases against which the research findings are discussed. The following sub-headings were reviewed: impact of COVID-19 on the level of health anxiety among healthcare professionals, impact of COVID-19 on the level of Stress among health care professionals, relationship between Health Anxiety and Stress among Healthcare Professionals, impact of Coping Strategies on Health Anxiety and Stress among Primary Health Care Professional during COVID-19, as well as impact of Coping Strategies on Stress and Anxiety Levels of Healthcare Professionals. Details of the review are presented in the proceeding pages.

Health anxiety among healthcare professionals during COVID-19 Pandemic

Ofori, Osarfo, Agbeno, Manu, and Amoah, (2021) studied the psychological impact of COVID-19 on health workers in Ghana. The study adopted the multicentre cross-sectional study. A total of 272 participants were recruited to complete DASS-21, Fear of COVID-19 scales and other self-developed scales. According to the results approximately 40% of health workers had significant level of fear, whiles around 9% reported significant level of fear. The authors recounted that the need for a recognition of the psychological effect of the pandemic on health workers is important and that policies are undertaken to address these issues.

In another related study, Oti-Boadi, Malm, Dey, and Oppong (2021) examined psychological distress and coping among university students. The study sampled 209 participants in the online survey, which span between June

and July 2020. According to the results many students scored an above average mean mark for fear of the Coronavirus pandemic. This signifies a significant level of fear among the Coronavirus pandemic.

Khanal, Devkota, Dahal, Paudel, and Joshi (2020), conducted a web-based survey to examine the mental health impacts of the COVID-19 pandemic among health workers. In all, four hundred and seventy-five health workers formed part of the respondents of the study. The researchers employed the Insomnia Severity Index (ISI: 0–28) to measure insomnia and a Hospital Anxiety and Depression Scale (HADS: 0–21). Multivariable logistic regression analysis was used to assess the risk factors of mental health outcomes. The results disclosed that health workers within the pandemic experienced symptoms of anxiety, depression and insomnia. The finding from this study is consistent with the objectives of this study, which sought to assess the impact of COVID-19 on the health anxiety of health care professionals.

Islam, Ferdous, and Potenza (2020) examined panic disorder and generalized anxiety associated with COVID-19 among Bangladesh general population. The descriptive engaged 1311 persons between the ages of 13 and 63 years. Findings showed a high prevalence of panic disorder (79.6%) and generalized anxiety (37.3%) among the participants. Socio-demographic characteristics such as high educational level, being above 30 years (older age), married, and living with a joint family were predictors of panic disorder. These factors including being female, being unemployed by the government also predicted high levels of generalized anxiety. Due to the high prevalence of panic and generalized anxiety, the authors concluded that mental health supportive

services must be provided to people of Bangladesh to enable them to overcome the psychological burden that comes with the condition.

Mertens *et al.* (2020) also explored the factors that predict fear of COVID-19. The online survey engaged 439 participants from the Netherlands. Findings from the study indicated that predictive factors for fear of COVID-19 include health anxiety; excessive media use, social media use, and risks for loved ones were the significant predictors of fear of Coronavirus. The authors established that participants reported various concerns about the COVID-19 pandemic and the result is useful to health workers in the management of patients with health anxiety as a result of the disease outbreak. The study is very useful as it directs our attention to some psychosocial factors that cause panic in people due to the recent outbreak of COVID-19. The review of literature covered relevant current studies addressing related problems. As such the objectives were very clear and unique.

Similarly, Asmundson, Paluszek, Landry, Rachor, Mckay, and Taylor (2020) examined the extent to which having an existing anxiety and mood disorders can influence or affect stress and coping with the COVID-19 pandemic. According to the study, though persons with anxiety-related and mood disorders exhibited higher scores on stress, a variety of factors such as fears about danger and infection, socioeconomic effects, xenophobia, and traumatic stress, its impact on coping strategies were not identified. The study concluded that persons with anxiety and mood disorders are highly affected by COVID-19 pandemic.

It is evident from the works of the above scholars that the period of the COVID-19 pandemic was a stressful period in the lives of health care workers.

The feeling of being scared to contract the disease and also transferring them to their families was a significant source of health anxiety by these workers. The findings revealed by the above scholars is crucial for the study as it provides meaning and ascertains the level of health anxiety experienced by health workers which forms a major objective of this study.

Stress among healthcare professionals during COVID-19 Pandemic

In Ghana, Swaray et al (2020) examined the psychological distress amongst medical laboratory professionals involved in COVID-19 related duties. The study adopted the descriptive survey to select 473 participants from 16 administrative regions in Ghana. The study observed a high tendency of experiencing significant psychological distress amongst medical laboratory involved in COVID-19-related duties. They recommend that observed a high tendency of experiencing significant psychological distress amongst MLP involved in COVID-19-related duties.

Afulani et al (2021) also investigated the psychological impact of the lack of preparedness for response the COVID-19 pandemic in Healthcare workers in Ghana. The study was an online survey which recruited 823 participants to complete the Perceived preparedness scale, stress, and burnout scale. The results showed that healthcare workers who felt somewhat prepared and prepared had lower level of stress those participants who felt very unprepared. The authors concluded that perceived unpreparedness to the COVID-19 pandemic increases the stress and burnout of health care professionals,

Neto *et al. (*2020) explored the mental health of health workers who have direct contact with COVID-19 patients. The study found that work-related stress

of the pandemic is a probable basis of concerns for the health of these professionals. Particularly, participants experienced anxiety, depression, due to heavy workload, countless deaths of patients and fellow health workers, and long work shifts. The findings provide some factors that impose mental health problems on health workers.

Pappa *et al*. (2020) also examined the prevalence of mental distress amid healthcare staffs during the COVID-19. The systematic review of 13 studies with total participants of 33, 062 health workers found that 23.2 % and 22.8 % of healthcare workers experienced anxiety and depression respectively. The prevalence of insomnia was estimated at 38.9%. Additionally, their findings presented that female healthcare employees and nurses had higher levels of psychological symptoms.

Temsah *et al*. (2020) also evaluated the psychological impact of coronavirus on healthcare workers and compared findings with the stress experienced during the Middle-East Respiratory Syndrome (MERS). Findings revealed that the psychological impact of COVID-19 was significantly higher than that of MERS. It was concluded that pandemics enact a substantial level of anxiety and stress on health workers.

Similarly, Maraqa, Nazzal, and Zink (2020) examined the level of stress among health care workers during the COVID-19 pandemic in Palestine. The researchers through an online self-reported questionnaire engaged 430 frontlines Health Care workers. The researchers employed Chi-Square to compare categorical variables and the results from the study. The findings from the study revealed that most health care workers had high-stress levels during the COVID-19 pandemic. Factors such as the fear of transmitting the disease to

families and loved ones were seen as the most stressful factor. The results prove that health care workers during the pandemic experienced higher stress level. The results from the study are very useful since it sheds light on some of the main factors of stress to Health care workers and how the COVID-19 pandemic affected the level of stress of health care workers.

Relationship between Health Anxiety and Stress among Health Professionals

Asmundson *et al*. (2020) studied the extent to which existing anxiety and mood disorders influence stress responses and coping with the COVID-19 pandemic. A total number of 368 participants were recruited from the United States and Canada. The study concluded that persons with anxiety and mood disorders are highly affected by COVID-19 pandemic. The study projects the need for mental health interventions to assist people with existing mental health disorders to adjust to the impact of COVID-19. Again, it provides the basis for exploring how exposure to media and news related to the pandemic leads to anxiety-related disorders especially among health professionals who are at the frontline in the fight against the deadly pandemic. The study used standardized questionnaires relevant to the objectives of the study. No theoretical paradigm was related to the study. Also, the report of having anxiety or mood disorder was not based on a reliable diagnostic assessment or if they have any additional condition which may affect their coping and stress responses. This can affect the true sample representation of the intended population.

Huang *et al*. (2020) in assessing the factors that affect anxiety of health care workers with high exposure risk to COVID-19 within the radiography departments asserted that higher levels of anxiety can cause serious physical

and mental harm to health care workers and this will, in turn, affects patient safety and the work efficiency of these health care workers. In light of this, the researchers sought to examine the associate risk factors of higher anxiety levels. The researchers adopted the Connor-Davidson Resilience Scale and Self-Rating Anxiety Scale to investigate resilience and anxiety of health workers. Three hundred and sixty-four (364) health care workers from thirty-two (32) hospitals in Sichuan Province, China were sampled for the study. With a mean anxiety score of 44.28±8.93, 23.4% of the respondents reported mild (n=63), moderate (n=19), or severe (n=3) anxiety. According to the results signs of suspected symptoms and the availability of protective materials were some of the risk factors for anxiety. The researcher based on the findings believed that higher anxiety levels tend to affect the physical and mental health of healthcare professionals. The findings from this study are very important for the topic under study since it helps provide answers on the influence of health anxiety on the level of stress, especially among health care workers.

Lai *et al*. (2020) examined the major factors related with mental health outcomes among healthcare workers treating patients with the COVID-19 disease in China. Through a descriptive study of one thousand two hundred and fifty-seven (1257) health care workers within thirty-four (34) hospitals in several regions in China, a considerable number of health care workers reported symptoms of anxiety, insomnia, depression and distress. The findings from the study showed that frontline health care workers were at a higher risk of developing mental health problems and may need support. The findings from this study help to ascertain that frontline health care workers were at higher risks of experiencing depression, anxiety, stress and other mental health-related

problems. However, the major gap from this study is that the researchers could not reveal the impact health anxiety plays on the level of stress of health care workers and this is what the study seeks to achieve.

Coping Strategies among Primary Health Care Professional during COVID-19

A study by Ofori *et al.* (2021) found that among health workers in Ghana, the coping strategies adopted to mitigate the psychological impact of the COVID-19 pandemic was praying more often. Other factors that aided in the reduction of the effect of the pandemic include positive attitude from colleagues, government's tax-free relief salary. Asare-Nuamah, Onumah, Dick-Sagoe, and Kessie (2022) studied the perception and coping strategies to COVID-19 among rural Ghana indigenes. The qualitative descriptive phenomenological approach was adopted. The results indicated that many adopted the use of traditional methods such as drinking locally prepared herbs and following the COVID-19 preventive protocols to cope with the effect of the pandemic.

Oti-Boadi (2022) studied the effect of the pandemic on the psychological wellbeing among university students in Ghana. The qualitative descriptive phenomenological approach was adopted. The results indicated that coping strategies such as denial, venting, and humour were adopted. In the study, analysis showed that only maladaptive coping was found to be significantly and positively associated with fear of COVID-19. Again, both adaptive coping and maladaptive coping strategies had a mediating effect on fear of COVID-19 and psychological distress.

Savitsky *et al*. (2020) evaluated the prevalence of anxiety during this COVID-19 era and coping methods employed among nursing in the Southern District of Israel. The descriptive study engaged 244 nursing students. Findings revealed moderate (42.3%) and severe (13.1%) levels of anxiety among participants. The high level of anxiety was closely related to a lack of protective equipment, fear of infection, and gender. Coping methods include adopting humour and building strong resilience. It was recommended that nursing trainers must develop a close relationship that goes beyond online teaching. This is to enable trainers to identify challenges students encounter and to provide encouragement and support when needed. The evidence of the study adds to existing findings of anxiety experienced by people during this coronavirus time. The study's systematic review of relevant studies paved the way for superb research objectives. Likewise, the choice of data collection tools was very user friendly. The criterion for participation also ensured a perfect representation of the population. My study will be model on such an inclusion and exclusion criteria and tools for flawless findings.

Fullana, Hildago-Mazzei, Vieta and Radua (2020) identified the relationship between coping attitudes and depression among adults in Spain. Data was gathered after two weeks of lockdown from 5545 adults. The analysis revealed that 65% of participants reported symptoms of anxiety and depression. Additionally, participants reported that effective ways of coping with symptoms of anxiety and depression include adherence to recommended diet and health practices, appropriate self-distancing from coronavirus related news, involvement in hobbies, and staying indoors. Based on the findings, the authors established that adherence to simple coping behaviours improves adjustment to

symptoms of anxiety and depression. Limitations of the study include the use of convenience sampling technique and the descriptive survey design. Though these techniques have their advantages there are inherent disadvantages. The descriptive only describes what happens at the time of data collection and therefore findings cannot be generalized to other areas at a different time interval. Likewise, the convenience sampling technique does not allow the true representation of the entire adult population. The result of the study cannot be generalized to the whole population, and there is the possibility of over or under-representation of the population.

Riaz *et al*. (2020) through a descriptive survey assessed the mental health outcomes and coping strategies of frontline health care workers and hospital supporting personnel like administrative workers and laboratory personnel. The researchers through an online questionnaire sought data for the project. One of the major aims of the study was to identify the causes of stress and the major coping methods employed by these personnel in the face of the pandemic. In all, a total of one hundred and twenty-seven (127) frontline medical workers completed the online questionnaire. The findings from the study proved that health care workers during the face of the COVID-19 pandemic faced both emotional and psychological stress. Moreover, the researchers identified that the major coping strategy employed by medical practitioners in combating the stress was emotion-focused coping technique as enshrined in Lazarus and Folkman's Transactional Theory of Stress and Coping. The findings from this study are crucial for the thesis because it espouses some major coping technique employed by healthcare workers in their quest to cater for patients within the pandemic.

Again, Munawar & Choudhry (2020) adopted a framework thematic analysis approach to examine the stress-coping approach adopted by frontline emergency health workers dealing Covid-19 in Pakistan. Data was collected through three channels; face-to-face interview, semi-structured interviews and interviews through telephone. The findings from the study emphasized that coping mechanisms such as checking media exposure and low sharing of COVID-19 details, religious coping among others were some of the coping mechanisms adopted by the health care workers in Pakistan to help combat the stress of the COVID-19 pandemic. The findings from this study though it was undertaken in Pakistan provides important coping strategies that health care workers between the period of the pandemic used and this is crucial for the study as the study seeks to examine the coping strategies employed by primary health care workers.

Impact of Coping Strategies on Stress and Anxiety Levels of Healthcare Professionals

Fullana *et al.* (2020) sought to identify the relationship between coping attitudes and depression among adults in Spain. Data was gathered after two weeks of lockdown from 5545 adults. The analysis revealed that 65% of participants reported signs of anxiety and depression. Additionally, effective ways of coping with symptoms of anxiety and depression include adherence to recommended diet and health practices, appropriate self-distancing from coronavirus related news, involvement in hobbies, and staying indoors. Based on the findings, the authors established that adherence to simple coping behaviours improves adjustment to symptoms of anxiety and depression.

The reviewed studies showed shreds of evidence of association of psychological illness with COVID-19 disease. Particularly, moderate to high levels of anxiety, depression, and stress were found to be linked with the coronavirus disease. Factors such as excessive modern media use, feeding on wrong sources of information, socio-economic factors (educational level, age, marital status, co-habiting with family, gender, being unemployed by the government) also predicted high levels of generalized anxiety. Lack of COVID-19 protective equipment and fear of infection also predicted psychological disorders. Some psychological impact of COVID-19 on health professionals were also identified by some studies namely anxiety, depression, stress and insomnia. The studies also established that coping practices namely adopting humour, building strong resilience, adherence to diet and health practices, appropriate self-distancing from coronavirus related news, involvement in hobbies, and staying indoors serve as buffers to mental illness.

Chapter Summary

Chapter Two of this study sought to explain into details the variables in the study; Health Anxiety, Stress and Coping. Moreover, based on the objectives and the hypothesis of the topic understudy, this chapter explored other related literature on the various variables and the relationship that exists between them. A conceptual review of the study, the conceptual framework, theoretical underpinnings of the study and the empirical pieces of evidence has been highlighted in this chapter.

CHAPTER THREE

RESEARCH METHODS

Introduction

This research investigated Health Anxiety, Stress and Coping Strategies among health professionals during the Covid-19 pandemic in Cape Coast Metropolis. Specifically, this research investigated the influence of Coronavirus pandemic on the psychological wellbeing of healthcare personnel, and the coping strategies they adopt to mitigate its effects in the Cape Coast Metropolis. The present chapter describes in detail the systematic procedures adopted in conducting the study. More specifically, it explains why the descriptive survey design is deemed appropriate for the study. The sub-headings include the research design, study area, the population sampling procedures, data collection instruments, ethical consideration, data collection procedure as well as data analysis.

Research Design

According to Wright, O'Brien, Nimmon, Law, and Mylopoulos (2016), a study design is a general framework or blueprint that outlines the approaches and techniques that a researcher intends to use to gather, analyze and interpret data. Creswell and Creswell (2017) indicated that the design of a study specifies the type of study a researcher is undertaking, its subtype plus the method of data collection and analyses applied in the research. In short, a research design sets out the procedure used to arrive at a solution to the research problem. This study adopted the quantitative research methodology, where the aim is to numerically

quantify the collection and analysis of the data (Bryman, 2012). Specifically, the descriptive survey was used for the study. With this procedure, data was gathered on experiences of health anxiety and stress as well as the coping mechanisms among healthcare staff during the current Covid-19 pandemic period.

In a descriptive survey, a researcher gathers data from a sample chosen from a larger populace and determines the prevalent features of the population in a given period (Omair, 2015). Kantowitz, Roediger, and Elme (2012) revealed that a researcher using the survey method selects a sample of respondents from a population and administers a standardized questionnaire to them that leads to descriptive results. According to Wang and Cheng (2020), descriptive research assesses and describes the distribution of the phenomenon as they occur among a population in specific time. With this type of design, the researcher collects information from a sample to make a general conclusion of the population of interest at a point in time. Groves *et al.* (2004) argued that this research method takes a snapshot of the characteristics of a population at a definite time.

The survey method is considered appropriate for this study because the study explores the impact of COVID-19 pandemic on the psychological wellbeing and adjustment of health professionals. Regards to the objectives of this study, a sample size of 306 given a population of 1,327 healthcare professionals in the Cape Coast Metropolis responded to questionnaire on health anxiety, stress and coping strategies. Data was analyzed descriptively and findings were generalized to the entire populace from which the sample was chosen.

An advantage of this survey method is that it is relatively very easy to conduct and takes a very short period to complete (Omair, 2015). A unique advantage of this survey method is that it enables a researcher to estimate the prevalence of a phenomenon as it occurs in a particular period According to Levin (2006), a descriptive survey design is limited by its failure to establish causal inferences among the variables because the study is affected by the time. Zangirolami-Raimundo, Echeimberg and Leone (2018) revealed that because the data in this survey are collected in a specific moment, it is difficult to analyse associations and establish possible cause and effect relationship.

Study Area

The study area was conducted in Cape Coast Metropolitan Assembly. The Metropolis is located in the Central Region of Ghana and serves as the capital of the Region. It is located at a latitude and longitude of 5^0 11 north and 1^0 19 west. The Metropolis shares boundaries to the South with the Gulf of Guinea, West with Komenda, Edina, Eguafo, Abirem Municipal, east with Abura/Kwamankese District, and north with Twifo-Heman-Lower Denkyira District respectively. It covers an estimated landmark of *"122 square kilometres, with the farthest point at Brabadze, about 17 kilometres from Cape Coast"* (Cape Coast Metropolitan Planning Coordinating Unit, 2012).

Specifically, the study gathered data from health professionals at the Cape Coast Teaching Hospital (CCTH) and the University of Cape Coast Hospital (UCC-H) in the Cape Coast Metropolis, the capital town of the Central Region of Ghana. The CCTH serves as a referral centre for most cases in the Central Region. It provides both Outpatients and In-patients services for the general public. The hospital was used as the leading referral centre for all

Coronavirus related cases in the Central Region. The UCC Hospital provides healthcare services for the students and staff of the University of Cape Coast and the surrounding communities. Similar to Cape Coast Teaching Hospital, the University of Cape Coast Hospital was used as a Coronavirus cases centre particularly for students and staff members of the University community. Healthcare professionals in these facilities may have experienced a significant physical and psychological distress due to their exposure and perceived infection of Coronavirus.

Population

In research, a population is the target group that a researcher intends to engage or gather information from for the study (Majid, 2018). Denscombe (2017, p.18) revealed that a population "Rather than meaning everyone who lives in a in a country, population refers to all the items in a category of things that are being researched". The target population is made up of healthcare professionals (Medical Officers, Physician Assistants, and Nurses) in the CCTH and the UCC-Hospital. These facilities served as COVID-19 emergency response units with special wards designated for confirmed and suspected cases on COVID-19. For these reasons the facilities were chosen because it was assumed that healthcare professionals who work in these institutions may have had close interaction with COVID- 19 and acquired varied experiences throughout the recent disease outbreak.

The estimated number of Medical Officers, Physicians Assistants, and Nurses in CCTH is 1,188 (Medical Officers 281, Physicians Assistants 4, and Nurses 903), whiles the UCC Hospital has a total number of 139 (Medical Officers 12, Physicians Assistants 7, and Nurses 120). The estimated population

for the study from the two facilities is 1,327 health professionals. This is presented in Table 1.

Inclusion and exclusion Criteria

Respondents were registered and recognized Medical Officers, Physician Assistants and Nurses working at the CCTH and UCC Hospitals. All respondents were individuals who were at post or on duty during the start of the Coronavirus pandemic and had not proceeded on leave or vacation. Health professionals who were on leave or vacation during the onset of the pandemic in Ghana were exempted from the study.

Sampling Procedure

The use of sampling involves a strategic decision by the researcher to focus on some rather than all, of the research population Denscombe (2017, p.33). In other words, a sample of a study signifies the smaller group of people or cases selected to represent the entire population in a study. On the other hand, sampling denotes the procedures involved in choosing representatives out of the population for a study (Alvi, 2016; Leedy & Omrod, 2010). The sample size was 306 health professionals in the selected hospitals. This sample was determined using Gill, Johnson, and Clark (2010) sampling size determination table. The assumptions of this sample size determination table include a 95% confidence level, 5% margin of error, and a 50% variance of the population.

The sample size for the study was selected using the Multistage Sampling technique. First, the stratified sampling procedure was used. Under the stratified sampling technique, the entire population was divided into subgroups (strata) (Doctors, Physicians Assistants, and Nurses). A percentage

was calculated to ensure that each of the group is fairly represented from each facility. The procedure is presented in table 1.

Table 1 – *Distribution of estimated sample of Health Professionals (HP)*

Category of HP	**Population**		**Combined Population**	**Estimation of Health Professionals for the study**		
	CCTH	**UCC-H**		**Proportionate computation sample**	**Estimate Sample CCTH (89%)**	**UCC-H (7%)**
Medical Officers	281	12	293	(293 ÷ 1327) × 306 = **67**	60	7
Physician Assistants	4	7	11	(11 ÷ 1327) × 306 = **3**	2	1
Nurses	903	120	1023	(1023 ÷1327) × 306 = **236**	210	26
TOTAL	**1,188**	**139**	**1,327**	**306**	**267**	**25**

The purposive sampling procedure was also adopted to choose eligible candidates for the research. By this sampling procedure, participants were chosen for the fact that they are health professionals from the CCTH and UCC Hospital. Additionally, participants were health professionals who were on duty during the onset of the pandemic in Ghana and had not taken a leave or proceeded on vacation.

After ensuring that each subgroup is fairly represented in terms of percentages, and eligibility, the convenience sampling procedure was used to select participants. The approach under this method considered participants who were readily available and willing to engage in the study. For this reason, data was gathered from available participants.

Data Collection Instrument

Data was collected quantitatively. The questionnaire for data collection consisted of four (4) sections including demographic characteristics, Health Anxiety Inventory, Perceived Stress Scale and the Brief-COPE Inventory.

Demographic Characteristics

This section of the instrument gathered data from participants concerning their demographic characteristics. Items include Age, Gender, and Category of Profession.

Health Anxiety Inventory (HAI-SF) (Salkovskis, Rimes, Warwick, & Clark, 2002)

The HAI-SF was adopted to examine experiences of health anxiety among health professionals. The self-report scale was developed by Salkovskis, Rimes, Warwick and Clark (2002) to measure indications of illness related to anxiety and hypochondria. Rabiei, Klantari, Asgari and Bahrami (2013) revealed that the scale measures the extent to which people are worried about disease infection and the behaviours they would portray if they were to be infected with that disease. In other words, HAI-SF assesses an individual's anxiety related to perceived illness or their exact reactions if they were to be diagnosed with a serious health condition. The HAI-SF entails 18 items measured on a 4-Likert scale. Overall marks range from 0 to 54. A higher score indicates that a greater level of health anxiety is being experienced. According to Salkovskis *et al*., the scale has a good reliability coefficient (Cronbach Alpha = 0.89). A test-retest of the scale proved good reliability coefficient (r=0.90).

Perceived Stress Scale (PSS) (Cohen & Williamson, 1988)

The experiences of stress among health professionals during the current pandemic in the Cape Coast Metropolis were measured using the PSS developed by Cohen and Williamson (1988). Arguably, this scale is the most common scale for the measurement of stress among a varied population. The scale assesses the extent to which adverse events results in perception and experience of stress. The scale has 10 item scale rated on a 5 Likert scale ranging from 0 = Never to 5 = Very often. Respondents were required to respond to the scale by indicating their agreement or disagreement with each item. According to the authors, the PSS demonstrated good internal consistency reliability (Cronbach's alpha=0.78).

Brief-COPE Inventory (Carver, 1997)

Health professionals' style of coping with psychological burden related to COVID-19 was measured using the Brief-COPE developed by Charles S. Carver in 1997. The scale was designed to assess proficient and unproductive ways of coping with adverse events. It has 28 items ranked on a 4 point Likert scale type namely 1 = "I haven't been doing this at all", 2 = "A little bit", 3 = "A medium amount" and 4 = "I've been doing this a lot". There are 14 subscales (each contains 2 items) including "Self-distraction, Active coping, Denial, Substance use, Use of emotional support, Use of instrumental support, Behavioral disengagement, Venting, Positive reframing, Planning, Humor, Acceptance, Religion, & Self-blame". The 14 subscales measure coping style in two major ways namely "Approach Coping and Avoidant Coping". The subscales of the Brief-COPE inventory showed reliable internal consistency between 0.50 - 0.73. According to Bai, Liu, Bo and Zhang (2020) this measure

demonstrated a reliable internal consistency of 0.84 and the Cronbach's alpha for the subscales ranged between 0.51 – 0.90.

Pilot Testing of the Instrument

The instrument for data collection was pilot tested at the Cape Coast Metropolitan Hospital. The hospital was chosen because of availability of a variety of ethnicity, cultural and socio-economic backgrounds within the Cape Coast Metropolis and similar to that of the CCTH and the UCC-Hospital where the study was conducted. Mostly, referrals are made for suspected COVID-19 cases and other conditions from the Metropolitan Hospital to the CCTH and UCC Hospital. A total of 40 health professionals (5 Medical Officer, 6 Physician Assistant, and 29 nurses) were engaged in this exercise.

Cook and Beckman (2006) argued that when a research instrument yields a reliability coefficient greater than or equal to 0.70, the scale is considered reliable for a study. For this study, the reliability coefficient (Cronbach's Alpha) of the adopted scales was computed to identify the accuracy of the instrument and to determine whether the instrument is able to answer the objectives of the study. Similarly, pilot testing of the scales aided in identifying possible weakness and problems identified for corrections before the actual data collection exercise. Results obtained from the study were compared against the initial reliabilities. After the pilot testing exercise, the reliability estimates obtained are presented in Table 2.

Table 2 – *Reliability Estimates of the Research Instruments*

Scale	No. of Items	Cronbach's Alpha
Health Anxiety Inventory (HAI-SF)	18	0.71
Perceived Stress Scale (PSS)	10	0.89
Brief-COPE Inventory	28	0.74

Source: Field Survey, (2021)

Ethical Consideration

The study's proposal was submitted to the Institutional Review Board (IRB) of the University of Cape Coast (UCC) before data collection. Upon approval, an ethical clearance was acquired from the IRB and an introductory letter from the Department of Guidance And Counselling. These documents were submitted to the Administrators of the CCTH and UCC-Hospital.

Additionally, respondents were duly educated on the details and requirement of the study, the importance of their involvement, as well as the voluntary nature of the study. Formal consent was sought from those who willingly decided to engage in the study by signing an informed consent form.

Similarly, anonymity and confidentiality of participants' information were strictly observed. In this regard identity of participants was concealed. Neither names nor any identifiable information from respondents was taken. Only the assigned index and numbers were used to identify the questionnaire during data entry. No aspect of information from participants was given out without their approval. The answered questionnaires were kept in a locked box and were only retrieved when needed for further entry or verification.

Data Collection Procedures

Ethical clearance from the IRB of the University of Cape Coast and an Introductory Letter from the Department of Guidance and Counselling were submitted to the appropriate authorities of the CCTH and UCC–H for their approval to conduct a study in these health organizations. The ethical clearance spelt out the purpose of the study, the need for individual participation, anonymity as well as confidentiality of the respondent's responses. After approval was given, all respondents were informed about the aim, as well as the

right to participate or disengage from this research. Eligible persons who agreed to partake in the study were educated on the requirement of the questionnaire and the proper ways to fill them. All respondents signed an informed consent form. Due to the work schedule of health professionals, they were contacted at different time ranges. Approximately, data collection spanned for two months.

Data Processing and Analysis

All completed questionnaires were rechecked for consistency and completeness. Coding and computerization were done after the creation of data analysis fields with SPSS version 27. The editing procedure helped check whether all items had been accurately responded to. Section A, which gathered data on demographic characteristics was analysed descriptively using frequencies and percentages. These included the respondents' gender, age, and category of health profession.

Research questions 1, 2 and 3 were answered using means and Standard Deviation. Hypothesis 1 was tested using One-way Analysis of Variance (*ANOVA*). Hypothesis 2 was tested using Pearson Moment Correlation. Hypotheses 3 and 4 were tested using Multiple Linear Regression Analysis. Hypothesis 5 was tested using an Independent Sample t test. Lastly, hypothesis 6 was tested using *ANOVA*.

Chapter Summary

The research investigated health anxiety, stress and coping among healthcare professionals in selected hospitals in the Cape Coast Metropolis during the current Covid-19 pandemic. The descriptive survey method was adopted. With this survey method, 3 scales were used to examine some psychological impact of the recent pandemic on health professionals. The

population of the study consisted of healthcare professionals in the CCTH and the UCC-H. The sample was chosen using multistage sampling technique.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

The research aimed at investigating Health Anxiety, Stress and Coping during the Covid-19 pandemic among healthcare professionals in selected Hospitals in the Cape Coast Metropolis. Sub objectives of the study are as follows:

1. Examine the level Health Anxiety among healthcare professionals during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.
2. Examine the level of Stress of Healthcare professionals during Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.
3. Identify the coping strategies adopted by healthcare professionals to mitigate the effects of COVID-19 on their Health Anxiety and Stress levels in selected hospitals in the Cape Coast Metropolis.
4. Determine the difference among healthcare professional (medical doctors, Physician Assistants Nurses) in terms of Health Anxiety and Stress during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis.
5. Examine the relationship between Health Anxiety and Stress among Healthcare professionals regarding the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis

6. Identify the relationship between Coping Strategies and Health Anxiety levels among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
7. Determine a positive relationship between Coping Strategies and Stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
8. Identify the difference among male and female healthcare professionals in terms of Health Anxiety and Stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.
9. Ascertain the difference among age category in terms of Coping Strategies among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

This section of the survey focuses on the analysis of data, presentation of outcomes, and the discussion of results. The analyses consist of two sections: analyses of research questions and hypotheses testing. An analysis of the demographic data is also presented.

Demographic Data of Participants

This sub-section of the chapter presents and discusses the background characteristics of the participants namely gender, age, and category of health professionals. The result of the analysis is presented in Table 3.

The demographic information covers the gender, age, and category of health professionals. First this section provides detailed information on the demographic (composition) features of health professionals sampled for the study. Again, research objective 4 and 8 dealt with analysis involving the demographic characteristics of participants. These objectives sought to

determine the differences in the category of participants with regards to their demographic characteristics, thus in terms of health anxiety and stress. This analysis provides readers another perspective to judge experiences of health anxiety and stress among healthcare professional during the pandemic.

Table 3 – *Frequency Distribution of Demographic Characteristics of Respondents (n=322)*

Variable	Sub-scale	Frequencies	Percentage%
Gender	Male	80	24.8
	Female	242	75.2
	Total	**322**	**100.0**
Age (in years)	18-29	213	66.2
	30-49	107	33.2
	50-60	2	0.6
	Total	**322**	**100.0**
Category of Health Profession	Medical Doctors	19	5.9
	Physician Assistants	17	5.3
	Nurses	286	88.8
	Total	**322**	**100.0**

Source: Field survey, (2021)

As shown in Table 3, the vast proportions of respondents in terms of gender were female health professionals (n = 242, 75.2%). This indicates that females dominate the sample who availed themselves for the study. Regarding age categories, most participants were between "*18 – 29 years*" (n = 213, 66.2%). The least represented group in terms of age category was "*50 – 60 years*" (n = 2, 0.6%). Lastly, nurses dominated the study representing approximately two-third of the sample (n = 286, 88.8%). This result reflects the fact that nurses represent the highest percentage of health professionals in Ghana.

Analyses of Main Data

Research Questions

Research Question One

What is the level of health anxiety among healthcare professionals during the Covid-19 pandemic in selected hospitals in the Cape Coast Metropolis?

This research question sought to find out the level of health anxiety among health professionals during the current COVID-19 pandemic. Respondents completed an 18-item scale, which was rated on a 4-Likert scale. Means and standard deviations were used for the analysis. A test value or hypothesized mean of 2.5 was determined as the standard against which the mean of means and the item mean would be compared. An obtained mean lesser than the test value shows respondents experienced significantly less health anxiety whiles a score above the hypothesized mean reveals the experiences of significantly high levels of health anxiety. The outcomes of the analysis are presented in Table 4.

Table 4 – *Results of Means and Standard Deviation of Health Anxiety among Health professionals.*

Item	***M***	***SD***
I do not worry about my health	2.26	.832
I notice aches and pains less than most other people (of my age)	2.11	.993
I am not aware of bodily sensations or changes	2.43	.895
Resisting thoughts of illness is never a problem	2.18	.832
I am not afraid that I have a serious illness	2.02	.842
I do not have images (mental pictures) of myself being ill	1.68	.821
I do not have any difficulty taking my mind off thoughts about my health	1.80	.840
I am lastingly relieved if my physician tells me there is nothing wrong	1.86	.935
If I hear about an illness I never think I have it myself	1.82	.897
If I have a bodily sensation or change I rarely wonder what it means	2.17	.968
I usually feel at very low risk for developing serious illness	1.92	.934
I never think I have a serious illness	1.67	.841
If I notice an unexplained bodily sensation I don't find it difficult to think about others things	1.78	.769
My family and friends would say I do not worry enough about my health	2.01	.706
If I had COVID-19, I would still be able to enjoy things in my life quite a lot	1.88	.891
If I had developed COVID-19, there is a good chance that modern medicine would be able to cure me	1.71	.779
A serious illness would ruin some aspect of my life	1.72	.863
If I had a serious illness I would not feel that I had lost my dignity	1.84	.854
Mean of Means/ Standard Deviation	**1.946**	**.861**

Source: Field survey, (2021)

The results of Table 4 show that overall, health professionals in the Cape Coast Metropolis experienced significantly lesser health anxiety during the current pandemic. This is disclosed in the mean of means score, (*M = 1.946, SD = .861*), which is significantly lower than the hypothesized mean or the test value (2.5). The lesser health anxiety does not mean the absence of anxiety and uncertainty about the condition, but demonstrates a minor form of health anxiety. When compared with the hypothesized mean, the mean score for all items were significantly lower.

Research Question Two

What is the level of stress encountered by healthcare professionals during the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis?

Objective two sought to estimate the level of stress among medical officers, physician assistants, and nurse during the current pandemic. Respondents were requested to complete a 10-item scale rated on a 5-Likert scale from 1 = Never to 5 = Very Often. The analysis of the research question was done using Means and Standard Deviation. A test value or hypothesized mean of 3.0 was determined as a criterion measure A score above the test value indicates that participants experienced significantly higher level of stress whereas an obtained score lesser than the test value shows respondents experienced significantly lesser stress. The result is shown in Table 5.

Table 5 – *Results of Means and Standard Deviation of Stress among Health professionals.*

Items	**Mean**	**SD**
In the past month, how often have you been upset because of something that happened unexpectedly?	2.80	.992
In the last month, how often have you felt that you were unable to control the important things in your life	2.53	1.068
In the last month, how often have you felt nervous and "stressed"	2.95	.964
In the last month, how often have you felt confident about your ability to handle personal problems?	3.23	1.178
In the last month, how often have you felt that things were going your way?	3.16	.994
In the last month, how often have you found that you could not cope with all things that you had to do?	2.68	1.071
In the last month, how often have you been able to control irritations in your life?	2.95	1.080
In the last month, how often have you felt that you were on top of things?	3.00	1.055
In the last month, how often have you been angered because of things that were outside your control?	2.76	1.072
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2.58	1.128
Mean of Means/ Standard Deviation	**2.864**	**1.061**

Source: Field survey, (2021)

Results from table 5 show that generally Medical Officers, Physician Assistants, and Nurses experienced a significantly low level of stress during the current pandemic. As indicated the Mean of means (*M = 2.864, SD = 1.061*) is significantly lower than the hypothesized mean (3.0). The low experience of stress among the health professionals demonstrate that the impacts of COVID-19 on health professionals in the Cape Coast Metropolis were not significantly

affected in terms of stress. Thus, whiles they experienced stress they were not overly burdened with it.

Research Question Three

What coping strategies are used by healthcare professionals to mitigate the effects of health anxiety and stress in their COVID-19 related responsibilities in the Cape Coast Metropolis?

The purpose of objective three was to determine the significant coping strategies adopted by health professionals during the current COVID-19 pandemic. A 28-item scale was used to access the coping strategies used by participants. The scale was rated on a 4 point Likert scale type namely 1 (I haven't been doing this at all), 2 (A little bit), 3 (A medium amount), and 4 (I've been doing this a lot). There are 14 subscales. Means and standard deviation was used to analyses the data.

A test value of 2.5 was determined as a criterion measure. A score above the criterion or hypothesized mean shows participants frequently adopted is commonly used by health professionals. A lower score, on the other hand, denotes that the coping strategy is less frequently adopted. Summary of the analyses is presented in Table 6.

Table 6 – *Results of Means and Standard Deviation of Coping Strategies among Health professionals.*

Items	**Mean**	**SD**
Self-distraction	5.03	1.756
Active coping	5.39	1.744
Denial	4.36	1.654
Substance use	3.47	1.633
Use of emotional support	4.79	1.625
Instrumental support	5.12	1.747
Behavioral disengagement	3.99	1.499
Venting items	4.70	1.619
Positive reframing	4.97	1.682
Planning	5.30	1.598
Humor	4.52	1.753
Acceptance	5.14	1.656
Religion	5.30	1.730
Self-Blame	4.28	1.682

Source: Field survey, (2021)

As presented in Table 6, the results shows that the mean score of all 14 sub scales were above the hypothesized mean (2.5), indicating that participants regard the sub-dimensions as their plausible coping strategies used during the pandemic. The most significant coping strategy adopted by participants is *Active Coping (M = 5.39, SD = 1.744)*. This result shows that most participants usually become conscious of the impact of the pandemic in their life and devise appropriate mechanism to eliminate the devastating impact of the pandemic. This strategy was followed by *Planning (M = 5.30, SD = 1.598)* and *Religion (M = 5.30, SD = 1.682)*. Planning reflect the fact that participants create specific tactics to overcome anticipated stressors and anxieties related to the pandemic that may affect their wellbeing and work performances. Similarly, most participants adopted religious practices as a laudable means of coping. This

reflects a faith-based attitude or practice that shield individuals from plausible impact of the pandemic.

Other significant responses include *Acceptance* (*M = 5.14, SD =1.656*). This connotes the idea that participants acknowledge that the pandemic is real and adopt appropriate safety precautions. It helps to prevent the pain related to the pandemic from worsening to more suffering. This strategy is followed by *Instrumental Support* (*M = 5.12, SD = 1.747*) and reflects the fact the during the current pandemic health professionals receive tangible help and support from other people and has become means of coping because their efforts and role in the pandemic has been acknowledge by others. The incentives and tax-free allowances offered by the government of Ghana are forms of an instrumental support.

The least adopted coping strategy adopted by respondents is *Substance Use (M = 3.47, SD = 1.633) and Behavioral Disengagement (M = 3.99, SD = 1.499).* Behavioral Disengagement describes an attempt of an individual give-in or lessens their efforts during difficult times. The results reveal most participants did not change their attitude towards work due to the current pandemic.

Hypothesis Testing

Research Hypothesis One

H_A1: There is a significant difference among healthcare professionals (Medical Doctors, Physician Assistants, and Nurses) in terms of health anxiety and stress regarding the COVID-19 pandemic in selected hospitals in the Cape Coast Metropolis.

The objective of this hypothesis was to test whether the categories of health professionals examined in the study experienced health anxiety and stress differently during this COVID-19 era. An ANOVA analysis was used to test for this hypothesis. This analysis is conducted in two sections. First, the categories of health professionals (Medical Doctors, Physician Assistants, and Nurses) were compared to health anxiety. Lastly, the category of health professionals was assessed in terms of experiences of stress.

Preliminary investigations were investigated to guarantee the use of one-way analysis of variances. Table 7 and 8 presents the results of Test of Normality and Homogeneity of variances of category of health professionals in terms of health anxiety.

Table 7 – *Test of Normality of Category of Health Professionals and Health Anxiety*

	Category of Health Profession	**Shapiro-Wilk**		
		Statistic	***df***	**Sig.**
Health anxiety	Medical Doctor	.967	19	.710
	Physician Assistants	.958	17	.587
	Nurse	.990	285	.069

Source: Field survey, (2021) Significant p > 0.05

The result of normality test showed that the data is normally distributed. As indicated in the table, the Sig. value of the Shapiro-Wilk Test for the categories (*Medical Officers: p = .710; Physician Assistants: p = .587; Nurses: p = .069*) are greater than 0.05.

A test of Homogeneity of Variances was conducted to confirm the assumption that justifies the use of the statistical tool *ANOVA*

Table 8 – *Test of Homogeneity of Category of Health Professionals and Health Anxiety*

Levene Statistic	**df1**	**df2**	**Sig.**
1.353	3	318	.260

Source: Field survey, (2021) Significant p < 0.05

As shown in Table 8, the sig. value is greater than 0.05 (p = .260) signifying that equal variances are assumed in the data. Meeting these assumptions, ANOVA analyses was computed to examine probable differences among health professionals with regard to experience of health anxiety. Table 9 displays the results.

Table 9 – *ANOVA Results for Category of Health Professionals In Terms of Health anxiety*

Group	**Sum of Squares**	***df***	**Mean Square**	**F**	**Sig.**
Between Groups	179.083	3	89.541	1.915	.149
Within Groups	14820.305	318	46.752		
Total	**14999.388**	**321**			

Source: Field Survey, (2021) Significant p < 0.05

According the outcomes of Table 9, there is no significant difference among health professionals (Medical Doctors, Physician Assistants, and Nurses) with regard to experience of health anxiety during this COVID-19 pandemic [*F* (3, 318) = 1.915, p = .149]. As shown in the Table, the p = .149, indicating that the analyses is not statistically significant. Thus, the results showed that the experiences of health anxiety in the wake of this pandemic are quite similar across all categories of health professionals. This result could be attributed to the unpreparedness of the health sector to handle the pandemic, absences of protective equipment and the facts that the disease is not a respecter of person or profession.

Further analyses were computed for differences in experienced of health professionals in terms of experienced of stress during this COVID-19 pandemic. Table 10 and 11 presents the results of normality test and Homogeneity of variances among the data.

Table 10 – *Test of Normality of Category of Health Professionals and Stress*

	Category of Health Profession	Shapiro-Wilk		
		Statistic	df	Sig.
Stress	Medical Doctor	.929	19	.169
	Physician Assistant	.934	17	.255
	Nurse	.970	286	.103

Source: Field survey, (2021) Significant p > 0.05

The findings from Table 10 showed that the data is normally distributed. This is shown in the sig. values of the Shapiro-Wilk test of the categories of health professionals which are greater than 0.05.

Table 11 – *Test of Homogeneity of Category of Health Professionals and Stress*

Levene Statistic	df1	df2	Sig.
.050	2	319	.952

Source: Field survey, (2021) Significant p > 0.05

The results presented in Table 11 indicated that equal variances are assumed among the data. This is because the sig. value is greater than .05 (p = .952). ANOVA analyses of significant differences among health professionals in terms stress is presented in Table 12.

Table 12 – *ANOVA Results of Category of Health Professionals In Terms of Stress*

Group	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.291	3	2.645	.086	.918
Within Groups	9783.632	318	30.766		
Total	**9788.922**	**321**			

Source: Field survey, (2021) Significant p < 0.05

The findings in Table 12 indicated no significant difference among Medical Doctors, Physician Assistants, and Nurses regarding stress during this COVID-19 pandemic [F (3, 318) = .086, p = .918]. The results suggest that, during this novel pandemic, Medical Doctors, Physician Assistants, and Nurses experienced relatively similar levels of stress. Against this finding, the null hypothesis, "There is no significant difference among healthcare professionals (Medical Doctors, Physician Assistants, and Nurses) in terms of health anxiety and stress regarding the COVID-19 pandemic", is accepted against the alternative hypothesis.

Research Hypothesis Two

H_A2: There is a significant positive relationship between health anxiety and stress among health professionals in the Cape Coast Metropolis.

Hypothesis two sought to find the association between experiences of health anxiety and stress among health professionals during the current COVID-19 pandemic. The hypothesis was tested using a Pearson Moment Correlation Coefficient. Table 13 presents the results of the analysis

Table 13 – *Results of Pearson Moment Correlation between Health Anxiety and Stress*

		Health Anxiety	Stress
Health Anxiety	Pearson Correlation	–	.020
	Sig. (2-tailed)		.726
	N		322

Source: Field survey, (2021) Significant p < 0.05

The results displayed in Table 13 revealed that health anxiety and stress were not significantly correlated, (*r = .020, p = .726)*. This is because the sig. value for the Pearson analysis is greater than .05. The results suggest no significant correlation between health anxiety and stress among health

professionals during this pandemic. The alternative hypothesis, "There will be a significant positive relationship between health anxiety and stress among health professionals in the Cape Coast Metropolis" is rejected in favour of the null hypothesis.

Research Hypothesis Three

H_A3: There is a significant positive relationship between coping strategies and health anxiety levels among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

This hypothesis looks at the extent to which coping strategies influence experiences of health anxiety among participants. To test this hypothesis, a simple linear multiple regression analysis was conducted to assess the relationship among the variables. The results of the analysis are presented in Table 14.

Table 14 – *Multiple regression analysis of Coping Strategies and Health Anxiety among Health Professionals*

df	R	R Square	Standard Coefficient Beta	F	Sig.
14 307	.414 [a]	.171	.414	4.515	.000[b]

a. Source: Field survey, (2021 Significant if $p < 0.05$
b. Dependent Variable: Health anxiety
c. Predictors: Coping Strategies

Results from Table 14 reveal that coping strategies significantly affected health anxiety levels among health professionals ($\beta = .414, p < 0.05$). In other words, coping strategies positively associated with health anxiety among respondents. Therefore, the alternative hypothesis, "There is a significant positive relationship between coping strategies and health anxiety levels among healthcare professionals" is accepted. The study demonstrated that coping

strategies significantly accounted for 17.1% of variances in health anxiety among participants ($R^2 = .171, F(14, 307) = 4.515, p = .000$). The results imply coping strategies is a significant predictor of healthy anxiety among participants.

Components of Coping Strategies as Predictors of Health Anxiety among Health professionals

Further analysis demonstrated the most significant coping strategy as predictor of health anxiety. The result of the analysis is presented in Table 15.

Table 15 – *Multiple Regression Analysis of Significant Coping Strategies as Predictor of Health anxiety among Health Professionals*

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	27.576	1.803		15.296	.000
Self-distraction	.245	.286	.062	.859	.391
Active coping	-.198	.272	-.050	-.729	.466
Denial	.374	.262	.090	1.429	.154
Substance use	.378	.280	.089	1.347	.179
Use of emotional support	-.423	.305	-.099	-1.386	.167
Instrumental support	.504	.285	.127	1.770	.078
Behavioral disengagement	.547	.310	.119	1.764	.079
Venting items	.029	.299	.007	.097	.922
Positive reframing	.586	.303	.143	1.934	.051
Planning	-.372	.313	-.086	-1.188	.236
Humor	.071	.250	.018	.282	.778
Acceptance	.108	.300	.026	.362	.718
Religion	-.504	.261	-.126	-1.927	.055
Self-blame	.540	.268	.132	2.013	.045

a. Source: Field survey, (2021) Significant $p < 0.05$
b. Dependent Variable: Health Anxiety

The results in Table 15 indicate that the coping strategies, which significantly contributed to health anxiety was Self-blame *($\beta = .132, p = .045$)*

and Positive reframing *(β = .143, p = .051*). This result suggests that among health professionals self-blame and positive reframing accounted for variances in levels of health anxiety.

Research Hypothesis Four

H_A4: There is a positive relationship between coping strategies and stress among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

Similar to hypothesis 3, the purpose of hypothesis 4 was to determine whether coping strategies have positive relationship with stress among participants. Multiple linear regression analysis was computed to estimate the association among the variables. Table 16 presents the results of the analysis.

Table 16 – *Multiple regression analysis of Coping Strategies and Stress among Health Professionals*

			Standard Coefficient		
df	**R**	**R Square**	**Beta**	**F**	**Sig.**
14 307	.478 [a]	.22.8	.478	6.494	.000[b]

a. Source: Field survey, (2021 Significant if p < 0.05
b. Dependent Variable: Stress
c. Predictors: Coping Strategies

According to the results in Table 16, coping strategies had a significant positive relationship with stress (*β = .478, p < 0.05*). The results show that coping strategies significantly affect stress among respondents. Consequently, the alternative hypothesis, "There is a significant positive relationship between coping strategies and stress levels among healthcare professionals" is accepted. The results also demonstrated that coping strategies significantly accounted for 22.8% of variances in health anxiety among participants (R^2 *= .228 F (14, 307) = 6.494, p = .000*). The results imply coping strategies is a significant predictor of stress among participants.

Components of Coping Strategies as Predictors of Stress among Health professionals

Further analysis revealing the significant coping strategy, which predicts stress, is presented in Table 17.

Table 17 – *Multiple Regression Analysis of Significant Coping Strategies as Predictor of Stress among Health Professionals*

	Unstandardized Coefficients		Standardized Coefficients		
Model	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	19.186	1.388		13.822	.000
Self-distraction	.370	.220	.118	1.682	.094
Active coping	.802	.209	.253	3.838	.000
Denial	.269	.202	.081	1.334	.183
Substance use	-.390	.216	-.115	-1.805	.072
Use of emotional support	-.166	.235	-.049	-.708	.480
Instrumental support	.110	.219	.035	.501	.617
Behavioural disengagement	.393	.239	.107	1.642	.102
Venting items	.188	.230	.055	.816	.415
Positive reframing	-.196	.233	-.060	-.843	.400
Planning	.349	.242	.101	1.445	.149
Humor	-.136	.193	-.043	-.704	.482
Acceptance	.372	.231	.112	1.612	.108
Religion	-.099	.202	-.031	-.490	.625
Self-blame	-.095	.206	-.029	-.462	.644

Dependent Variable: Stress

The results disclosed that Active Coping as a significant determinant of stress among health professionals *(β = .253, p = .000*). The results show that respondents usually become aware of the stressor and makes conscious efforts to reduce the negative consequences of the stress. In essence health

professionals are able to recognize the sources of stressors, and devise strategies to overcome the effects.

Research Hypothesis Five

H_A5: There is a significant difference among males and females health professionals in terms of health anxiety and stress in selected hospitals in the Cape Coast Metropolis.

To determine whether a significant difference exists between male and female health professionals in terms of health anxiety and stress, an independent samples t-test was used. The result is presented in Table 18 and 19.

Table 18 – *Independent Samples t-test for Gender Difference among Health Professionals in terms of Health Anxiety*

Health Anxiety	**N**	**Mean**	**SD**	***t***	***df***	***Sig.***
Male	80	35.14	8.26	.210	320	.021
Female	242	34.95	6.42			

Source: Field Survey, (2021) Significant, p< 0.05

The result from Table 18 shows that the mean score of male health professionals *(M = 35.14, SD = 8.26)* is significantly higher than female health professionals *(M = 34.95, SD = 6.42).* The result further revealed that, generally, a significant gender difference exists in the health anxiety of health professionals in the Cape Coast Metropolis (*t* (320) = .210 p = .021). The results therefore suggest that male health professionals experienced significantly higher health anxiety than their female counterpart. Based on this finding, the alternative hypothesis is accepted against the null hypothesis.

Table 19 – *Independent Samples t-test for Gender Difference among Health Professionals in terms of Stress*

Stress	N	Mean	SD	*t*	*df*	*Sig.*
Male	80	28.83	5.02	.301	320	.416
Female	242	28.61	5.69			

Source: Field Survey, (2021) Significant, p < 0.05

According the result of Table 19, there is no gender differences among male and female health professionals regarding experiences of stress (*t* (320) = .301 p = 416). This is because the sig. value is greater than 0.05. Thus, the alternative hypothesis is rejected in favour of the null hypothesis.

Research Hypothesis Six

H_A6: There is a significant difference among age category of health professionals in terms of coping strategies in selected hospitals in the Cape Coast Metropolis.

Differences in coping strategies used by different age categories of health professionals were examined. The three levels of age categories were compared with coping strategies used. A one-way analysis of variances was used. Before this, preliminary analysis investigations, which support the use of the analytical tool was conducted. They include Test of Normality and Homogeneity of Variances. The results of the preliminary analysis are presented in Table 20 and 21.

Table 20 – *Test of Normality of Age Category and Coping Strategies*

		Shapiro-Wilk		
	Age Category	**Statistic**	***df***	**Sig.**
Health anxiety	18 – 29 years	.970	213	.603
	30 – 49 years	.954	107	.474
	50 – 60 years	.901	2	.113

Source: Field survey, (2021) Significant p > 0.05

According to the result of normality test the data is normally distributed. This is because the Sig. value of the Shapiro-Wilk Test for the age categories are greater than 0.05.

A test of Homogeneity of Variances was conducted to confirm the assumption that justifies the use of the statistical tool *ANOVA*

Table 21 – *Test of Homogeneity of Age Category and Coping Strategies*

Levene Statistic	**df1**	**df2**	**Sig.**
1.826	3	318	.163

Source: Field survey, (2021) Significant $p < 0.05$

The results of Table 21 reveal that the sig. value is greater than 0.05 ($p = .163$) signifying that equal variances are assumed in the data. Hence, an ANOVA analyses was computed to examine probable differences among health professionals regard to experiences of health anxiety. The results of the analysis are presented in Table 22.

Table 22 – *ANOVA Results for Age Category of Health Professionals and Coping Strategies*

Group	**Sum of Squares**	***df***	**Mean Square**	**F**	**Sig.**
Between Groups	922.157	3	461.078	2.340	.098
Within Groups	62653.507	318	197.024		
Total	**14999.388**	**321**			

Source: Field Survey, (2021) Significant $p < 0.05$

The results of the showed that in terms of coping strategies, there is no significant differences among the experiences of the three levels of age categories of health professionals [$F(3, 318) = 2.340, p = .098$]. It could deduce from the results that health professionals did not differ on coping strategies

adopted in the face of health anxieties and stress during the current pandemic. Therefore the null hypothesis is accepted against the alternative hypothesis.

Discussion of Findings

In this research, I investigated the psychological effect of the COVID-19 pandemic on healthcare professionals and the coping strategies used in decreasing associated negative consequences of the pandemic. Specifically the study considered health anxieties associated with COVID-19 pandemic, it's associated stress and the mechanisms adopted to overcome the consequences of such experiences among medical officers, physician assistants, and nurses in two selected hospitals in the Cape Coast Metropolis.

Impact of COVID-19 on the Level of Health Anxiety and Stress among Healthcare Professionals

The first two major findings of the study were that medical officers, physician assistants, and nurses in the Cape Coast Metropolis experienced significantly low health anxiety and stress during the current pandemic. The significantly low health anxiety and stress does not necessarily mean the absence of fear and panic, but reflect the fact that the panic and fear associated with the pandemic from their perspective is relatively low. The results of the study could be ascribed to the fact that health professionals had received adequate education and information regarding procedures to ensure their safety, that of patients, and their loved ones. During data collection, Ghana had also come out of lockdown and had seemingly been able to control the second and third wave of the disease. This could also account for the reason why health professionals expressed significantly low level of health anxiety and stress. The results of the study is consistent with Herron, Hay-David, Gilliam, and Brennan

(2020) who found out that the number one cause of health anxiety among healthcare workers during the recent pandemic is the higher prevalence of healthcare personnel who were infected with the disease. Due to the long span of the pandemic, a formidable plan is required to enhance the psychological wellbeing of healthcare professionals.

The discovery of the present research is consistent with a study by Khanal *et al*. (2020) on mental health impacts of the COVID-19 pandemic among healthcare personnel who discovered that health workers within the pandemic experienced symptoms of anxiety, depression and insomnia. The results also agree with a study by Spoorthy, Pratapa, and Mahant, (2020) who exposed that the Coronavirus pandemic is an independent determinant of anxiety and stress among healthcare professionals. Thus, the occurrence of the pandemic in itself has an impact on the psychological wellbeing of healthcare professionals. In line with the result of the study, Tan *et al*. (2020) examined the psychological influence of the pandemic on healthcare workers and noted that unlike the era of the SARS outbreak, health professionals had lower levels of anxiety and depression. The authors attributed this to the mental preparedness of health workers before the first case was recorded in Singapore.

The results of the study disagree with Islam, Ferdous, and Potenza (2020) who assessed COVID-19 associated panic disorder and anxiety, among a sample of the Bangladesh population. The study discovered that panic disorder and anxiety were statistically high. Although the study was not done among healthcare workers, it provides an impetus for understanding the extent to which the current pandemic impacts the psychological wellbeing of all class of individuals including healthcare workers. Consistent with the current study

results, Vizheh *et al*. (2020) conducted a review on the mental wellbeing of healthcare personnel during the COVID-19 pandemic and reported that the lowest incidence of stress, anxiety and depression among the population was 29.8%, 24.1%, and 12.1% respectively. On the other hand, the highest incidence of the aforementioned variables was as follows: stress (62.9%), anxiety (67.6%) and depression (55.9%). This review point to the fact that, factors such as time of the study, geographical area, and prevalence of infection in an area, and the preparedness of health workers significantly contribute to the prevalence of psychological impacts among healthcare professionals.

Consistent with the current study's results, Neto *et al*. (2020) found out in a study that explored the mental health of health personnel who directly cared for COVID-19 patients. They also found out that, job-associated stress is an essential cause of health concerns for health workers. In the study, heavy workload, countless deaths of patients and fellow health workers, and long work shifts were associated with anxiety and depression. In line with the results of the study, Pappa *et al*. (2020), in a systematic review of 33, 062 health workers found that 23.2 % and 22.8 % of healthcare workers experienced anxiety and depression respectively. The prevalence of insomnia was estimated at 38.9%. A comparative study by Temsah *et al*. (2020) revealed that the psychological impact of COVID-19 was significantly higher than that of MERS. Although the current study is not a comparative one, it gives a good indication of their findings to the findings of this current study. It was concluded that although pandemics enact a higher level of anxiety and stress on health personnel, the findings of this study in the Cape Coast Metropolis is low. Likewise to Temsah et al. (2020), Maraqa *et al*. (2020) who investigated stress among healthcare

workers during the current pandemic in Palestine. Findings showed that a significant proportion of healthcare workers had high-stress levels during the COVID-19 pandemic.

The discussion of empirical findings related to the current study underscore the psychological impact of the pandemic on health professionals. Although the outcomes of the current research showed significantly low psychological impact of the pandemic on participants, it must be noted that this result reflects the whole sample and not individual participant experiences. Whiles the experiences may not be even, it is assumed that significant proportion of respondents may experience significantly high level of health anxiety, stress other emotional problems, hence warranting the need to tailor inventions to meet individual needs rather than the whole sample.

Coping Strategies Adopted by Health Professionals during the Current COVID-19 Pandemic

The study found that health professionals adopt multiple coping strategies to mitigate the consequences of the COVID-19 pandemic on their wellbeing and performances at the workplace. Significant among the coping strategies include active coping, planning, religion, acceptance, instrumental support, humour, seeking emotional support, positive reframing, venting items, behavioural disengagement, and self-distraction. The result with emphasis on multiple coping styles among healthcare providers was accentuated by Munawar and Choudhry (2020). According their study, frontline workers adopted coping strategies such as reducing media contact and low enquiry into COVID-19 details, religious coping among others. In agreement with the results of the study, Shechter *et al*. (2020) found that the most dominant coping strategies

adopted by healthcare practitioners at the time the study was conducted were physical exercises, contacting counselling by therapists and online counselling guide (social support).

The study also agrees with that of Savitsky *et al.* (2020) who evaluated the prevalence of anxiety during this COVID-19 era and coping methods among nursing students during the covid-19 pandemic. They noted that coping methods among nurses include adopting humour and building strong resilience. In consonance with the results of this study, Fullana *et al.* (2020) reported that effective ways of coping with anxiety and depression include adherence to recommended diet and health practices, appropriate self-distancing from coronavirus related news, involvement in hobbies, and staying indoors. Another study which corroborates with this study's results was conducted by Riaz *et al.* (2020). The authors found that frontline workers adopted emotionally focused coping techniques. This method entails using different strategies to reduce the psychological harm associated with the pandemic. These studies (Fullana *et al.*, 2020; *Riaz et al.*, 2020; Savitsky *et al.*, 2020) were steered during the period of lockdown when most countries had experienced a significant rise in cases of COVID-19. The results accentuate the fact that healthcare providers adopt different mechanism during period of pandemic to calm the psychological impact associated with the stressful circumstance caused by the pandemic.

As noted from the results of the study, coping strategies such as positive reframing, acceptance, humour, active coping, and religion as used by healthcare professionals stem from the ability to develop a functional health belief. Thus, the perception regarding COVID-19 pandemic will inform the coping strategies used by health professionals and the society at large.

Relationship Between Health Anxiety and Stress among Category of Healthcare Professionals

Another significant discovery of the study indicated no significant difference in the occurrences of stress and health anxiety in terms of category of health professionals (Medical officers, Physician Assistant, and Nurses). In other words, the experiences of health anxiety in the wake of this pandemic are quite similar across all categories of health professionals. At variances with the result of this study, Vizheh *et al*. (2020) discovered that nurses are more susceptible to severe emotional disorders than other health professionals. Further contrary findings to the current study's is Pappa *et al*. 2020's. They found nurses exhibiting higher rates of affective symptoms compared to other medical staff. Some other studies like Liu *et al*., 2020's, also argued that, nurses are at a disadvantage because they are more prone to infection during pandemic due to their work schedule that cause them to spend more hours in caring for patients affected with the pandemic, than other medical practitioners (Liu *et al*., 2020).

In disagreement with the results of the study, Jamshidian, Kiani, and Dargahi (2018) noted that among health professionals, nurses experienced significant levels of stress during disease outbreak. Also contrary to the fifty-one studies review by Moitra *et al*. (2021) is this current study. They found out that there were differences in symptoms amongst categories of Health workers. Comparably, the outcome of the current research is unrelated to the discoveries of Jamshidian *et al*. (2018), as all the results of all categories of health professionals experienced similar level of stress. This may be a result of shared

responsibilities, mutual understanding, and respect among health professionals in the Cape Coast Metropolis.

The findings of this study is in inconsistent with that of Shechter *et al*. (2020) who explored the COVID-19 pandemic associated psychological distress, coping attitude and choice of support among medical practitioners in New York. According to their results nurses were more prone to symptoms of depression, acute stress, and anxiety compared to physicians, residents, and practices providers. In line with Shechter *et al.*(2020)'s study and AlAteeq, Aljhani, Althiyabi, and Majzoub, (2020) the level of anxiety experienced by nurses was significantly higher than that of administrators, physicians, non-physician specialists, technicians and pharmacists. These studies also go contrary to the findings of the current study. Other studies which were found to be consistent with the results of this study were conducted by García-Fernández *et al*, 2020; Guo *et al*, 2020; Hacimusalar, Kahve, Yasar, and Aydin, 2020. In the study of García-Fernández *et al*. (2020), the results showed that compared with other clinical experts like physicians and other professionals, nurses experience higher emotional distresses (anxiety, stress, and depression). This finding by García-Fernández *et al*. is in constrast to the current study. Also, Guo *et al.* (2020) found significant differences in experiences of psychological distress among health professionals during the pandemic. The study revealed that among all medical staff recruited for the study, nurses, frontline medical personnel, younger medical personnel reported higher depression and anxiety than physicians and non-older medical personnel. This is also contrary to the findings of the current study. Furthemore, the findings Hacimusalar, Kahve, Yasar, and Aydin (2020) added to the exiting literature disparity with the current

study. They noted that in Turkey, nurses were increasingly affected than other healthcare providers during the insurgence of the COVID-19 pandemic.

The disparities between the results of the study and empirical review could be attributed to the fact that almost all the studies appraised were conducted during the peak of the pandemic and thus nurses had a heavy workload and schedule which predisposed them to significantly higher levels of mental health disorders. Parallel to my study, the data was taken during a period when the cases of infection of COVID-19 had dramatically reduced and there was also introduction of vaccines. These reasons are good enough to reduce the psychological effects of the pandemic among health professionals.

Relationship between Health Anxiety and Stress among Healthcare professionals

Furthermore, results of this study suggested that there is no statistically significant association between experiences of health anxiety and stress among health professionals during the current pandemic. Thus, health anxiety and stress were not significantly correlated in the study. Inconsistent with this study's results, Huang *et a.l* (2020) found that Health anxiety inclined to affect stress, being the physical and mental health of healthcare professionals. They found out that COVID-19 pandemic has caused psychological effects such as feelings of loneliness, helplessness, stress, irritability, physical and mental fatigue, and hopelessness. Another study by Lai *et al.* (2020) disagree with the results of the current study. They discovered that anxiety among health professionals during the current pandemic often compound their work-related stress.

Inconsistent with the finding of the current study Mo *et al.* (2020) discovered that anxiety was positively associated with stress among frontline health professional during the current pandemic. Other findings that were opposed to the current study are Korkmaz, Kazgan, Çekiç, Tartar, Balcı, and Atmaca, (2020). They also observed a positive relationship between scores of depression, anxiety and stress. Also, Asmundson, Paluszek, Landry, Rachor, Mckay, and Taylor (2020) examined the extent to which having an existing anxiety and mood disorders can influence or affect stress and handling the COVID-19 pandemic found out that anxiety-related and mood disorders were highly related and influence experiences of stress. The study's conclusion is not consistent with findings of this study. The study of Korkmaz et al (2020) and Asmundson *et al*. (2020) were was at variance with the results of the current study.

Another study, Poursadeghiyan *et al*. (2016) which investigated the link among occupational stress, anxiety, depression and job satisfaction among nurses in Iran was not in line with the results of this study. The study found that stress from workplace is linked with anxiety and depression. Whiles the study was conducted before the onset of COVID-19 it provides the impetus for understanding the extent to which stress and anxiety are related. Yet another study with findings that deviates from the results of the current study examined psychological distress among Indians during the periods of Covid-19 lockdown (Rehman *et al*., 2021). The authors found that a significant high positive correlation existed between depression, anxiety, and stress. Likewise, Mertsens, Gerritsen, Dunidam, Salemink, and Engelhard (2020) reported that fear of COVID-19 was signifcantly related to anxiety and depression. This results were

not in agreement with the results of this study. The long queue of findings in contradiction to the findings of the current study is voluminous. It is interesting to note that even before the onset of COVID-19, Diaz, Quintana, and Vogel, 2012; Chen, Sun, and Feng, 2020, had found out that there were associations among stress and anxiety.

The empirical evidence presented so far, showed a distinction from the findings of the study. As noted form the literature, most studies found a significant association between anxiety and stress. Further empirical studies are needed to understand why anxiety may not necessarily be related to stress.

Impact of Coping Strategies on Experiences of Health Anxiety and Stress a among Healthcare Professionals

Furthermore, the study results showed that coping strategies had a positive connection with health anxiety and stress. Additional analyses showed that coping strategies predicted or accounted for variances in health anxiety and stress among health professionals. These results showed that coping strategies have significant impact on experiences of health anxiety and stress. Thus, using the right coping strategies can either improve the wellbeing of healthcare professional experiencing psychological distresses associated with the pandemic or may woefully compound the already affected psychological and emotional wellbeing.

According to the Transactional Theory of Stress and coping the effectiveness of a stressor hangs primarily on the activity of cognitive appraisal and coping. When stressed, health professionals do the following, "continually modify their mental appraisal via proficient knowledge to foster self-psychological stability, take the initiative to be altruistic, seek team

support, take the initiative to reduce stress, adjust sleep, diet and exercise to adapt to internal and external environment changes, and avert the damages triggered by stress, which has positive significance for psychological wellbeing" (Honey & Wang, 2013; Sun *et al*., 2020).

A study by Fullana *et al*., (2020) which is consistent with the result of this study identified that adherence to simple coping behaviours improves adjustment to symptoms of anxiety and depression. Similarly, Littleton, Horsley, John, and Nelson (2007) found that coping strategies had an on psychological distress. In line with the recent study, Wang *et al.* (2020) also found that factors such as perceived impact of the epidemic and coping style significantly influenced psychological distress of the general population during the early stages of the outbreak of the pandemic. Some empirical researches (Westerhuis, Zijlmans, Fischer, Van Andel, & Leijten, 2011; Santarnecchi *et al*., 2018) have also found that coping strategies adopted during stressful situation impact the psychological and overall wellbeing of population. These study results are also consistent with that of the current study

In further support of the findings of the study, other research studies (Hollified, Hewage, Gunawardena, Kodituwakku, Bopagoda, Weerarathnege, & Internaltional Post-Tsunami Study Group, 2008; Huang *et al*., 2013; Sliter, Kale, & Yuan, 2014) have observed that adverse coping strategies might be connected to mental disorders such as post-traumatic stress disorder (PTSD), anxiety, and depression. The empirical evidences presented support the findings of the current study that coping strategies have a significant relationship with psychological distress and eventually impact the level of experiences of psychological distress.

Moreover, it was found that male health professionals experience significantly higher health anxiety than female health professionals. Conversely, no significant gender disparity among health professional in terms of stress was identified. Lastly, there was no significant difference among the age category of health professionals with regard to coping strategies. In essence age difference was not a significant determinant of the type of coping strategy used by health professionals during the pandemic. The findings show that demographic features such as gender are determining components in experiences of psychological distress. This is consistent with Islam *et al*. (2020) who examined panic disorder and generalized anxiety associated with COVID-19 among Bangladesh general population. The results indicate that demographic characteristics including age, level of education, and marital status were predictor of psychological distress. Again, unemployment also predicted high levels of anxiety. As a result of the high prevalence of panic and generalized anxiety, the authors concluded that mental health supportive services must be provided to people of Bangladesh to enable them to overcome the psychological burden that comes with the condition.

Another study, which supports the results of this study, was conducted by Mirzabeigi, Agha Mohammad Hasani, Sayadi, Safarian and Parand Afshar (2021). Their study assessed health anxiety among healthcare personnel during the current pandemic. The study discovered that male healthcare providers expressed higher health anxiety than their female counterparts. Contradictory

with the results of this study, AlAteeq, Aljhani, Althiyabi, and Majzoub (2020) discovered that males were significantly less predicted to have anxiety. Similarly, 30–39 years age group were significantly more predicted to have depression and anxiety. The findings of Moitra *et al*. (2021), gives impetus to the findings of the current of study. In the study, Moitra and colleagues discovered differences in experiences of psychological distress in terms of gender, age, category of healthcare. Another study reported that gender was linked with dimensions of anxiety, stress, and depression. The study also found an inverse correlation between stress and level of education and age category. (Hosseinzadeh-Shanjani, Hajimiri, Rostami, Ramazani, & Dadashi, 2020). This is consistent with the study of Lai, Ma, Wang, Cai, Hu, Wei, and Tan (2020) and that of this study.

The final conceptual framework of the study is presented below in figure 2.

Figure 2: Hypothetical model showing the expected relationships of Health Anxiety, Stress, and Coping Strategies among Health Professionals.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

This research investigated Health Anxiety, Stress and Coping during the Covid-19 pandemic among healthcare professionals in selected Hospitals in the Cape Coast Metropolis. Participants were Medical Officers, Physician Assistants, and Nurses. The study's objectives were to examine experiences of health anxiety and stress among the all health professionals selected for the study. Further, the study determined the coping strategies used by healthcare professionals to alleviate the outcomes of COVID-19 on the levels of health anxiety and stress was also investigated.

The study also determined whether significant differences exist in experiences of health anxiety and stress among the different category of health professionals selected. Again, the study considered the link between health anxiety and stress among health professionals at the time of the current pandemic. The impact of coping strategies adopted by healthcare professionals on their health anxiety and stress levels were also evaluated. Gender difference among professionals in terms of health anxiety and stress as well as differences in coping strategies among medical officers, physician assistants, and nurses was assessed.

The reviewed studies showed shreds of evidence of association of psychological illness with COVID-19 disease. Particularly, moderate to high levels of anxiety, depression, and stress were found to be linked with the

coronavirus disease. Lack of COVID-19 protective equipment and fear of infection also predicted psychological disorders. Some psychological impact of COVID-19 on health professionals were also identified by some studies namely anxiety, depression, stress and insomnia. The studies also established that coping practices namely adopting humour, building strong resilience, adherence to diet and health practices, appropriate self-distancing from coronavirus related news, involvement in hobbies, and staying indoors serve as buffers to mental illness. Explanation into details of Health Anxiety, Stress and Coping were undertaken. Also, based on the objectives and the hypothesis there was exploration of other related literature on the various variables and the relationship that exists between them. A conceptual review of the study, the conceptual framework, theoretical underpinnings of the study and the empirical pieces of evidence were highlighted.

The study adopted the Descriptive survey design. Overall, a total of 306 health professionals (Medical Officers = 67, Physician Assistants = 3, and Nurses = 236) were selected through a multi-stage sampling procedure. Data were gathered using a 4-section questionnaire. Analyses were conducted using means and standard deviation, *ANOVA*, Pearson Moment Correlation Coefficient, Multiple Linear Regression Analysis, as well as an Independent Sample t test.

Summary of Key Findings

The outcome of the analyses is provided as follows:

Findings of the study showed that medical officers, physician assistants, and nurses in the Cape Coast Metropolis experience significantly low health anxiety during the current pandemic.

Again, the results showed that generally, Medical Officers, Physician Assistants, and Nurses experience a significantly low level of stress during the current pandemic.

Also, significant coping strategies used by health professionals to mitigate the consequences of the COVID-19 pandemic on their wellbeing and performances at the workplace include active coping, planning, religion (or spiritual beliefs), acceptance, instrumental support, and self distraction.

The results also revealed no significant difference in the experiences of stress and health anxiety with regard to category of health professions (Medical officers, Physician Assistants, and Nurses). In other words, the experiences of health anxiety in the wake of this pandemic are quite similar across all categories of health professionals.

Similarly, there was no statistically significant relationship between experiences of health anxiety and stress among health professionals during the current pandemic. Thus, health anxiety and stress were not significantly correlated in the study.

Furthermore, the study results showed that coping strategies had a positive relationship with health anxiety and stress. Additional analyses showed that coping strategies predicted or accounted for variances in health anxiety and stress among health professionals. These results showed that coping strategies have significant impact on experiences of health anxiety and stress.

Moreover, it was found that male health professionals experience significantly higher health anxiety than female health professionals. However, there was no significant gender difference among health professional in terms of stress.

Lastly, there was no significant difference among the age category of health professionals with regard to coping strategies. In essence, age difference was not a significant determinant of the type of coping strategy used.

Conclusions

First of all, this research clearly disclosed that professionals in the Cape Coast Metropolis have been less affected psychologically in the current pandemic.

Health professionals adopted diverse coping strategies ranging from positive to negative coping style to overcome the negative impact of the COVID-19 pandemic. Whiles some are relevant for positive change, others such as *Self-distracting, Denial, Substance use, Behavioural disengagement*, and *Self-Blame* have the potential to cause further psychological and physiological disorders thus harming the wellbeing of health professionals.

Experiences of health anxiety and stress were quite similar across all category of healthcare professional. In other words, the psychological impact of COVID-19 pandemic was of the same magnitude for Medical Officers, Physician Assistants, and Nurses in the Cape Coast Metropolis. It could be asserted that the unpreparedness of Ghana to handle the pandemic took similar toll of health professionals who became the frontiers in the fight against the pandemic.

It could be asserted that health professionals adopted mechanisms to fight the psychological disturbances imposed by the results of the pandemic. For instance the study indicated that *Active Coping* was a significant predictor of variances in stress among health professionals. Similarly, *self-blame* and *positive reframing* accounted for changes in health anxiety. Judging from the

predictive role of coping strategies in health anxiety and stress, it is concluded that health professionals who adopt appropriate means of coping such as *active, instrumental support, emotional support, acceptance,* and *humour* would be much successful in overcoming the psychological consequences of the pandemic.

The findings suggest that male health professionals had significantly more health anxiety than females. The study clearly showed that gender plays a role in experiences of health anxiety during the pandemic. On the other hand, gender was not a significant factor in the experiences of stress. Lastly, age of health professionals does not determine the type of coping strategy they adopted during the pandemic.

Recommendations

1. The findings of this research advocate the need for Ghana Health Service, the Ghana Mental Health Authority, and hospital administrators to devise interventions aimed at improving the psychological distresses (health anxiety and stress) of health care personnel during this pandemic. This could be achieved by commissioning counsellors and clinical psychologists to provide workshops and individualized counselling for health care providers during this critical period of world history.
2. Health care professionals should be periodically assess the coping strategies adopted to overcome the psychological impacts related to their work with reference to the pandemic. Such an assessment should go side by side with inoculation of healthcare workers against the devastating

impact of pandemic. This will ensure adopting the right coping skills to deal with such instances.

3. Similarly, it is recommended that policy makers such as the hospital management team should ensure that health care providers are trained to adopt appropriate coping strategies in the face of psychological distresses during this pandemic. This could be done through evaluation of the available personal, family, and organizational policy that enhances the support of health care providers with mental health issues.
4. Consistent screening of medical personnel especially those directly involved in treating, diagnosing patients with COVID-19 should be done for evaluating indicators of psychological symptoms such as stress, depression and anxiety by using multidisciplinary mental health teams including counsellor, psychiatrists, psychologists, medical officers, etc.
5. As the pandemic remains, essential medical and programmes are needed to support health care workers. Our study identified a vulnerable group susceptible to psychological distress. Educational interventions should target medical health care workers to ensure understanding and use of infection control measures. Psychological support could include counselling services and development of support systems among colleagues.
6. The counsellors and psychologists who provide interventions for health professionals must tailor their proceedings to be gender and age specific since these characteristics of healthcare professionals have a bearing on their psychological distress.

Implications for Counselling

The mental health of Healthcare professional needs to be supported if they are to give meticulous and mistake-free healthcare. Psychologists/ counsellors in hospitals therefore should run periodic group guidance and counselling programmes for their colleague health workers.

Psychologists both in hospitals and out of hospitals could engage healthcare professionals on group guidance sessions to initiate talks on mental health during the current COVID-19.

Since not all hospitals have resident Counsellors and Clinical Psychologists, the Ghana Psychology Council could create a website of Counsellors in various Districts in Ghana so that health workers who are overwhelmed with the impact of COVID-19 may access for psychological help.

Through lobbying of Hospital Administrators, Psychologists should be actively involved in providing psychological support including counselling services, development of support systems such as regular cyber support amongst others to healthcare professionals.

Healthcare professionals must be encouraged to voice their mental health challenges. They must be educated to pay attention to their psychological wellbeing and seek early support through psychotherapy.

Suggestion for Future Research

1. Future researches must focus on assessing the advancement or even a possible returning effects of mental and emotional indicators once the impending threat of COVID-19 subsides
2. Future study should examine the sources of stress and anxiety among Ghanaian health professionals during pandemic. This will help in streamlining policies for preparation towards future eventualities.

REFERENCES

Abramowitz, J. S., Deacon, B. J., & Valentiner, D. P. (2007). The Short Health Anxiety Inventory: Psychometric properties and construct validity in a non-clinical sample. *Cognitive Therapy and Research*, *31*(6), 871-883.

Afulani, P. A., Gyamerah, A. O., Aborigo, R., Nutor, J., Malechi, H., Laar, A., ... & Awoonor-Williams, J. J. (2020). Perceived preparedness to respond to the Covid-19 pandemic: a study with healthcare workers in Ghana. *Medrxiv*. https://doi.org/10.1101/2020.07.10.20151142

Agarwal, A., & Malhotra, S. (2019). Stress in our workplace. *Samwaad e-journal*, *8*(1), 60 – 68.

AlAteeq, D. A., Aljhani, S., Althiyabi, I., & Majzoub, S. (2020). Mental health among healthcare providers during coronavirus disease (COVID-19) outbreak in Saudi Arabia. *Journal of Infection and Public Health*, *13*(10), 1432-1437.

Alegbeleye, B. J., & Mohammed, R. K. (2020). Challenges of healthcare delivery in the context of covid-19 pandemic in sub-saharan Africa. *Iberoamerican Journal Of Medicine*, *2*(2), 100-109.

Alvi, M. (2016). A manual for selecting sampling techniques in research. Retrieved from https://mpra.ub.uni-muenchen.de/70218/

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th eds.). Arlington, Virginia: American Psychiatric Publishing. p316.

Asmundson, G.J.G., Paluszek, M.M., Landry, C. A., Rachor, G. S., McKay, D., Taylor, S. (2020). Do pre-existing anxiety-related and mood disorders

differentially impact COVID-19 stress responses and coping?. *Journal of Anxiety Disorders*. (IF 3.079) *DOI: 10.1016/j. janxdis. 2020.102271*

Babbie, E. (2007). *Survey research methods*. (5th ed.). Wadsworth.

Bai, S., Liu, J., Bo, Y., & Zhang, Z. (2020). Reliability and validity of the brief COPE scale among offenders in china. In *Psychology and Law: Research for practice* (pp. 7-18). Sciendo.

Bassetti, M., Vena, A., & Giacobbe, D. R. (2020). The novel Chinese Coronavirus (2019-ncov) infections: challenges for fighting the storm. *European Journal Of Clinical Investigation*, *50*(3), E13209.

Bhowmik, D., Vel, S. D., Rajalakshmi, A. N. R., & Kumar, K. S. (2014). Stress-sign, symptoms, pathology and its management. *Elixir Pharmcy*, *70*, 24036-24042.

Blakey, S. M., & Abramowitz, J. S. (2017). Psychological predictors of health anxiety in response to the Zika virus. *Journal of clinical psychology in medical settings*, *24*(3-4), 270-278.

Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's psychological stress and coping theory. *The handbook of stress and health: A guide to research and practice*, 351-364.

Braquehais, M. D., Vargas-Cáceres, S., Gómez-Durán, E., Nieva, G., Valero, S., Casas, M., & Bruguera, E. (2020). The impact of the covid-19 pandemic on the mental health of healthcare professionals. *An International Journal of Medicine.113*, (9). 613–617. https://doi.org/ 10.1093/qjmed/hcaa207

Brug, J., Aro, A. R., Oenema, A., De Zwart, O., Richardus, J. H., & Bishop, G. D. (2004). SARS risk perception, knowledge, precautions, and

information sources, The Netherlands. *Emerging Infectious Diseases*, *10*(8), 1486.

Bryman, A. (2012). *Social research methods* (4thed.). Oxford University Press.

Bukari, C., Essilfie, G., Aning-Agyei, M. A., Otoo, I. C., Kyeremeh, C., Owusu, A. A., ... & Bukari, I. K. (2020). Impact of Covid-19 on poverty and living standards in Ghana: a micro perspective.

Cape Coast Metropolitan Planning Coordinating Unit. (2012). A*nnual composite progress report for medium term development plan (2012-2013) under Ghana Shared Growth and Development Agenda (GSGDA) 2010–2013*; Retrieved from: *http*: www.ndpc.gov.gh/GPRS/.../CEN TRAL/Cape% 20Coast.pdf

Carver, C. S. (1997). You want to measure coping but your protocol' too long: Consider the brief cope. *International journal of behavioral medicine, 4*(1), 92-100.

Centers For Disease Control And Prevention (2020). Coronavirus disease 2019 (Covid-19). Washington, DC: Author. [Accessed 4 April 2020] Https://Www.Cdc.Gov/Coronavirus/2019-Ncov/Prevent-Gettingsick/ Preventio N.Html.

Chao, M., Xue, D., Liu, T., Yang, H., & Hall, B. J. (2020). Media use and acute psychological outcomes during COVID-19 outbreak in China. *Journal of Anxiety Disorders, 74,* 102248.

Cook, T. M. (2020). Personal protective equipment during the COVID-19 pandemic–a narrative review. Anaesthesia. https://www.ncbi.nlm.nih. gov/pmc/articles/PMC7300967/

Chan, A. O., & Huak, C. Y. (2004). Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. *Occupational Medicine*, *54*(3), 190-196.

Chang, D., Xu, H., Rebaza, A., Sharma, L., & Cruz, C. S. D. (2020). Protecting health-care workers from subclinical Coronavirus infection. *The Lancet Respiratory Medicine*, *8*(3), E13.

Chen, B., Sun, J., & Feng, Y. (2020). How have COVID-19 isolation policies affected young people's mental health?–Evidence from Chinese college students. *Frontiers in psychology*, *11*, 1529.

Cohen, S. , & Williamson, G. (1988). *Perceived stress in a probability sample of the United States.* In S. Spacapan & S. Oskamp (Eds.), The social psychology of health (pp. 31-68). Newbury Park, CA : Sage.

Colligan, T. W., & Higgins, E. M. (2006). Workplace stress: Etiology and consequences. *Journal of workplace behavioral health*, *21*(2), 89-97.

Cook, D. A., & Beckman, T. J. (2006). Current concepts in validity and reliability for psychometric instruments: theory and application. *The American journal of medicine*, *119*(2), 166-167.

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Crum, A. J., Akinola, M., Martin, A., & Fath, S. (2017). The role of stress mindset in shaping cognitive, emotional, and physiological responses to challenging and threatening stress. *Anxiety, Stress, & Coping*, *30*(4), 379-395.

Demir, F., Ay, P., Erbas, M., Ozdii, M., & Yasar, E. (2007). The prevalence of depression and its associated factors among resident doctors working in a training hospital in Istanbul. *Turk Psikiyatri Dergisi*, *18*(1), 31.

Denscombe, M. (2017). *The Good Research Guide: For Small-Scale Social Research Projects*. England: McGraw-Hill Education.

Díaz, C. A., Quintana, G. R., & Vogel, E. H. (2012). Síntomas de depresión, ansiedad y estrés post-traumático en adolescentes siete meses después del terremoto del 27 de febrero de 2010 en Chile. *Terapia psicológica*, *30*(1), 37-43.

Dillard, D. M. (2019). al *The Transactional Theory of Stress and Coping: Predicting Posttraumatic Distress in Telecommunicators*. (Walden University, Doctoral Studies). https://scholarworks.waldenu.edu/dissertations/6719

Dong, E., Du, H., & Gardner, L. (2). An interactive web-based dashboard to track covid-19 in real time. *Lancet Infect Dis*. Https://Doi.Org/10.1016/S1473-3099(20)30120-1.

Eriksen, H. R., & Ursin, H. (2004). Subjective health complaints, sensitization, and sustained cognitive activation (stress). *Journal of psychosomatic research*,*56*(4), 445-448.

Esia-Donkoh, K., Yelkpieri, D., & Esia-Donkoh, K. (2011). Coping with Stress: Strategies Adopted by Students at the Winneba Campus of University of Education, Winneba, Ghana. *US-China Education Review*, B (2), 290-299. https://files.eric.ed.gov/fulltext/ED528318.pdf

Fiorillo, A., & Gorwood, P. (2020). The consequences of the Covid-19 pandemic on mental health and implications for clinical practice. *European Psychiatry*, *63*(1).

Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal Of Personality And Social Psychology*, *54*(3), 466.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of health and social behavior*, 219-239.

Folkman, S. & Moskowitz,J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology, 55*, 745-774

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: study of emotion and coping during three stages of a college examination. *Journal of personality and social psychology*, *48*(1), 150.

Fullana, M. A., Hildago-Mazzei, D., Vieta, E. & Radua, A. (2020). Coping behaviours associated with decreased anxiety and depressive symptoms during the COVID-19 pandemic and lockdown. *Journal of Affective Disorders*, 275, 80-81.

García-Fernández, L., Romero-Ferreiro, V., López-Roldán, P. D., Padilla, S., Calero-Sierra, I., Monzó-García, M., ... & Rodriguez-Jimenez, R. (2020). Mental health impact of COVID-19 pandemic on Spanish healthcare workers.*Psychological medicine*, 1-3.

Gellis, Z. D. (2002). Coping with occupational stress in healthcare: A comparison of social workers and nurses. *Administration in Social work*, *26*(3), 37-52.

Ghana Health Service. (2020). Coronavirus disease (Covid-19) dashboard. Retrived From Https://Www.Ghanahealthservice.Org/Covid19/

Gilbert, A. W., Bilany, J.C.T., Adam, R.E.T., Luke, M., Tobin, R.,Bagdai, S., Galvin, N., Farr, I., Allan, A., Davies, L. Bateson, J. (2020). Rapid implementation of virtual clinics due to Covid-19: report and early evaluation of a quality improvement initiative. BMJ Open Quality. 9:e000985. Doi:10.1136?bmj og-2020-000985

Gill, J., Johnson, P., & Clark, M. (2010). *Research Methods For Managers*. Sage Publications.

Glanz, k. (Eds). River, B. (Eds.). &Viswanath, K. (Eds.). (2015).*Health Behaviour: Theory, Research and Practice(5th ed.)*. Jossey-Bass.

Gorbalenya, A. E., Baker, S. C., Baric, R. S., De Groot, R. J., Drosten, C., Gulyaeva, A. A. (2020). The species severe acute respiratory syndrome-related coronavirus: classifying 2019-ncov and naming it Sars-Cov-2. *Nature Microbiology*. 5. 536–544. Doi:10.1038/S41564-020-0695-Z

Grant, M. C., Geoghegan, L., Arbyn, M., Mohammed, Z., Mcguinness, L., Clarke, E. L., & Wade, R. (2020). The prevalence of symptoms in 24,410 adults infected by the novel Coronavirus (Sars-Cov-2; Covid-19): a systematic review and meta-analysis of 148 studies from 9 countries. *Plos One*. 15 (6), E0234765.

Groves, R. M., Fowler, F. J., Jr., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2004). *Survey methodology*. New York: Wiley.

Guo, J., Liao, L., Wang, B., Li, X., Guo, L., Tong, Z., ... & Gu, Y. (2020). Psychological effects of COVID-19 on hospital staff: a national cross-sectional survey of China mainland. *Available at SSRN 3550050*.

Hacimusalar, Y., Kahve, A. C., Yasar, A. B., & Aydin, M. S. (2020). Anxiety and hopelessness levels in COVID-19 pandemic: A comparative study

of healthcare professionals and other community sample in Turkey. *Journal of psychiatric research*, *129*, 181-188.

Hadjistavropoulos, H. D., Craig, K. D., & Hadjistavropoulos, T. (1998). Cognitive and behavioral responses to illness information: the role of health anxiety. *Behaviour Research and Therapy*. *34(2)*, 149-164 doi.org/10.1016/S0005-7967(98)00014-X

Hammen, C. (2018). Risk factors for depression: an autobiographical review. *Annual Review Of Clinical Psychology*, *14*, 1-28.

Han, Y., Zeng, H., Jiang, H., Yang, Y., Yuan, Z., Cheng, X., ... & Ma, C. (2020). CSC expert consensus on principles of clinical management of patients with severe emergent cardiovascular diseases during the COVID-19 epidemic. *Circulation*, *141*(20), e810-e816.

Hart, J., & Björgvinsson, T. (2010). Health anxiety and hypochondriasis: Description and treatment issues highlighted through a case illustration. *Bulletin of the Menninger Clinic*, *74*(2), 122-140.

Health Workers Union of Ghana (2020). *Incidence of COVID-19 among health workers in Ghana*. Retrieved from https://en.as.com › AS En › Latest News

Herron, J. B. T., Hay-David, A. G. C., Gilliam, A. D., & Brennan, P. A. (2020). Personal protective equipment and Covid 19-a risk to healthcare staff?. *The British journal of oral & maxillofacial surgery*, *58*(5), 500.

Hogan, B. (2010). Coping with health anxiety. *Improving Access to Psychological Therapies*, 1-24.

Hollifield, M., Hewage, C., Gunawardena, C. N., Kodituwakku, P., Bopagoda, K., Weerarathnege, K., & International Post-Tsunami Study Group.

(2008). Symptoms and coping in Sri Lanka 20–21 months after the 2004 tsunami. *The British Journal of Psychiatry*, *192*(1), 39-44.

Holshue, M. L., Debolt, C., Lindquist, S., Lofy, K. H., Wiesman, J., Bruce, H., ... & Diaz, G. (2020). First case of 2019 novel Coronavirus in the United States. *New England Journal Of Medicine*. 382(10):929–36.

Honey, M., & Wang, W. Y. (2013). New Zealand nurses perceptions of caring for patients with influenza A (H1N1). *Nursing in critical care*, *18*(2), 63-69.

Hosseinzadeh-Shanjani, Z., Hajimiri, K., Rostami, B., Ramazani, S., & Dadashi, M. (2020). Stress, Anxiety, and Depression Levels among Healthcare staff during the COVID-19 epidemic. *Basic and clinical neuroscience*, *11*(2), 163–170. https://doi.org/10.32598/bcn.11.covid 19.651.4

Huang, J. Z., Han, M. F., Luo, T. D., Ren, A. K., & Zhou, X. P. (2020). Mental health survey of 230 medical staff inn a tertiary infectious disease hospital for Covid-19. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi= Zhonghua Laodong Weisheng Zhiyebing Zazhi= Chinese Journal Of Industrial Hygiene And Occupational Diseases*, *38*, E001-E001.

Huang, J., Liu, Q., Li, J., Li, X., You, J., Zhang, L., ... & Luan, R. (2013). Post-traumatic stress disorder status in a rescue group after the Wenchuan earthquake relief. *Neural regeneration research*, *8*(20), 1898.

Huang, L., Wang, Y., Liu, J., Ye, P., Chen, X., Xu, H., ... & Ning, G. (2020). Factors influencing anxiety of health care workers in the radiology department with high exposure risk to COVID-19. *Medical science*

monitor: international medical journal of experimental and clinical research, *26*, e926008-1.

Hudson, K. (2016). Coping complexity model: coping stressors, coping influencing factors, and coping responses. *Psychology*, *7*(03), 300.

Islam, M. S., Ferdous, M. Z., & Potenza, M. N. (2020). Panic and generalized anxiety during the COVID-19 pandemic among Bangladeshi people: An online pilot survey early in the outbreak. *Journal of affective disorders*, *276*, 30-37.

Ismail, A., Yao, A., Yeo, E., Lai-Kuan, K., & Soon-Yew, J. (2010). Occupational stress features, emotional intelligence and job satisfaction: An empirical study in private institutions of higher learning. *Scientific e-journal of Management Science*, *16*(5), 5-33.

Jamshidian, Y., Kiani, A., & Dargahi, S. (2018). Relationship of cognitive emotion regulation and meaning in life with health anxiety among emergency nurses. *Health in Emergencies and Disasters*, *3*(4), 199-206.

John Hopkins University. (2020). *Covid-19 Dashboard By The Centre For Systemic Science And Engineering At John Hopkins University. Arcgis*. Johns Hopkins University.

Kantowitz, B. H., Roediger, H. L., & Elmes, D. G. (2012). *Experimental Psychology: Understanding Psychological Research* (10th ed.). West Publishing.

Karlson, U., Fraenlek, C. (2020). Complete protection from Covid-19 is possible for health workers. *BMJ2020;370:m2641*, http://doi:10.1136/bmj.mi2641

Khanal, P., Devkota, N., Dahal, M., Paudel, K., & Joshi, D. (2020). Mental health impacts among health workers during COVID-19 in a low resource setting: a cross-sectional survey from Nepal. *Globalization and health*, *16*(1), 1-12.

Koh, D. (2020). Occupational risks for Covid-19 infection. *Occup Med (Lond)*, *70*(1), 3–5.

Korkmaz, S., Kazgan, A., Çekiç, S., Tartar, A. S., Balcı, H. N., & Atmaca, M. (2020). The anxiety levels, quality of sleep and life and problem-solving skills in healthcare workers employed in COVID-19 services. *Journal of Clinical Neuroscience*, *80*, 131-136.

Kugbey, N., Ohene-Oti, N., & Vanderpuye, V. (2020). Covid-19 and its ramifications for cancer patients in low-resource settings: ghana as a case study. *Ecancermedicalscience*, *14*,Ed99.Https://Doi.Org/10.3332/Ecancer.2020.Ed99

Kakunje, A. (2011). Stress among health care professionals-The need for resiliency. *Online Journal of Health and Allied Sciences*, *10*(1).

Lai, J., Ma, S., Wang, Y., Cai, Hu, J., Wei, N., & Tan, H. (2020). Factors associated with mental health outcomes among health care workers exposed to Coronavirus disease. *Jama Network Open*, *3*(3), E203976-E203976.

Lauer, S. A., Grantz, K. H., Bi, Q., Jones, F. K., Zheng, Q., Meredith, H. R.,... & Lessler, J. (2020). The incubation period of Coronavirus disease 2019 (Covid-19) from publicly reported confirmed cases: estimation and application. *Annals of Internal Medicine*, *172*(9), 577-582.

Lazarus, J.H. (2012). Epidemiology of Graves' orbitopathy (GO) and relationship with thyroid disease. *Best practice & research. Clinical endocrinology & metabolisim, 26*(3), 273-279. https://doi.org/10.1016/j.beem.2011.10.005.

Lazarus, R. S. & Folkman, S., (1984). *Stress, appraisal, and coping* (pp. 150-153). Springer Publishing Company.

Levin, K. A. (2006). Study design III: Cross-sectional studies. *Evid Based Dent, 7(1),* 24–25.

Lee, S. M., Kang, W. S., Cho, A. R., Kim, T., & Park, J. K. (2018). Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Comprehensive Psychiatry, 87,* 123-127.

Lee, A. M., Wong, J. G., McAlonan, G. M., Cheung, V., Cheung, C., Sham, P. C., ... & Chua, S. E. (2007). Stress and psychological distress among SARS survivors 1 year after the outbreak. *The Canadian Journal of Psychiatry*, *52*(4), 233-240.

Leedy, P. D., & Ormrod, J. (2010). E. 2010. Practical research: Planning and design. *Ohio, Merrill Prentice Hall*.

Lin, M., Beliavsky, A., Katz, K., Powis, J. E., Ng, W., Williams, V., ... & Johnstone, J. (2020). What can early Canadian experience screening for Covid-19 teach us about how to prepare for a pandemic?. *Cmaj*, 192(12), E314-E318.

Littleton, H., Horsley, S., John, S., & Nelson, D. V. (2007). Trauma coping strategies and psychological distress: A meta-analysis. *Journal of*

Traumatic Stress: Official Publication of the International Society for Traumatic Stress Studies, *20*(6), 977-988.

Liu, Z., Han, B., Jiang, R., Huang, Y., Ma, C., Wen, J., ... & Ma, Y. (2020). Mental health status of doctors and nurses during COVID-19 epidemic in China.*Available at SSRN 3551329*.

Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., ... & Yang, B. X. (2020). The experiences of health-care providers during the Covid-19 crisis in China: A Qualitative Study. *The Lancet Global Health*.

Liu, X., Kakade, M., Fuller, C. J., Fan, B., Fang, Y., Kong, J., ... & Wu, P. (2012). Depression after exposure to stressful events: lessons learned from the severe acute respiratory syndrome epidemic. *Comprehensive psychiatry*, *53*(1), 15-23.

Liu, C. Y., Yang, Y. Z., Zhang, X. M., Xu, X., Dou, Q. L., Zhang, W. W., & Cheng, A. S. (2020). The prevalence and influencing factors in anxiety in medical workers fighting COVID-19 in China: a cross-sectional survey. *Epidemiology & Infection*,*148*.

Mahase, E. (2020). Coronavirus: Covid-19 has killed more people than SARS and MERS combined, despite lower case fatality rate. *British Medical Journal*, *368*, 641.

Mahler, D. G., Lakner, C., Aguilar, R. A. C., & Wu, H. (2020). Updated estimates of the impact of Covid-19 on global poverty. *World Bank Blogs*, *8*.

Majid, U. (2018). Research fundamentals: Study design, population, and sample size. *Undergraduate research in natural and clinical science and technology journal*, *2*, 1-7.

Maraqa, B., Nazzal, Z., & Zink, T. (2020). Palestinian Health Care Workers' Stress and Stressors During COVID-19 Pandemic: A Cross-Sectional Study. *Journal of Primary Care & Community Health*, *11*, 21501327 20955026.

Maunder, R., Hunter, J., Vincent, L., Bennett, J., Peladeau, N., Leszcz, M., ... & Mazzulli, T. (2003). The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *Cmaj*, *168*(10), 1245-1251.

Mertens, G., Gerritsen, L., Dunidam, S., Salemink, E. & Engelhard, I. M. (2020). Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. *Journal of Anxiety Disorders*, 74, 102258.

Meurs, J. A., & Perrewé, P. L. (2011). Cognitive activation theory of stress: An integrative theoretical approach to work stress. *Journal of Management*, *37*(4), 1043-1068.

Meli, L., Birk, J., Edmondson, D., & Bonanno, G. A. (2020). Trajectories of posttraumatic stress in patients with confirmed and rule-out acute coronary syndrome. *General Hospital Psychiatry*, *62*, 37-42.

Mirzabeigi, A. R., Agha Mohammad Hasani, P., Sayadi, A. R., Safarian, M., & Parand Afshar, S. (2021). Assessing Health Anxiety among Healthcare Providers of COVID-19 Patients from March to May 2020, Rafsanjan County, Iran. *Journal of Occupational Health and Epidemiology*, *10*(1), 24-30.

Mo, Y., Deng, L., Zhang, L., Lang, Q., Liao, C., Wang, N., ... & Huang, H. (2020). Work stress among Chinese nurses to support Wuhan in fighting

against COVID-19 epidemic. *Journal of nursing management*, *28*(5), 1002-1009

Moitra, M., Rahman, M., Collins, P. Y., Gohar, F., Weaver, M., Kinuthia, J., ... & Kumar, M. (2021). Mental health consequences for healthcare workers during the COVID-19 pandemic: a scoping review to draw lessons for LMICs. *Frontiers in psychiatry*, *12*, 22.

Moore, M., Gelfeld, B., & Adeyemi Okunogbe, C. P. (2017). Identifying future disease hot spots: infectious disease vulnerability index. *Rand Health Quarterly*, *6*(3).

Moustaka, E., & Constantinidis, T. C. (2010). Sources and effects of work-related stress in nursing. *Health science journal*, *4*(4), 210.

Muhie, O. A. (2020). Update on Covid-19 pandemic. *International Journal Of Health And Biological Sciences*, *3*(02), 01-05.

Munawar, K., & Choudhry, F. R. (2020). Exploring stress coping strategies of frontline emergency health workers dealing Covid-19 in Pakistan: A qualitative inquiry. *American journal of infection control*. Retrieved from: https://doi.org/10.1016/j.ajic.2020.06.214

Nakao, M. (2010). Work-related stress and psychosomatic medicine. *BioPsychoSocial medicine*, *4*(1), 4.

Neto, M. L. R., Almeida, H. G., Esmeraldo, J. D. A., Nobre, C. B., Pinheiro, W. R., de Oliveira, C. R. T., ... & Lima, C. K. T. (2020). When health professionals look death in the eye: the mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Research*, 112972.

Nyashanu, M., Pfende, F., & Ekpenyong, M. (2020). Exploring the challenges

faced by frontline workers in health and social care amid the COVID-19 pandemic: experiences of frontline workers in the English Midlands region, UK. *Journal of Interprofessional Care.* 32674701. 1-17.https://doi.org/10.1080/13561820.2020.1792425

Ofori, A. A., Osarfo, J., Agbeno, E. K., Manu, D. O., & Amoah, E. (2021). Psychological impact of COVID-19 on health workers in Ghana: A multicentre, cross-sectional study. SAGE open medicine, 9, 205031 21211000919.

Olatunji, B. O., Etzel, E. N., Tomarken, A. J., Ciesielski, B. G., & Deacon, B. (2011). The effects of safety behaviors on health anxiety: An experimental investigation. *Behaviour research and therapy*, *49*(11), 719-728.

Omair A. (2015). Selecting the appropriate study design for your research: Descriptive study designs. *J Health Spec, 3*, 153-156.

Ornell, F., Schuch, J. B., Sordi, A. O., & Kessler, F. H. P. (2020). "Pandemic fear" and Covid-19: mental health burden and strategies. *Brazilian Journal Of Psychiatry*, *42*(3), 232-235.

Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsi, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the Covid-19 pandemic: a systematic review and meta-analysis. *Brain, Behavior, And Immunity, 88,* 901-907.

Poursadeghiyan, M., Abbasi, M., Mehri, A., Hami, M., Raei, M., & Ebrahimi, M. H. (2016). Relationship between job stress and anxiety, depression and job satisfaction in nurses in Iran.*The social sciences*, *11*(9), 2349-55.

Rabiei, M., Kalantari, M., Asgari, K., & Bahrami, F. (2013). Factor structure analysis, validity and reliability of the health anxiety inventory short form. *Journal of Depression and Anxiety*, *2*, 2167-1044.

Rehman, U., Shahnawaz, M. G., Khan, N. H., Kharshiing, K. D., Khursheed, M., Gupta, K., ... & Uniyal, R. (2021). Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community mental health journal*, *57*(1), 42-48.

Reme, S. E., Eriksen, H. R., & Ursin, H. (2008). Cognitive activation theory of stress--How are individual experiences mediated into biological systems?. *Scandinavian Journal of Work, Environment & Health*, *34*(6), 177.

Riaz, S., Saleem, Y., Hazrat, H., Ahmed, F., Sajid, U., Qadri, S. F., & Rufan, S. (2020) Mental Health Outcomes and Coping Strategies Among Health Care Workers Exposed to Coronavirus Disease 2019 (COVID-19).

Rodríguez, B O., Sánchez, T. L. (2020). The Psychosocial Impact of COVID-19 on health care workers. *International braz j urol*, *46* (1) pp. 195-200. https://doi.org/10.1590/S1677-

Salkovskis, P. M., Rimes, K. A., Warwick, H. M. C. & Clark, D. M. (2002). The Health Anxiety Inventory: development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychological medicine*, *32*(5), 843.

Santarnecchi, E., Sprugnoli, G., Tatti, E., Mencarelli, L., Neri, F., Momi, D., ... & Rossi, A. (2018). Brain functional connectivity correlates of coping styles. *Cognitive, Affective, & Behavioral Neuroscience*, *18*(3), 495-508.

Savitsky, B., Findling, Y., Ereli, A., & Hendel, T. (2020). Anxiety and coping strategies among nursing students during the covid-19 pandemic. *Nurse Education in Practice*, 102809.

Schoenmakers, E. C., van Tilburg, T. G., & Fokkema, T. (2015). Problem-focused and emotion-focused coping options and loneliness: how are they related?. *European Journal of Ageing*, *12*(2), 153-161.

Seiler, A., Fagundes, C. P., & Christian, L. M. (2020). The impact of everyday stressors on the immune system and health. In *Stress Challenges and Immunity in Space* (pp. 71-92). Springer, Cham.

Selye, H. (1973). The Evolution of the Stress Concept: The originator of the concept traces its development from the discovery in 1936 of the alarm reaction to modern therapeutic applications of syntoxic and catatoxic hormones. *American scientist*, *61*(6), 692-699.

Shanafelt, T., Ripp, J., & Trockel, M. (2020). Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *Jama*, *323*(21), 2133-2134.

Shechter, A., Diaz, F., Moise, N., Anstey, D. E., Ye, S., Agarwal, S., ... & Abdalla, M. (2020). Psychological distress, coping behaviors, and preferences for support among New York healthcare workers during the COVID-19 pandemic. *General hospital psychiatry*, *66*, 1-8.

Si, M., Su, X., Jiang, Y., Wang, W., Gu, X. F., Ma, L., ... & Qiao, Y. L. (2020). The psychological impact of covid-19 on medical care workers in China. *Available At Ssrn 3592642*.

Skrip, L. A., Selvaraj, P., Hagedorn, B., Ouédraogo, A. L., Noori, N., Mistry, D., ... & Althouse, B. M. (2020). Seeding Covid-19 across sub-saharan

africa: an analysis of reported importation events across 40 countries. *Medrxiv*. Retrieved From Https:// Doi: 10.1101/2020.04. 01.20050203.

Sliter, M., Kale, A., & Yuan, Z. (2014). Is humor the best medicine? The buffering effect of coping humor on traumatic stressors in firefighters. *Journal of Organizational Behavior*, *35*(2), 257-272.

Spoorthy, M. S., Pratapa, S. K., & Mahant, S. (2020). Mental health problems faced by healthcare workers due to the COVID-19 pandemic–A review. *Asian journal of psychiatry*, *51*, 102119.

Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., ... & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American journal of infection control*, *48*(6), 592-598.

Swaray, S. M., Tetteh, J., Ekem-Ferguson, G., Awinibuno, I. A., Adu-Gyasi, D., Acheampong, F., & Yawson, A. E. (2021). Psychological Distress Amongst Medical Laboratory Professionals Involved in COVID-19-Related Duties: A Nationally Stratified Cross-Sectional Survey, Ghana. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *58*, 00469580211067479.

Temsah, M. H., Al-Sohime, F., Alamro, N., Al-Eyadhy, A., Al-Hasan, K., Jamal, A., ... & Al-Subaie, S. (2020). The Psychological impact of Covid-19 pandemic on health care workers in a Mers-Cov endemic country. *Journal of Infection and Public Health*, *13*(6), 877 -882.

Tam, C. W., Pang, E. P., Lam, L. C., & Chiu, H. F. (2004). Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and

psychological impact among frontline healthcare workers. *Psychological medicine*, *34*(7), 1197.

Tan, B. Y., Chew, N. W., Lee, G. K., Jing, M., Goh, Y., Yeo, L. L., ... & Sharma, V. K. (2020). Psychological impact of the COVID-19 pandemic on health care workers in Singapore. *Annals of internal medicine*, *173*(4), 317-320.

Tarlue, M., (2020, July 16). 2,065 Health workers test positive for Coronavirus. *Dailyguide Network*. Https://Dailyguidenetwork.Com/ 2065-Health-Workers-Test-Positive-For-Coronavirus/

Te Poel, F., Baumgartner, S. E., Hartmann, T., & Tanis, M. (2016). The curious case of cyberchondria: A longitudinal study on the reciprocal relationship between health anxiety and online health information seeking. *Journal of anxiety disorders*, *43*, 32-40.

Townsend, J. A., & Wells, M. H. (2019). *Behavior guidance of the pediatric dental patient*. In Pediatric Dentistry (pp. 352-370). Content Repository Only.

Tyrer, P. (2020). COVID-19 health anxiety. *World Psychiatry*, *19*(3), 307-308.

Tyrer, P. (2018). Recent advances in the understanding and treatment of health anxiety. *Current psychiatry reports*, *20*(7), 49.

United Nations Children's Fund (UNICEF). (2020). Ghana: Covid-19 Situation Report – #3. Retrieved From Https://Www.Unicef.Org/ Appeals/Files/Unicef_Ghana_Covid19_Situation_Report_No_3__1_15 _May_2020.Pdf

Ursin, H., & Eriksen, H. R. (2004). The cognitive activation theory of stress. *Psychoneuroendocrinology*, *29*(5), 567-592.

Velichkovsky, B. B. (2009). Primary and secondary appraisals in measuring resilience to stress. *Psychology in Russia: State of the Art*, *2*, 539-563.

Vizheh, M., Qorbani, M., Arzaghi, S. M., Muhidin, S., Javanmard, Z., & Esmaeili, M. (2020). The mental health of healthcare workers in the COVID-19 pandemic: A systematic review. *Journal of Diabetes & Metabolic Disorders*, 1-12.

Wallace, J. (2020). Six Types of Stress and How to Manage Them Effectively. Retrieved from https://www.psychreg.org/types-of-stress/ on 18thy November, 2020.

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. *Chest Journal*, *158*(1), 65-71.

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus disease (Covid-19) epidemic among the general population in China. *International Journal Of Environmental Research And Public Health*, *17*(5), 1729.

Wang, H., Xia, Q., Xiong, Z., Li, Z., Xiang, W., Yuan, Y., ... & Li, Z. (2020). The psychological distress and coping styles in the early stages of the 2019 coronavirus disease (COVID-19) epidemic in the general mainland Chinese population: A web-based survey. *Plos one*, *15*(5), e0233410.

Wasim, T., Raana, G. e., Bushra, N., & Riaz, A. (2020). Effect of covid-19 pandemic on mental wellbeing of healthcare workers in tertiary care hospital. *Annals Of King Edward Medical University*, *26*(Special Issue), 140-144.

Westerhuis, W., Zijlmans, M., Fischer, K., Van Andel, J., & Leijten, F. S. (2011). Coping style and quality of life in patients with epilepsy: a cross-sectional study. *Journal of neurology*, *258*(1), 37-43.

Wheaton, M. G., Abramowitz, J. S., Berman, N. C., Fabricant, L. E., & Olatunji, B. O. (2012). Psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic. *Cognitive Therapy and Research*, *36*(3), 210-218.

Wong, T. W., Yau, J. K., Chan, C. L., Kwong, R. S., Ho, S. M., Lau, C. C., ... & Lit, C. H. (2005). The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. *European Journal of Emergency Medicine*, *12*(1), 13-18.

World Health Organization. (2020). Coronavirus Disease (Covid-19) Pandemic. Geneva, Switzerland. Available: Https://Www.Who.Int/ Emergencies/Diseases /Novel-Coronavirus-2019

World Health Organization. (2020). Coronavirus Disease (Covid-19) Dashboard. Https://Covid19.Who.Int/?Gclid=Cjwkcajwwab7brbaeiwa apqpthl0otshxbmr9o0pkuikz747njlcr6qai7cce9-Ytur3ktdwbrlje Xocvjiqavd_Bwe

World Health Organization. (2020). *Modes Of Transmission Of Virus Causing Covid-19: Implications For Ipc Precaution Recommendations: Scientific Brief, 27 March 2020* (No. WHO/2019-Ncov/Sci_Brief/ Transmission_Modes/2020.1).

World Health Organization. (2020). Coronavirus Disease (Covid-19) Situation Report-171.Https://Www.Who.Int/Docs/DefaultSource/Coronaviruse/

Situation-Reports/20200709-Covid-19-Sitrep-171.Pdf?Sfvrsn=9aba 7ec7_2

World Health Organization. (2020). Rational use of personal protective equipment for coronavirus disease (COVID-19): Interim guidance, 27 February 2020 (No. WHO/2019-nCov/IPCPPE use/2020.1).

World Health Organization (2020). Rolling update on the coronavirus disease (Covid-19). April 2, 2020 Update. Geneva, Switzerland. Https://Www. Who.Int/Emergencies/Diseases/Novel-Coronavirus-2019/Events-As-They-Happen

Wright, S., O'Brien, B. C., Nimmon, L., Law, M., & Mylopoulos, M. (2016). Research design considerations. *Journal of graduate medical education*, *8*(1), 97-98.

Wu, P., Fang, Y., Guan, G., Fan, B., Kong,J., Yao, Z. Liu, X., Fuller, C. J., Susser E., Lu, J. & Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *Can J Psychiatry*. *54*(5): 302–311. doi: 10.1177/070674370905400504.

Zandifar, A., & Badrfam, R. (2020). Iranian mental health during the Covid-19 epidemic. *Asian Journal of Psychiatry*, *51*. https://doi.org/10.1016/j. ajp.2020.101990

Zangirolami-Raimundo, J., Echeimberg, J. O., & Leone, C. (2018). Research methodology topics: Cross-sectional studies. *Journal of Human Growth and Development*, *28*(3), 356-360. doi: ttp://oi.org/10.7322/jhg d.152198

Zhu, Y., Chen, L., Ji, H., Xi, M., Fang, Y., & Li, Y. (2020). The risk and prevention of novel coronavirus pneumonia infections among inpatients in psychiatric hospitals. *Neuroscience Bulletin*. 36. 299–302

APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

SCHOOL OF GRADUATE STUDIES AND RESEARCH

RESEARCH QUESTIONNAIRE

This questionnaire forms an integral part of a study exploring the experiences of health anxiety and stress among health professionals during the current COVID-19 pandemic and adopted coping style used to mitigate these experiences in the Cape Coast Metropolitan Assembly. The results of this research, based on your responses will be presented to the School of Graduate Studies, University of Cape Coast. This exercise is mainly for academic and policy purposes and your anonymity and confidentiality is strictly assured. You will be contributing immensely towards the success of the research and knowledge if you answer these questions as frankly as possible. Thank you for your assistance.

SECTION A

DEMOGRAPHIC CHARACTERISTICS

Please tick (√) the correct answer to the following questions as they apply to you.

1. **Age:**

   18 years – 29 years [ ] 30 years – 49 years [ ] 50 years – 60 years [ ]

2. **Gender:** Male [ ] Female [ ]

3. **Category of Health Profession:**

   Medical Doctor [ ] Physician Assistant [ ] Nurse [ ]

SECTION B

Health Anxiety inventory

Each question in this section consists of a group of four statements. Please read each group of statements carefully and then select the one which best describes your feelings, over the past six months. Identify the statement by ringing the letter next to it, i.e. if you think that statement (a) is correct, ring statement (a); it may be that more than one statement applies, in which case, please ring any that are applicable.

1. (a) I do not worry about my health.
(b) I occasionally worry about my health.
(c) I spend much of my time worrying about my health.
(d) I spend most of my time worrying about my health.

2. (a) I notice aches}pains less than most other people (of my age).
(b) I notice aches}pains as much as most other people (of my age).
(c) I notice aches}pains more than most other people (of my age).
(d) I am aware of aches}pains in my body all the time.

3. (a) As a rule I am not aware of bodily sensations or changes.
(b) Sometimes I am aware of bodily sensations or changes.
(c) I am often aware of bodily sensations or changes.
(d) I am constantly aware of bodily sensations or changes.

4. (a) Resisting thoughts of illness is never a problem.
(b) Most of the time I can resist thoughts of illness.
(c) I try to resist thoughts of illness but am often unable to do so.
(d) Thoughts of illness are so strong that I no longer even try to resist them.

5. (a) As a rule I am not afraid that I have a serious illness.
(b) I am sometimes afraid that I have a serious illness.
(c) I am often afraid that I have a serious illness.
(d) I am always afraid that I have a serious illness.

6. (a) I do not have images (mental pictures) of myself being ill.
(b) I occasionally have images of myself being ill.
(c) I frequently have images of myself being ill.
(d) I constantly have images of myself being ill.

7. (a) I do not have any difficulty taking my mind off thoughts about my health.
(b) I sometimes have difficulty taking my mind off thoughts about my health.

(c) I often have difficulty in taking my mind off thoughts about my health.

(d) Nothing can take my mind off thoughts about my health.

8. (a) I am lastingly relieved if my doctor tells me there is nothing wrong.

(b) I am initially relieved but the worries sometimes return later.

(c) I am initially relieved but the worries always return later.

(d) I am not relieved if my doctor tells me there is nothing wrong.

9. (a) If I hear about an illness I never think I have it myself.

(b) If I hear about an illness I sometimes think I have it myself.

(c) If I hear about an illness I often think I have it myself.

(d) If I hear about an illness I always think I have it myself.

10. (a) If I have a bodily sensation or change I rarely wonder what it means.

(b) If I have a bodily sensation or change I often wonder what it means.

(c) If I have a bodily sensation or change I always wonder what it means.

(d) If I have a bodily sensation or change I must know what it means.

11. (a) I usually feel at very low risk for developing a serious illness.

(b) I usually feel at fairly low risk for developing a serious illness.

(c) I usually feel at moderate risk for developing a serious illness.

(d) I usually feel at high risk for developing a serious illness.

12. (a) I never think I have a serious illness.

(b) I sometimes think I have a serious illness.

(c) I often think I have a serious illness.

(d) I usually think that I am seriously ill.

13. (a) If I notice an unexplained bodily sensation I don't find it difficult to think about other things.

(b) If I notice an unexplained bodily sensation I sometimes find it difficult to think about other things.

(c) If I notice an unexplained bodily sensation I often find it difficult to think about other things.

(d) If I notice an unexplained bodily sensation I always find it difficult to think about other things.

14. (a) My family} friends would say I do not worry enough about my health.

(b) My family} friends would say I have a normal attitude to my health.

(c) My family} friends would say I worry too much about my health.

(d) My family} friends would say I am a hypochondriac.

For the following questions, please think about what it might be like if you had a serious illness (COVID-19). You cannot know for definite what it would be like; please give your best estimate of what you think might happen, basing your estimate on what you know about yourself and serious illness in general.

15. (a) If I had a serious illness I would still be able to enjoy things in my life quite a lot.

(b) If I had a serious illness I would still be able to enjoy things in my life a little.

(c) If I had a serious illness I would be almost completely unable to enjoy things in my life.

(d) If I had a serious illness I would be completely unable to enjoy life at all.

16. (a) If I developed a serious illness there is a good chance that modern medicine would be able to cure me.

(b) If I developed a serious illness there is a moderate chance that modern medicine would be able to cure me.

(c) If I developed a serious illness there is a very small chance that modern medicine would be able to cure me.

(d) If I developed a serious illness there is no chance that modern medicine would be able to cure me.

17. (a) A serious illness would ruin some aspects of my life.

(b) A serious illness would ruin many aspects of my life.

(c) A serious illness would ruin almost every aspect of my life.

(d) A serious illness would ruin every aspect of my life.

18. (a) If I had a serious illness I would not feel that I had lost my dignity.

(b) If I had a serious illness I would feel that I had lost a little of my dignity.

(c) If I had a serious illness I would feel that I had lost quite a lot of my dignity.

(d) If I had a serious illness I would feel that I had totally lost my dignity.

SECTION C

STRESS

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

ITEMS	NEVER	ALMOST	SOMETIMES	FAIRLY OFTEN	VERY OFTEN
In the last month, how often have you been upset because of something that happened unexpectedly?					
In the last month, how often have you felt that you were unable to control the important things in your life?					
In the last month, how often have you felt nervous and "stressed"?					
In the last month, how often have you felt confident about your ability to handle your personal problems?					
In the last month, how often have you felt that things were going your way?					
. In the last month, how often have you found that you could not cope with all the things that you had to do?					
In the last month, how often have you been able to					

control irritations in your life?					
In the last month, how often have you felt that you were on top of things?					
In the last month, how often have you been angered because of things that were outside of your control?					
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

SECTION D

Coping

The following questions ask how you have sought to cope with hardship in your life. Read the statements and indicate how much you have been using each coping style.

Items	**I haven't been doing this at all**	**A little bit**	**A medium amount**	**I've been doing this a lot**
1. I've been turning to work or other activities to take my mind off things.				
2. I've been concentrating my efforts on doing something about the situation I'm in.				
3. I've been saying to myself "this isn't real.".				
4. I've been using alcohol or other drugs to make myself feel better.				
5. I've been getting emotional support from others.				
6. I've been giving up trying to deal with it.				
7. I've been taking action to try to make the situation better.				
8. I've been refusing to believe that it has happened.				
9. I've been saying things to let my unpleasant feelings escape.				
10. I've been getting help and advice from other people.				
11. I've been using alcohol or other drugs to help me get through it.				
12. I've been trying to see it in a different light, to make it seem more positive.				
13. I've been criticizing myself.				

14. I've been trying to come up with a strategy about what to do.				
15. I've been getting comfort and understanding from someone.				
16. I've been giving up the attempt to cope.				
17. I've been looking for something good in what is happening.				
18. I've been making jokes about it.				
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.				
20. I've been accepting the reality of the fact that it has happened.				
21. I've been expressing my negative feelings.				
22. I've been trying to find comfort in my religion or spiritual beliefs.				
23. I've been trying to get advice or help from other people about what to do.				
24. I've been learning to live with it.				
25. I've been thinking hard about what steps to take.				
26. I've been blaming myself for things that happened.				
27. I've been praying or meditating.				
28. I've been making fun of the situation.				

APPENDIX B

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF GUIDANCE AND COUNSELLING

Telephone: 0332091854
Email: dgc@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: DGC/L.2/VOL.1/143
Your Ref:

December 16, 2020

TO WHOM IT MAY CONCERN

LETTER OF INTRODUCTION

We introduce to you, Bridgette Baaba Nzima-Mensah a student pursuing an M.Phil. Programme in Guidance and Counselling at the Department of Guidance and Counselling of the University of Cape Coast. As a requirement, she is to submit a Thesis on the topic: ***"Health Anxiety, Stress and Coping During the Covid-19 Pandemic Among Healthcare Professionals in Selected Hospitals in the Cape Coast Metropolis".*** We are by this letter affirming that, the information she will obtain from your Institution will be solely used for academic purposes.

We would be most grateful if you could provide her the necessary assistance.

Thank you.

Dr. Stephen Doh Fia
HEAD OF DEPARTMENT

APPENDIX C

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc.edu/v5/21-22

Date: 30th March, 2021

Your Ref: .....

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Bridgette B. Nzema-Mensah, Reg. No. ..... is an M.Phil. / Ph.D. student in the Department of Guidance and Counselling in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. ~~He~~/ She wishes to undertake a research study on the topic:

Health anxiety, stress and coping during the Covid-19 Pandemic among healthcare professionals in selected hospitals in the Cape Coast Metropolis.

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed ~~his~~/her proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence ~~his~~/her study. The ERB would be grateful if you would give ~~him~~/her the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)

Chairman, CES-ERB
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Vice-Chairman, CES-ERB
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