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ADHERENCE TO COVID-19 PROTOCOLS: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE HOSPITALS IN GHANA

BY

MOHAMMED AMIN ISSAH

(10804878)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PHILOSOPHY (HEALTH SERVICE MANAGEMENT) DEGREE.

DEPARTMENT OF PUBLIC ADMINISTRATION AND HEALTH SERVICE MANAGEMENT

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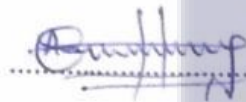
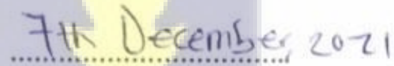
DECLARATION

I declare that the research titled "Adherence to COVID-19 protocols: a comparative study of public and private hospitals in Ghana" submitted to the University of Ghana is the result of my efforts, with the exception of references to other people's work that have been acknowledged and cited. This thesis is submitted in partial fulfilment of the requirements of the Masters of Philosophy in Health Services Management degree requirement. This thesis' findings have not been submitted for the award of a degree in any other university.

MOHAMMED AMIN ISSAH **DATE**

(10804878)

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CERTIFICATION

We certify this thesis was supervised under procedures laid down by the University.

.... 16/11/2021

DR. ROGER A. ATINGA **DATE**

(SUPERVISOR)

.... 16/11/21

DR. ANITA BAKU **DATE**

(CO-SUPERVISOR)

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DEDICATION

This thesis is in honor of my mother, Hajia Suweiba, without whose effort I would not have been where I am now, and to my father, Alhaji Issah Seidu, who insisted I proceed with the program. The thesis is also dedicated to my brother from another mother, Mr. Mashud Kofi Mohammed for his unflinching support towards the journey of my program. Allah continues to bless them all.

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LIST OF ABBREVIATIONS

PPE	Personal Protective Equipment
WHO	World Health Organization
GHS	Ghana Health Service
GSS	Ghana Statistical Service
CDC	Centers for Disease Control and Prevention
GARH	Greater Accra Regional Hospital
NMC	Nyaho Medical Center
U.S	United States
SARS	Severe Acute Respiratory Syndrome
JAMA	Journal of the American Medical Association
HBM	Health Belief Model
GSS	Ghana Statistical Service
OPD	Outpatient Department
GHS-ERC	Ghana Health Service Ethics Review Committee

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ABSTRACT

In hospitals around the world, the high incidence of reported infection of COVID-19 is attributed to lack of Personal Protective Equipment (PPE's), insufficient knowledge of already defined guidelines, and inability to adhere to the safety protocols at the workplace. Adherence to COVID-19 protocols is influenced by several dimensions dependent on the health facilities. As there is wide variation in factors associated with adherence to protocols, it is likely that adherence levels also vary between public and private facilities. The objective of the research was to comparatively examine how public and private hospitals adhere to COVID-19 safety protocols and factors associated with adherence in Ghana. A case study design, using the mixed-method approach was employed. Quantitatively, 283 staff of public and private hospitals were sampled whereas 5 respondents were interviewed. Data were analyzed using frequencies, independent t-test analysis to compare the level of adherence between public and private hospitals, and a logistic regression model to identify the factors associated with COVID-19 adherence to protocols. The logistic regression analysis established that the main factors that influenced adherence to COVID-19 protocols in public and private hospitals were: training of staff on adherence in public (OR=2.08; $p < 0.01$) and private (OR=1.44; $p < 0.05$) hospitals, and knowledge on adherence in public (OR=3.12; $p < 0.01$) and private (OR=11.45; $p < 0.01$) hospitals. Adherence to protocols significantly varied between public and private hospitals ($0.001 > p < 0.05$) with an effect size ranging from small to large. The study findings indicate that public hospitals adhered more to the COVID-19 protocols than private hospitals. The study recommends concerted efforts from government and stakeholders to assist private hospitals with health equipment and PPEs to aid them in the fight against the virus and any other infectious disease.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

The research's introduction, and a background overview of the research, are presented in this chapter. The chapter also includes the problem statement, the research questions and objectives, scope, and relevance, and key definitions of the study.

1.1 Background of the Study

The coronavirus disease (COVID-19) has gotten a lot of attention around the world, and still spreading and posing a severe human hazard (World Health Organization, 2020b). The "killing virus" offers health workers and the general public feeling fearful and anxious about their long-term plans due to an absence of evidence of immunizations and viable cures for afflicted persons (Saglietto et al., 2020). Ghana is no exception since the country has been hit by the pandemic and recorded several infections and deaths in recent times.

Approximately 5 months have passed since the COVID-19 incident was discovered in China, Ghana's first two COVID-19 cases were discovered. They were both brought in by tourists with proven COVID-19 infections (Dzisi & Dei, 2020; Ministry of Health, 2020). Depending on the number of people who have left China, Ghana was then categorized as an African country with a moderate import risk (Gilbert et al., 2020). First confirmed cases were announced with the state's declaration of the national response plan to combat the virus's potential spread had allocated 100 million cedis to its management. Closure of all national borders and a restriction of large meetings including church gatherings and burials was enacted to slow the spread of the virus (Dzisi & Dei, 2020).

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Individual personal hygiene was encouraged by the government, including frequent hand washing, social distancing, and staying at home, avoidance of public gatherings, and following up with information on COVID-19 from reliable sources. Partially locked down for two weeks was instituted, with twenty-one days added afterward. The government also imposed travel restrictions inside and between towns, including Ghana's two largest cities, Accra and Kumasi.

COVID-19 has been declared an outbreak by the WHO since March 2020, and authorities in charge of public safety on a global platform have suggested many strategies to minimize the spread of the COVID-19. A few countries in Europe, the U.S, and Canada, implemented virus control strategies varying from the complete quarantine of an entire country's population to transmission prevention through various degrees of physical distance between individuals combined with strict personal hygiene (Coroiu et al., 2020).

For countries that support mitigation conditions,' social distancing steps, such as limiting travel, restricting social contact outside one's houses, in pubs, are the key techniques employed to prevent the overburdening of systems of health by minimizing the height of transmission at the population level (Anderson, Heesterbeek, Klinkenberg, & Hollingsworth, 2020). For persons who may be at significant risk of spreading the disease, including the elderly and those with well before medical conditions, more strict measures, such as complete containment and isolation, were advocated (Team et al., 2020).

Major hurdles to adherence to protective measures were identified by Coroiu, Moran, Campbell, and Geller (2020) included feeling anxious, being alone and, directly interacting to avoid isolation, wanting to buy groceries for relatives, not capable of functioning from anywhere, after seeing many people on the streets. Challenges that dispel false beliefs and/or conspiracies' beliefs, such

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as the virus's inability to spread, the authorities inflating the epidemic's effect, being not successful in preventing viral spread, and "allowing the disease to happen spontaneously" until a person is suffering and symptoms are showing.

Adherence to safety procedures for the health of employees in the workplace is a critical element of organizational health. Violations of workplace protection rules have led to almost a million places of work mishaps worldwide, the vast majority among which have occurred in production centers in low-income nations. Despite the importance of occupational health and safety in guaranteeing worker welfare, Ghana cannot issue a single comprehensive national policy on the subject, relying instead on a patchwork of legislative regulations to teach employees about their safety and health (Pan et al., 2020). Contemporary national institutional safety and health policies should include procedures for ensuring the safety and health of employees in an organization, including recognizing and managing dangers, and also continual skills and training of employees on occupational health (Anderson et al., 2020).

The effective utilization of these primary non-medical processes requires good healthcare organization and, most important, effective compliance to guidelines by patients and healthcare workers. “Quarantine does not work if individuals do not follow it,” as stated by Webster et al. (2020). But little-recognized further about elements that may influence the overall public's willingness to adhere to safety regulations (Gernhart, 1999).

The health and safety of health workers and visitors in the health facilities are the highest priority and mutual responsibility of both the health workers and their clients. In decelerating the COVID-19 transmission, hospitals must be committed to improving their physical environment to make their patients and visitors feel secure (Houghton et al., 2020). In Ghana, both public and private health facilities provide health services to contain the spread of the virus. Full adherence to safety

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protocols potentially decreases COVID-19 infections in health facilities. In reaction to the growing number of suspicious and confirmed cases, and in a way to sustain healthcare systems capable of handling as several critical cases as feasible, the management of many hospitals in Ghana has urgently adopted several control measures as instruments for non-pharmaceutical treatments to prevent the spread of the virus. To monitor the adherence to the safety protocols instituted in hospitals, undertake a study to comparatively assess the adherence to the safety protocols of COVID-19 in both private and government healthcare institutions.

Private and government healthcare institutions have a critical role to play locally, nationally, and globally in the fight against COVID-19 in terms of adherence to safety protocols. However, there are differences in adherence to the COVID-19 protocols between public and private hospitals. Due to differences in adherence between facilities, it is doubtful that adherence in public health institutions will be higher than in the private sector. This hypothesis is bolstered by the fact that infection prevention and control were moderately and yet constantly greater in the research study than in similar research of outpatient in Kenya, which showed a negative significant association involving government hospital and adherence, which comprised government, private, and religious-based healthcare facilities (Bedoya, et al., 2017).

1.2 Statement of the Problem

COVID-19's rapid spread poses a great threat to healthcare personnel's safety as they come into infected patients in hospitals. A core component of the health institution's protection is the observance of safety protocols for the safety of healthcare workers and customers in combating COVID-19. Violation of these WHO-recommended safety protocols in hospitals has resulted in several virus infections worldwide, most of which are recorded in low-income countries. In hospitals around the world, the high incidence of reported infection is attributed to lack of Personal

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Protective Equipment (PPE's), insufficient knowledge of already defined guidelines, and inability to adhere to the safety protocols at the workplace.

It's thought that certain public healthcare institutions have reduced their safety precautions in comparison to the initial days of the disease, thus it's important to look into the differences in COVID-19 protocol adherence in public and private hospitals. The equipment and resources for preventing infection are found generally worse in public healthcare spaces than in private healthcare spaces, according to a study conducted in Tanzania to examine the compliance of safety measures in health facilities (Zanzibar's Health Ministry., 2021). Personal hygiene safety measures and practices, for example, were accessible in 90% of religious-based institutions, 82% of private institutions, and just 58% of public institutions. (Bedoya, et al., 2017).

According to research conducted by the Federation of African Medical Physics Organizations (FAMPO, 2020), 56 percent of safety measures were applied in all health facilities (Hasford et al., 2020).

Few studies in Ghana have investigated how adherence to COVID-19 safety protocols differs between public and private health facilities. Previous research explored the attitudes and knowledge of health personnel from two district hospitals about COVID-19 showed that healthcare providers have a positive attitude toward adhering to COVID-19 protocols (Huynh, et al., 2020).

As there is wide variation in factors associated with adherence to protocols, it is likely that adherence levels also vary between public and private facilities. According to studies, public healthcare institutions have a higher level of protocol adherence than private healthcare institutions. Shet, et al., (2011) found, for example, in research that 97% adhere to protocols in public facilities, while 88% in private facilities. Even though the above might mirror Ghanaians'

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public perception, existing research within that field remains unresolved, owing to the scarcity of studies in this field in underdeveloped nations. (Shet, et al., 2011)

Again, managers are in charge of how their organizations are conducted, and public and private sector managers have different attitudes and commitments. Organizational performance is affected by the environment, according to studies regarding how circumstances are managed in a specific setting (Ring & Perry, 1985). Considering this basis for comparison as a starting point for this discussion, an effort to show how COVID-19 management in the public sector differs as compared to that of the private sector.

Whiles studies have found differences in adherence between public and private institutions when the first instances of COVID-19 were reported in Ghana., many stakeholders including the government made donations of PPEs to the health facilities in Ghana most especially to the public hospitals to assist them in the fight against the virus, and also ensured COVID-19 adherence to the protocols, leaving the private healthcare institutions to their own. Hence it is important to examine the differences in adherence between public and private facilities because the structures and processes to ensure adherence are different.

Therefore, a review of the compliance to COVID-19 protocols in both private and public hospitals in Ghana is required. This would enable the study to examine and compare the level of compliance with the COVID-19 safety protocols of health workers between public and private healthcare institutions in Ghana. The study's purpose is to assess the variables that impact variation on COVID-19 protocol adherence in both public and private healthcare settings. This will provide policymakers with information about the situation and risks factors related to variations in COVID-19 protocol adherence.

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1.3 Purpose of the Study

The research's purpose will be to analyze or examine adherence to COVID-19 safety protocols in Ghana's healthcare facilities, and thus to propose, if appropriate, ways to assure best safety practices in healthcare institutions, particularly hospitals, based on the data acquired. The findings of this research may aid health policymakers in identifying specific demographics for COVID-19 preventive promotion, and understanding how to enhance methods of communication targeted at reducing the disease's effect and transmission. The research will also fulfill a requirement for the researcher's master's degree in health service management.

1.4 Research Objectives

1.4.1 General Objective

The overall goal of the study is to comparatively examine how well public and private hospitals adhere to the COVID-19 safety protocols.

1.4.2 Specific Research Objectives

i. To find out what factors are linked to COVID-19.protocols adherence in public and private facilities.

ii. To examine the difference in COVID-19 protocols adherence between public and private facilities.

iii. To determine barriers to COVID-19 protocols adherence in public and private facilities.

1.5 Specific Research Questions

i. What factors are linked to COVID-19 protocols adherence in public and private facilities?

ii. What is the difference in COVID-19 protocols adherence in public and private facilities?

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iii. What are the barriers to COVID-19 protocols adherence in public and private facilities?

1.6 Significance of the Study

Different stakeholders in government, healthcare institutions, and academia will benefit from the study. For this with the government, this research could serve as a springboard for healthcare decision-makers to rethink programs and interventions to combat COVID-19. It will aid in regulating and ensuring that all health personnel follows the safety guidelines. This could inform healthcare practitioners well about standard practices for adhering to healthcare facility protocols. Both the health practitioner and the client will be safe and healthy because of this. The research will also assist academics in developing theories to analyze the effect of adherence to COVID-19 safety protocols in health care institutions. This can offer stakeholders with information about the challenges of COVID-19 adherence to the protocols, and the factors that influence adherence. Journal articles, and other scholarly materials on the impact of compliance with safety protocols in healthcare facilities, will be accessible for academia because of this research.

1.7 Scope of the Study

This research focuses on comparing the adherence level between public and private hospitals. The study employed a case study approach limited to Greater Accra Regional Hospital (GARH) and Nyaho Medical Center (NMC) in the Greater Accra Region with a focus on the both clinical and non-clinical staff of the study hospitals.

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1.8 Operational definitions of key terms

Healthcare Institutions: public and private-owned hospitals settings, whose primary purpose provides health-related services to individuals.

Clinical Staff: Staff whose work directly influences patients' recovery in a hospital.

Non-clinical Staff: staff whose work does not directly influence patients' recovery, but supplements the day-to-day activities of a hospital.

Adherence: how closely a patient or an individual follows medical orders and safety protocols.

COVID-19 protocols: safety precautions implemented to minimize the virus spread.

1.9 Study Outline

The research was structured into five sections; chapter one, chapter two, chapter three, chapter four and chapter five

The first chapter provides synopsis of the research and introduction to COVID-19 protocol adherence. The problem statement, specific research objectives and questions, research scope and significance, and essential definitions are all included in this chapter.

Chapter two discusses the review of literature, and the theoretical and conceptual framework underpinning the study. The chapter presents an overview of the conceptual framework for the research.

Chapter three presents methodologies used to conduct the research are discussed in this chapter. It entails all the processes required in answering the research questions about the stated problem in the following order. Introduction, explanation of a paradigm under which the research is anchored, research approach, design of the study, setting of the study, target population, sampling procedure,

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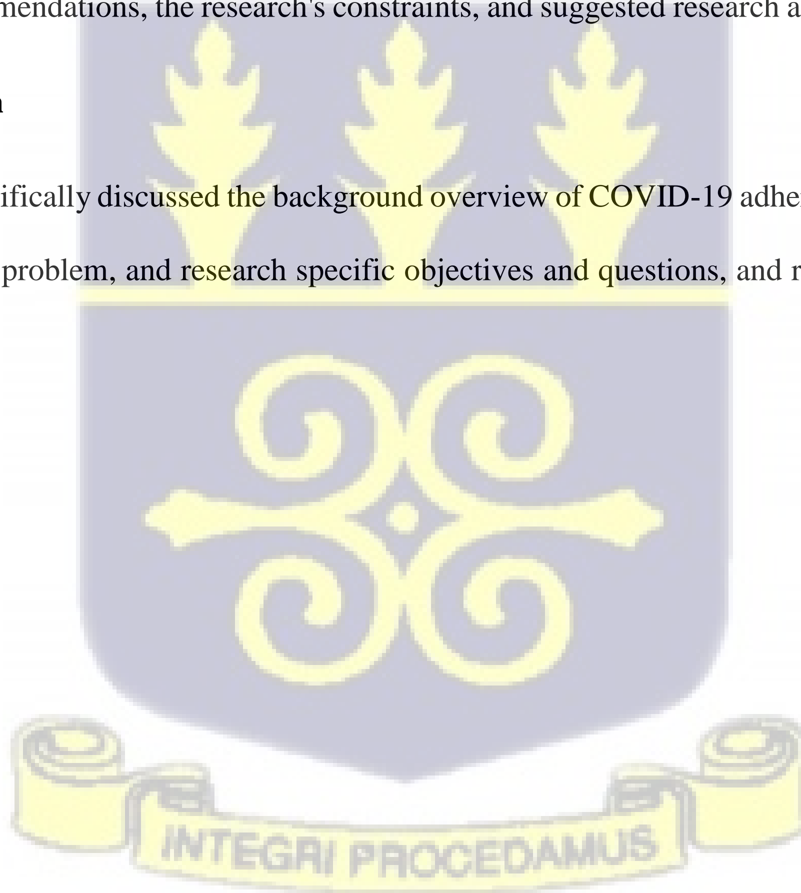
and sample size determination are all included in this chapter. It also includes a data collecting tools, collection of data and procedures for analysis, issues of ethics as well as conclusion.

The research's results are presented in Chapter four. The findings of statistical studies used to assess factors related to COVID-19 adherence to protocols and differences in adherence between public and private facilities are presented in this chapter. The chapter also presents qualitative analyses of barriers to adherence to protocols. The chapter also presents a discussion of findings base on the study objectives.

The fifth chapter outlines the research's main findings drawn based on findings. The chapter also discusses recommendations, the research's constraints, and suggested research areas for the future.

1.10 Conclusion

The chapter specifically discussed the background overview of COVID-19 adherence to protocols, statement of the problem, and research specific objectives and questions, and research scope and significance.



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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The review of literature, the theoretical and the framework underpinning for the study, are included in this section. It begins with an overview of the past historical overview of previous pandemic and the overview of COVID-19 and varied definitions. The chapter proceeds with a lecture on the rate of COVD-19 spread globally and the epidemiology of the spread of the virus in Ghana, and the transmission trajectory of the virus. Again, there is a presentation on the covid-19 recommended safety protocols, factors connected to COVID-19 safety protocols, defining adherence in the scope of COVID-19 safety guidelines. The chapter also highlights interventions to improve attitudes and/or COVID-19 protocol adherence and also the influence of COVID- 19 information on adherence. Next is a presentation on the Health Belief Model, and Authentic Leadership theory, and empirical review on the variables of the conceptual framework on the study and adherence to covid-19 safety protocols in health institutions.

2.1 Historical Overview of Previous Pandemics Safety Protocols

Before the breakout of the Coronavirus in 2019, several disease outbreaks may be traced back in history. Pandemics, such as the influenza epidemic of 1918. However, in more recent times, the Zika virus outbreak in South and Central America between 2015 and 2016, the SARS pandemic from 2002 to 2003, and also the pandemic of the Ebola virus in West Africa from 2014 to 2016 are all instances. An outbreak of diseases has been no longer just a problem of public health or clinical diagnostics; they are a problem of societal development and international security. Non-pharmaceutical control measures that were the most effective were those that involved social

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distance, such as halting public meetings, shutting religious buildings, bars, schools, even eateries, confining sick people, and isolating those who interacted with the affected persons. By taking these precautions early, people will avoid straining their healthcare systems while lowering the slope of the pandemic, which indicates a steady upsurge instead of a huge high prevalence in one go. In 2007, a study published in JAMA, Howard Markel of the University of Michigan Medical School's Center for the History of Medicine and others looked at the increased mortality from influenza in the U.S in 1918. Even though most cities in the U.S employed interventions to regulate the behavior of people, the timing, length, and variety of strategies used all affected their performance. Researchers found a correlation between timely, consistent, or phased response deployment and minimizing the consequences of the 1918 flu outbreak in the U.S (Castillo-Chavez, et al., 2015).

Non-pharmaceutical control measures that were the most effective were those that involved social distance, such as public meetings were canceled, schools, bars, and eateries were closed, the infected were isolated, and those who comes in contact with them were quarantined. People can prevent straining their systems healthcare and leveling the curve of the outbreak through adopting these measures immediately, which implies there would be a steady rising prevalence instead of a high prevalence at once, through following proper steps. Although individuals diagnosed with SARS can spend 2 - 3 weeks of becoming unwell enough to necessitate emergency treatment, this wait is crucial since desire could spike rapidly. In a preliminary publication, Lipsitch with his co-researchers assessed the timeline of preventive actions of COVID-19 and population growth in China in 2020. Wuhan implemented measures including such severe social distancing and isolating afflicted person's interactions six weeks after continuous regional spread was found, but Guangzhou accomplished so a week. Per the investigators, Guangzhou experienced "less outbreak incidence and spikes" compared to Wuhan during the first phase of the pandemic because of earlier

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preventive measures compared to the virus's trajectory in the populace (Castillo-Chavez, et al., 2015).

Furthermore, one of the reasons SARS was eradicated from the population was due to aggressive public health measures, and approximately eight thousand incidents were identified, with an overall fatality rate of eleven percent. However, it has been a little over 5 years since the Ebola hemorrhagic fever was officially confirmed in West Africa, and non-pharmaceutical control measures such as quarantine and other safety measures were taken to contain the virus's spread. During the SARS outbreak, one concern was that the Chinese government actively disputed the disease's existence for several months. People instead depended on texts and speculations about a potentially communicable disease to keep them informed. For example, it has been a little over 5 years since Ebola hemorrhagic fever was officially confirmed, and non-pharmaceutical control measures such as quarantine and other safety measures were taken to contain the virus's spread (Castillo-Chavez, et al., 2015).

For centuries, quarantine is being adopted to restrict the import, transmission, and outbreak of viruses. The SARS outbreak that afflicted numerous nations in 2002 offers a framework for confinement. During the Ebola crisis in 2014, numerous key findings emerged as leading concepts in the discourse of quarantine based on an examination of protocols utilized during the SARS outbreak. Over 8000 cases and 774 deaths were reported because of the SARS outbreak. Both diseases are only deemed transmissible if a person develops symptoms. SARS spreads through droplets, as opposed to Ebola, which spreads through blood and other fluids. While those changes can have a substantial impact on transmission rates and the selection of suitable personal protective equipment (PPE), the theory underlying determining suitable, evidence-based quarantine

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applications is comparable. The rationalization and calculated effect of isolating infected persons for the prevention of diseases; the potential risks which may expand the spread of the virus; as well as the potential adverse consequences linked with unwarranted or unrestricted privacy rights limitations are few instances (Barbisch, Koenig, & Shih, 2015).

2.2 Overview of the COVID-19 Pandemic

COVID-19 is a recent respiratory infection attributed to anything from a simple fever to SARS. The virus has been shown to disperse by droplets and direct contact from person to person. Three individuals with pneumonia linked toward a clustering of respiratory distress incidents around Wuhan were found to have a novel coronavirus.in December 2019 (Lai, Shih, Ko, Tang, & Hsueh, 2020). The outbreak of COVID-19, however, was announced the sixth health crisis of global importance according to World Health Organization on January 30, 2020. As a result of the international transmission of disease, this outbreak poses a public health threat and necessitates an international response. Increased internet use is linked to increased sharing of knowledge about COVID-19 recognition from all over the world and across disciplines (Daga, Kumar, Aarthi, Garg, & Rohatgi, 2019). While people are being vaccinated with COVID-19 vaccines all over the world, there is no proven cure for COVID-19. Many infected seldom show any signs or symptoms. The disease also spreads quickly and kills patients at a much higher rate than the common flu. A patient with COVID-19 may have a few different treatment options. Hence, individuals must take preventative steps to avoid contracting the virus due to a lack of testing and treatment options by adhering to the COVID-19 approved safety protocols (Al-Hasan, Yim, & Khuntia, 2020)

COVID-19 has yet to be cured by a particular drug approved by the WHO. The easiest way to avoid infection is to follow safety protocols to avoid exposure to the virus. The community's

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understanding and application of the prevention and case detection activities suggested either by the Centers for Disease Control and Prevention or the WHO are crucial (World Health Organization, 2020)

2.3 The Global Spread Rate of COVID-19

The outbreak of the virus has expanded rapidly since its first appearance, affecting people at an alarmingly rapid pace (Pennycooket al., 2020). COVID-19 had spread to 216 jurisdictions around the world as of July 28, 2020, and around 16.34 million cases with 0.65 million deaths reported. Several of the top three territories with the most infections in the United States with about 4.20 million infected persons and 0.14 million deaths. Infected people numbered 2.41 million in Brazil, with Eighty-Seven thousand and four deaths reported, whereas one and half a million incidences were reported in India with over 33,000 lives lost (WHO, 2020)

According to the experts, the COVID-19 is spreading at a very rapid cognition due to its rapid rate of multiplication (R0). An R0 value higher than just one implies increased virus transmission. This R0 is described as the amount of reinfection generated by an infected individual. The estimated R0 of COVID-19 is expected at 3.3, suggesting that the virus will keep spreading at a higher pace. The R0 seems to be a characteristic of individual "social engagement" and therefore it depends on the number of hours spent with certain other individuals, according to the researchers, aside from disease elements (biological, environmental, etc.) (Delamater et al., 2019). To avoid the spread of the pandemic, researchers examining the association involving R0 and also the physical affection factor have recommended that perhaps the manner a person comes into contact with other individuals be regulated (Thu, Ngoc, & Hai, 2020).

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2.4 COVID-19 Epidemiology in Ghana

The virus has been identified as a novel coronavirus which relates to Nidovirales order's coronaviridae group (Banerjee et al., 2019). The COVID-19 is a form of communicable disease that spreads through person-to-person contact. Geographical distance plays a significant role in its distribution. The disease had been detected in most of Ghana's bordering nations until it was discovered in the country. Ghana recorded the first cases of the virus within the second week of March 2020. The following week, the reported incidents had escalated about 200 percent, and therefore by March 21, 2020, there were 21 recorded incidents, including one dead (Ghana Health Service, 2020). It had gone to a 300% increase in much less than a week. Considering that 21 incidents were detected within only 7 days, several medical professionals including experts expected that the rate of infection would be parabolic in the coming weeks.

Unfortunately, the virus already expanded to the municipal level by 20th March 2020, since the most current infections had been discovered in the country. The Ghana Health Service and the Ministry of Health organized contact tracing groups to trace up people with the virus, and 300 persons were found. Health authorities had undertaken various strategies to minimize the pandemic from growing because it was believed to be breathable. According to the latest information, Ghana had recorded over 61,000 incidences including over 220 deaths as of December 2020 (Bukari, et al., 2021).

2.5 Transmission Trajectory of the COVID-19

The infectivity of COVID-19 is high. COVID-19 is spread in two ways: directly and indirectly. The direct model includes various fluids and discharges such as faeces, saliva, urine, sperm, and tears, and mother-to-child transmissions. The virus is thought to spread primarily through droplets

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in the air released by infected people talking, coughing, or sneezing. Transmission is more likely whenever an infected individual is in a meter range of a vulnerable patient. A smaller percentage of infected individuals spread the virus through sites other than just the respiratory tract. Although there is a low risk of transmission by pathways besides the respiratory system, nevertheless it is still possible for transmission. Fungus spores and objects such as furniture and fixtures in an infected patient's physical surroundings, and also anything used on an infected individual, could all cause indirect transmission. Many of these modes could be neglected, leading to increased emergence and spread. Reduced socialization, decontamination of everyday items, including effective personal hygiene such as frequent handwashing, appropriate coughing and sneezing methods, and frequent use of nose masks are all important to prevent the diseases from spreading. The impact of social distance in preventing the disease's dissemination cannot be underscored. The COVID-19 has a significant impact on healthcare procedures. To limit any risk of infection, healthcare practitioners must wear PPEs. The understanding of the COVID-19 has still been developing, and more studies need to be done to assess possible additional transmission mechanisms (Karia, Gupta, Khandait, Yadav, & Yadav, 2020).

2.6 COVID-19 Safety Protocols to Prevent Transmission

The globe was surprised when the COVID-19 pandemic broke out unexpectedly in early 2020, and the world is waiting for an effective vaccine to be implemented. Meanwhile, countries' primary tools for combating the virus's viral spread are therapeutic strategies (Ferguson et al., 2020). To attain this goal, the World Health Organization has urged the deployment of principally two types of viral prevention measures (WHO, 2020). Physical distancing protocols, also known as social distancing protocols, include shutdowns, quarantine, and isolation are methods used to reduce social engagement. The second behavioral approach recommended is to improve the reliability

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and the regularity with which sanitary actions are performed such as instituting effective handwashing policies and systems for disinfection. Several countries have adopted these two behavioral techniques around the globe in their attempts to reduce infectious transmission and the number of people killed by the virus (Dalton et al., 2020).

Governments, Ghana not being an exception, have used policy directives and recommendations to implement social distancing. Government oversights to influence people to social distancing and sheltering must grapple with citizens' ability to conform or adhere to disease prevention and mitigation guidelines. Another example is resident compliance with the requirement to wear masks in public as a COVID-19 prevention measure. Citizens' compliance with the COVID-19–relevant social distancing policy and public masking varies significantly across countries. In several nations, the paradox of people believing that the guidelines are useful but not adopting them is a contentious question. A potential explanation for citizens' varying levels of adherence to policy guidelines is a confluence of insightful and social power that is not well known in practice or by academics (Al-Hasan, Yim, & Khuntia, 2020).

2.7 Defining Adherence in the Context of COVID-19 Protocols

Adherence refers to how closely a patient or an individual follows medical orders and safety protocols. Individuals who do not stick to recommended medication regimens may have a higher mortality and morbidity risk as their illness progresses untreated (Centers for Disease Control and Prevention, 2013). Non-compliance with medical professionals' specific advice, guidance and safety protocols is a roadblock to successful medical treatment and risk of infection (Mugavero, Norton, & Saag, 2011). According to the foregoing section, researchers have discussed the role of social distancing as well as other precautions in curtailing COVID-19 spread, and personal distancing including the face masks appear to be the principal line of protection in combating and

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managing the spread of COVID-19 (Wilder-Smith, Bar-Yam, & Fisher, 2020; Milne & Xie, 2020). To get citizens to follow the COVID-19 safety protocols scheme, authorities are using a variety of strategies, including both motivation and coercion.

To get citizens to follow the COVID-19 safety protocols scheme, authorities are using a variety of strategies, including both motivation and coercion. Although numerous decision-makers have urged the general population to stay away from large gatherings or meetings and assist in decelerating the transmission of the disease, keeping a safe distance, and wearing nose masks, many people seem to be following this advice and failing to follow the COVID-19 safety protocols program (Milne & Xie, 2020). The general public's failure to adhere to the safety protocols policy during the COVID-19 pandemic crisis is strange. In addition, it is important to investigate human psychological variables that may help with compliance with safety protocols behavior among individuals, resulting in the effectiveness of the safety protocol strategy as well as preventing the worldwide pandemic from spreading (Pennycooket al., 2020).

2.8 Factors Influencing Adherence to COVID-19 Protocols in Healthcare Facilities

Demographic and Social Variables

According to the study, age, sex or gender, were studied variables linked to COVID-19 19 adherence or attitudes towards safety protocols. In a study conducted by Carlucci, D'Ambrosio, and Balsamo (2020), differences in socio-demographic variables suggested that females were more inclined than males to participate in precautionary behaviors and adhere to the safety protocols. Women are more likely to be cautious about preventive practices, which may explain why in Italy there are gender variations in susceptibility to the coronavirus. (Guan et al., 2020; Wenham et al., 2020). Another study indicated that social characteristics such as culture, education, family status,

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and employment have been associated with personal quarantine procedures amid large outbreaks (Bish & Michie, 2010; Brooks et al., 2020).

Again, living in an urban area was linked to lower adherence to the safety protocols, according to the report. However, adhering to the protocols had little to do with the education of the people. Increased compliance with WHO-recommended hygienic standards was also related to a more risk-averse outlook and altruistic attitude. Conscientiousness and extroversion were found to be significantly correlated with protocol adherence among the personality traits studied, with extroverts reporting lower adherence and those reporting higher conscientious traits reporting higher adherence to the safety protocols (Carlucci, D'Ambrosio, & Balsamo, 2020).

Fear of Transmission and Infection

In addition, the analysis found there was a connection between voluntary social distancing and greater adherence to social distancing protocols. Fear of being infected with the coronavirus was linked to increased COVID-19 protocol adherence. Fear of spreading the virus to others was associated with protocol adherence, and higher anxiety of spreading the infection to everyone else was associated with or being linked to lower protocol adherence. Fear of infection was linked to more hygienic activity (Ebrahimi, Hoffart, & Johnson, 2020).

Knowledge and understanding of risk through timely and high-quality information

The most commonly identified factors affecting adherence to safety protocols according to a recent review by Webster et al. (2020) are social standards; the relative advantage of quarantine; degrees of awareness about the illness epidemic and safety measures; disease threat; and the practicalities of being quarantined. Participants in a study of patients confined during the SARS outbreak (2003) showed exceptionally high levels of adherence, with them all following quarantine protocols (Cavaet al., 2005). Effective knowledge transmission is critical to risk communication, and

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improved information can help people comprehend why quarantine measures are necessary (Reynolds et al., 2008). When people properly understood the rationale for quarantine during the 2003 SARS pandemic in Canada, for example, adherence was higher (Reynolds et al., 2008). This is in accord with Webster et al. (2020), who claim that persons who believe quarantine is useful and disease outbreaks are risky (in terms of disease transmission/severity) are more inclined to follow it. Those who believe the pandemic is not severe are less inclined to comply. According to a recent Lancet assessment about the COVID-19 quarantine effect on the minds of individuals, the public should be informed to comprehend the situation and the grounds for quarantine (Brooks et al., 2020). Poor public health information and unclear guidelines about what to do in certain situations can lead to anxiety and misunderstanding about the purpose of adherence to safety protocols, all of which can reduce adherence rates (Brooks et al., 2020).

Increase a sense of collective responsibility

Interpersonal empathy is proven to be the primary source of a sense of duty (Harper et al., 2020), and altruism may be fostered and maintained by empathy (Brooks et al., 2020). Empathy for people most vulnerable to the coronavirus is a key motivational factor for physical distancing, according to Pfattheicher et al. (2020), and it's utilized to promote greater adherence in hospitals. The researchers concluded that informative materials filled with emotional meaning should build a shared feeling of benevolence, empathy, and solidarity among the healthcare workers. According to a recent review (Brooks et al., 2020), regular reminders by public health experts on the benefits of adherence to the safety protocols to the wider community in healthcare settings as an altruistic decision can be advantageous. For example, public health messages emphasizing duties and responsibilities toward family, friends, and fellow citizens who visit the hospitals could aid in the

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formation of positive "social emotions" and be a viable strategy for reducing the spread of Covid-19 (Everett et al., 2020).

2.8.1 Barriers in Adherence to COVID-19 Protocols in Healthcare Facilities

Perceived Barriers and Conspiratorial Beliefs

Looking worried while alone, interacting to prevent boredom, trying to conduct activities with relatives, not working from home, but seeing many people on the roads in one's neighborhood have all been indicated as critical obstacles to physical distancing. Notably, misconceived notions and/or conspiratorial beliefs including the incapability to spread the disease before becoming severely ill or experiencing symptoms, the state overstating the disease repercussions, physical separation failing to prevent virus transmission, or "letting the virus run its course" are all examples of misconceptions and/or conspiratorial beliefs (Coroiu, Moran, Campbell, & Geller, 2020).

Lack of space and a shortage of front-line workers

The biggest hurdles to the efficient performance of healthcare strategies regarding COVID-19 preparedness and response, according to Sidamo, et al., (2021), are a shortage of frontline staff and underprepared and poorly trained frontline personnel. Shortage of healthcare employees makes ordinary healthcare delivery even more difficult. Because the bulk of health professionals at the health institution were focused on COVID-19 prevention and control. Insufficient space to segregate patients and lack of convenient access to handwashing facilities were noted as impediments to COVID-19 adherence to safety standards according to Houghton et al. (2020) in medical centers. To reduce infection in healthcare institutions, practical steps such as limiting congestion, quickly tracking infected patients, and restricting visitation were critical.

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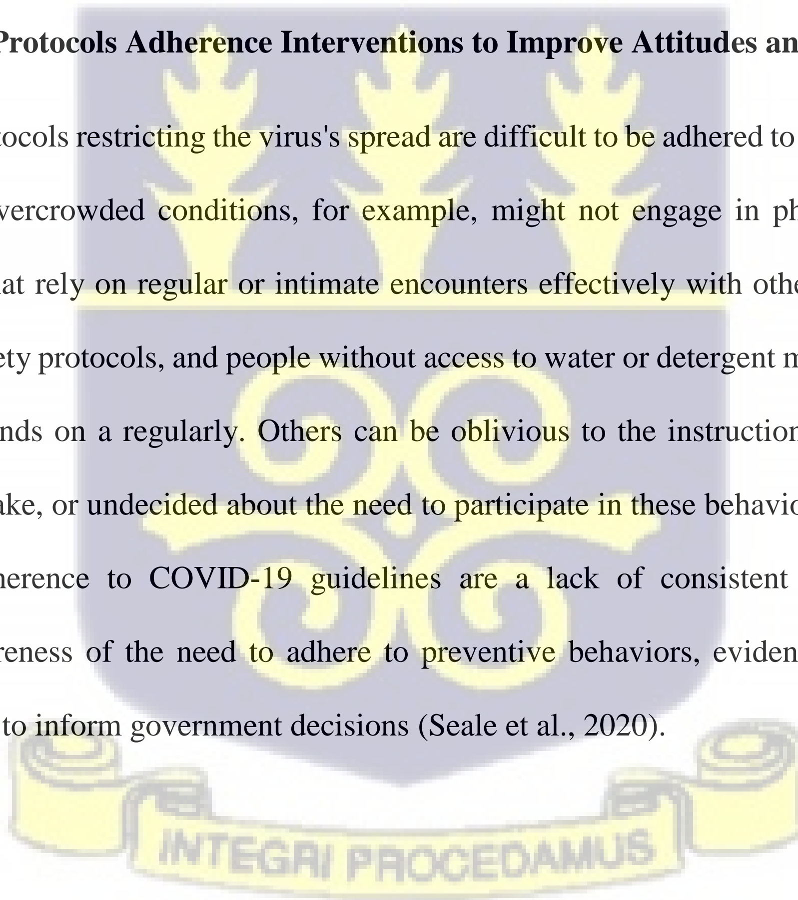
Insufficient Essential Supplies and Equipment

Appropriate and substantial equipment and materials, including personal protective equipment (PPE), must properly conduct significant public health steps to manage and mitigate a potential COVID-19 outbreak. The lack of materials and equipment puts front-line employees' lives in jeopardy and jeopardizes the effectiveness of important public health interventions (Sidamo, et al., 2021). Lack of and low-quality PPE was noted as a severe concern for healthcare workers and managers according to a study by Houghton, et al., (2020). As infection outbreaks continue, supply levels must be modified. PPE was unsettling for healthcare staff, and several patients reported feeling alienated and scared while wearing it.

2.9 COVID-19 Protocols Adherence Interventions to Improve Attitudes and/or Adherence



These safety protocols restricting the virus's spread are difficult to be adhered to by all. Individuals who reside in overcrowded conditions, for example, might not engage in physical distancing, whereas those that rely on regular or intimate encounters effectively with other people may not adhere to the safety protocols, and people without access to water or detergent may find it difficult to clean their hands on a regularly. Others can be oblivious to the instructions, ignorant of the simple steps to take, or undecided about the need to participate in these behaviors. Where the key obstacles to adherence to COVID-19 guidelines are a lack of consistent messaging or an insufficient awareness of the need to adhere to preventive behaviors, evidence from objective studies will help to inform government decisions (Seale et al., 2020).

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2.10 THEORIES UNDERLYING THE STUDY

2.10.1 Health Belief Model (HBM) - 1974

In 1974, Irwin Rosenstock created the HBM, and it is part of the first and most well-known health-promotion models. A study of people's reasons for seeking or declining tuberculosis x-ray scans influenced it. Per the approach, each person has different personal anecdotes and qualities that might affect their actions and results. (Pender, 1996). Individual interest in wellbeing can be improved by using the behavior-specific intelligence variables, which have motivation characteristics. Adherence may make use of these behavior variables. The desired behavioral outcome is shaped by health-promoting behaviors. Throughout all stages of growth, behavior can promote a higher quality of life by improving functional abilities and health.

In this fundamental model, Rosenstock (1974) begins with the premise that adherence is influenced by the **beliefs and assumptions** people hold. Rosenstock, (1974) outlined how certain **beliefs and assumptions** influence how people act in health-promoting ways in given situations. Beliefs are what people keep as "real" and are gained from their life experiences. They are beliefs with an impact on how people think, feel, and behave. According to Rosenstock, perceived susceptibility, which is described as an individual personal perception of the potential danger of contracting a disease as opposed to the total likelihood risk increase, directly affects adherence. Perceived severity also influences adherence. Perceived severity is described as the severity of a problem and its implications. Potential obstacles influence adherence described as "both those that interfere with and facilitate the adoption of a behavior such as side effects, time, and inconvenience". The perceived costs of complying with a collective effort are considered. Susceptibility, and the dread of the infection elements, were grouped with motivational factors (Rosenstock, 1974).

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Disease attitudes, precautionary health, and medical screening were added to the concept. The model was expanded to include demographic factors such as age, sex, ethnic background, profession), cues to action such as factors that prompt preventive health, health incentive, perceptions of control, and possible danger. Even though the concept was initially created to forecast behaviors by severely or persistently diseased patients, this has recently been applied to predict overall health practices as well as significant health activities (Becker & Maiman, 1975).

2.10.2 Theory of Authentic Leadership

Authentic leadership has been defined as an interchange of leadership, morals, checks and balances mechanisms, and constructive organizational performance which includes a person's perspectives, such as ideas, feelings, desires, ideas, and ideas essential to recognize the real self. Good leaders are aware of their strengths and limitations and can communicate their actual selves and feelings to their subordinates to foster workplace mutual trust (Wei, Li, Zhang, & Liu, 2018). Authentic leadership, according to several researchers, includes key traits such as consciousness, interpersonal honesty, and institutionalized moral perspective, with fair information processing. Others' feedback, such as that of employees, coworkers, or supervisors, may assist leaders in better identifying themselves and developing self-awareness. Authentic leaders have a positive impact on their employees and outcomes; for instance, self-aware leaders foster stronger interpersonal connections and contribute to workplace eudemonic health (Ilies, Morgeson, & Nahrgang, 2005).

The COVID-19 outbreak has resulted in leaders experiencing severe and urgent adjustment tasks. To improve the health institution's capacity to withstand the test of time in times of disaster, leaders in health organizations must take responsibility by developing trust, collaborating, and sharing leadership. When leaders take decisions about work environments to exercise physical distancing,

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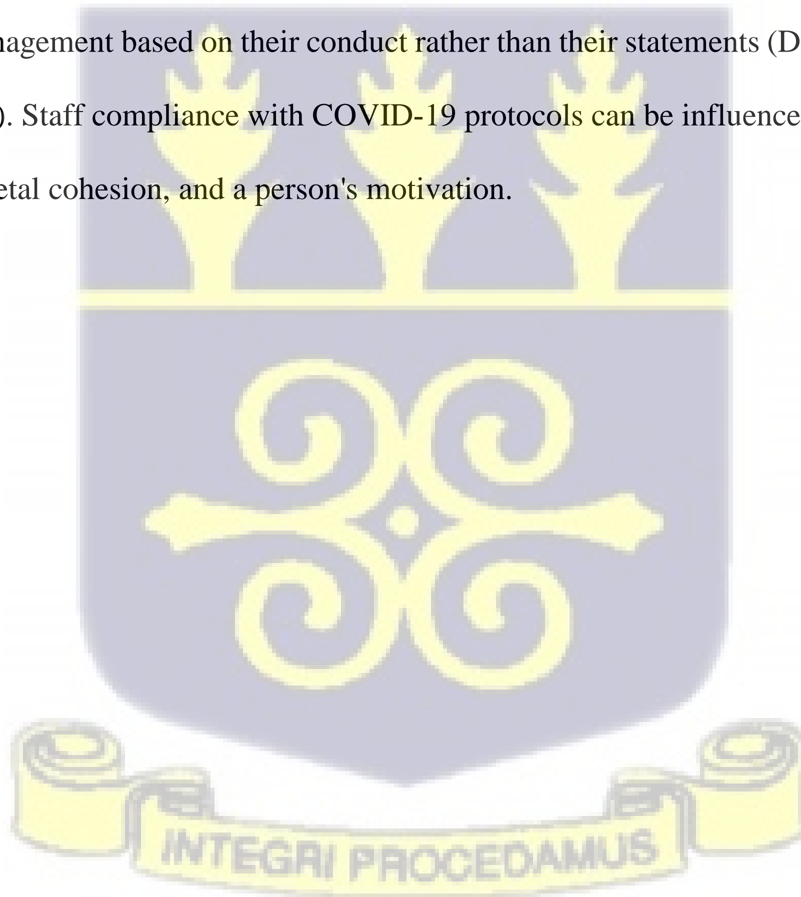
for instance, to manage the situation and provide explicit timely information, leaders must respond quickly (Fernandez & Shaw, 2020). In a crisis, Relationships, according to Fernandez and Shaw (2020), are crucial; so managers should actively engage hearing with no prejudice, embrace advice or feedback, but keep communicating with each other in a way to construct relationships through trust. COVID-19 allows health professionals to observe the management of healthcare organizations, and how the leadership manages crises, or how this circumstance demonstrates the aspects of leadership in whom they put faith. Most virtues built on trust; cooperation and collaboration, for instance, necessitate confidence in the processes are established on understanding and mutual respect. Especially throughout the pandemic, hospital employees put their faith in management based on their conduct rather than their statements (Dolan, Raich, Garti, & Landau, 2020). Staff compliance with COVID-19 protocols can be influenced by a trustworthy connection, societal cohesion, and a person's motivation.



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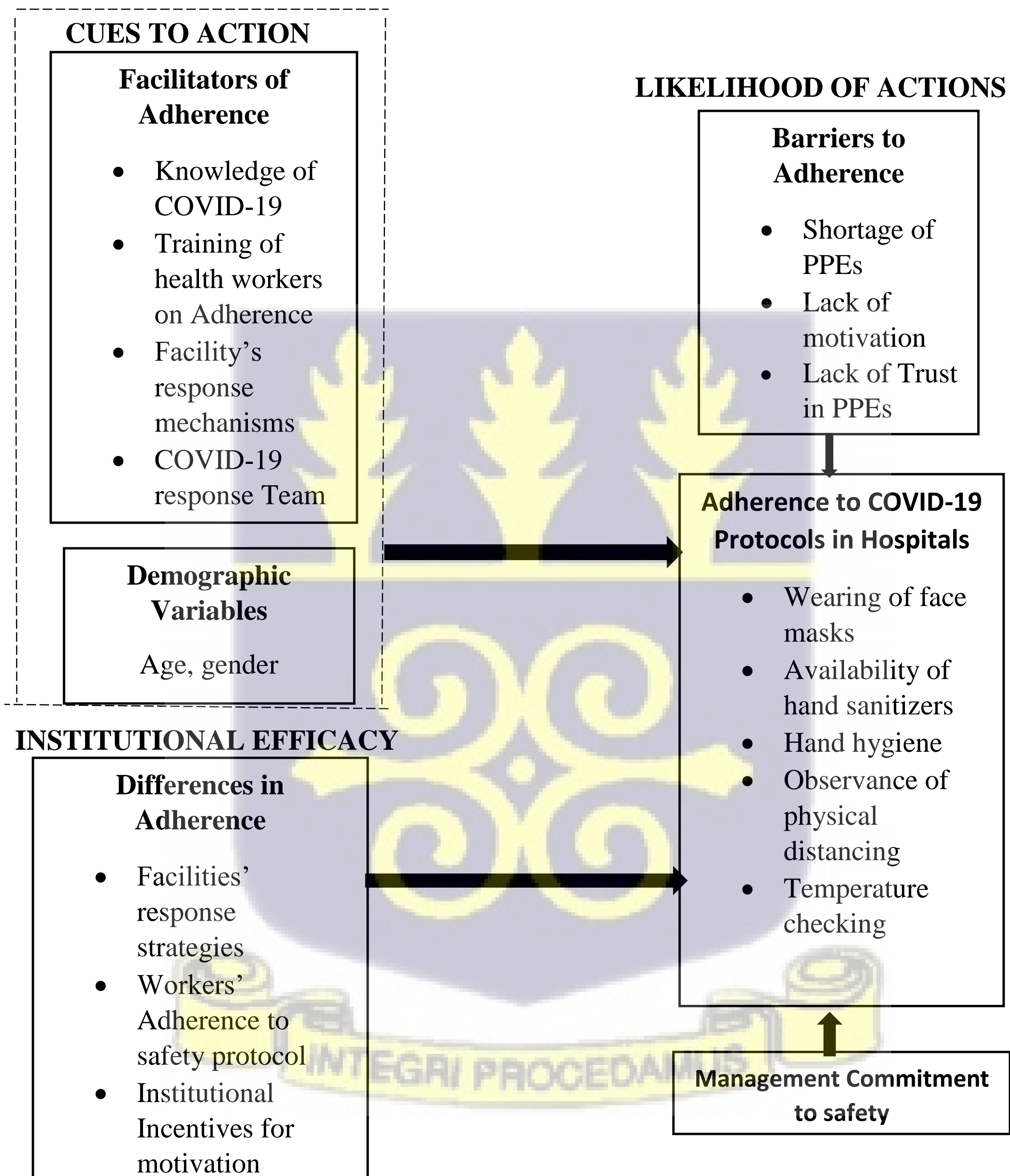
2.11 CONCEPTUAL FRAMEWORK

Figure 2.1:

Conceptual Framework on Factors that Influence Adherence to COVID-19 Protocols in Health Institutions



Source: The Author's Construct (2021)

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Facilitators of Adherence

Worker safety & support: according to the CDC (2020), the management of healthcare institutions must understand and execute policies that seek to ensure the safety of all persons in the healthcare institutions. They stressed in their report it is important the hospitals design a program to offer adequate assistance to health care professionals, considering psychological wellbeing, food, as well as non-punitive sick policies (Centers for Disease Control and Prevention, 2021).

Also, Training of staff of health institutions on Adherence: management of healthcare institutions must ensure healthcare providers are well-versed in using PPEs and also on how to regulate the behaviors of patients and visitors of the hospitals. This will ensure strict adherence to safety protocols. The results could point to an over-prioritization of safety protocol logistics and clinical staff training on safety protocols. For example, to counteract COVID-19 transmission, a study recommended that hospitals must include all healthcare workers and auxiliary personnel in infection-control strategies implementation (Wee, et al., 2020). This is critical in achieving a COVID-19 transmission rate of zero in healthcare settings (Zhao, et al., 2020).

Moreover, Strengthen facility's response mechanisms and COVID-19 response Team will help in ensuring adherence to the safety protocols: management of healthcare institutions must adopt techniques to make the use of PPEs more effective, as well adherence to preventive measures for COVID-19. In a report by the Centers for Disease Control and Prevention, (2021), it was recommended that managers of health institutions should also ensure that all healthcare staff, clients, and guests, are subject to universal source control. A COVID-19 response team is instituted as a team of experts who will take charge of related matters of the virus and encourage health personnel at these hospitals to adhere to the safety protocols.

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Management commitment to safety

This explains how managers communicate their commitment to safety at the management level, particularly during times of crisis. Management commitment to safety, which is a key aspect of the safety atmosphere in these hospitals, is the most influential predictor of employee safety behavior. In a study by Fernandez and Shaw (2020), it was revealed that the commitment of the management of healthcare institutions to ensure the safety of workers and adherence will build trust between them and the staff of the hospital. This will cause the differences that may occur about commitment levels in private or government healthcare institutions. This demonstrates management commitment to safety in the COVID-19 situation in healthcare institutions. Furthermore, COVID-19 enables individuals to observe how top management lead, deals with emergencies, and which managers individuals continue to trust. Collaboration and engagement, for instance, necessitate confidence in their practices, and confidence underpins all interactions. During the COVID-19 pandemic, employees trust managers based on their actions rather than their words. Adherence to safety protocols is influenced by a trusted connection between healthcare staff and the management of the hospitals (Dolan, Raich, Garti, & Landau, 2020).

Barriers to Adherence

First, inability to purchase and shortage of PPEs: in a study done by Sidamo, et al., (2021), the primary impediments to efficient enforcement of techniques for management of COVID-19 include the inability for healthcare providers to purchase Personal Protective Equipment that can protect them from contracting the virus. This eventually leads to a shortage of PPEs in the hospitals as noted in research published by Houghton, et al., (2020) that healthcare staff and management expressed their worry about PPEs shortages. Other challenges include insufficient space to segregate patients and a lack of convenient handwashing facilities in the hospitals.

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Low motivation among healthcare personnel to follow protocols regularly was identified in a recent study by Morishita, Takase, Ishikane, and Otomo, (2021). They posited in their study that healthcare professionals are also concerned about the value of the awards they will receive because of their commitment to combat COVID-19 on the front lines. Incentives for healthcare workers engaged with a possibly prolonged struggle over COVID-19 could play a big role in employees' desire to follow the COVID-19 safety practices (Morishita, Takase, Ishikane, & Otomo, 2021). As a result, hospitals managers can motivate their personnel to adhere to COVID-19 protocols. Managers should employ mechanisms that tie rewards closely to adherence to improve the connection between adherence and outcomes.

A lack of trust in PPEs was identified as one barrier to adherence to COVID-19 protocols. When healthcare providers cannot track PPE supplies and authenticate their quality and standard for use, they may develop doubts and lose trust in the PPE supplies. Also, some people might not believe the fact that the PPEs can prevent them from contracting the virus (Joarder, Khaled, & Zaman, 2020).

Demographic Variables

In a study conducted by Carlucci, D'Ambrosio, and Balsamo (2020), differences in socio-demographic variables can influence perceptions of adherence to the COVID-19 safety protocols. Age, sex, and other demographic characteristics including color, education, and religion, amongst many others, impact health providers' willingness to follow COVID-19 safety protocols. Males are more likely to indulge in dangerous activities than women, according to data from earlier research on demographic characteristics trends of risk-taking actions (Cobey et al., 2013; Pawlowski et al., 2008).

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Factors Underlining Differences in Adherence between Public and Private Facilities

Some variables cause differences in adherence to the COVID-19 protocols in public and private facilities. These variables are measured differently base on the setting and the healthcare providers found in these hospitals. They include attitudes towards COVID-19 safety measures. The attitude of healthcare providers towards the COVID-19 safety measure in public hospitals differs from the attitude of healthcare providers in private hospitals. This can cause differences in adherence to safety protocols in these hospitals. Also, how healthcare providers are motivated in these hospitals causes the differences in adherence to COVID-19 safety protocols. Again, healthcare providers' adherence is influenced by a trusted connection and social cohesion. Approaches to communicating with staff and commitment to ensure the safety of workers and adherence may differ from the form of hospital whether public or private, and these can cause differences in adherence to the safety protocols.

Adherence to COVID-19 Safety Protocols

A variety of factors make it easier for healthcare professionals to adhere to safety measures. Clear institutional policies, safety procedures, and rules, efficient communication, managerial support, planning, training of healthcare providers, and trust in management and PPEs are all important components in ensuring healthcare compliance with safety protocols. Management commitment to COVID-19 safety practices in healthcare institutions is crucial in the fight against COVID-19 to ensure adherence to safety protocols. Ashinyo, et al., (2021) conducted a detailed investigation evaluating health providers' responsiveness to infection COVID-19 preventive and management strategies rehab facilities in Accra. Findings indicated that adherence to the safety protocols by healthcare workers reduces the risk of infection in the hospitals (Johnson et al., 2020), and ensure the following:

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First, wearing of face masks: The World Health Organization has advocated the use of primarily two types of viral prevention strategies to achieve this goal (WHO, 2020). One of the key examples of the safety protocols is healthcare providers' and visitors' compliance with the requirement to wear masks in the hospitals as a COVID-19 prevention measure. Using protective face masks throughout health staff encounters with patients was virtually universal and reduces the risk of infection. Hence, when healthcare institutions can bring together the components in the framework, it will result to complete adherence to the policy of wearing face masks in the hospitals (Powell-Jackson, et al., 2020).

Again, in another study, hygiene actions are considered one of the behavioral approaches recommended to improve the reliability and frequency of hygienic actions such as establishing effective handwashing routines and disinfection procedures such as applying hand sanitizers. Several healthcare providers have adopted these two behavioral techniques around the globe in their attempts to reduce infectious transmissions (Dalton et al., 2020). Convenient access to handwashing facilities was noted as a key technique to COVID-19 adherence to safety standards in hospitals (Houghton et al., 2020).

WHO advocated the use of primarily two types of viral prevention strategies to achieve this goal (WHO, 2020). Physical distancing protocols: these are also known as social distancing protocols, which include decreased peer and public interaction, lockdowns, quarantine, and isolation. Healthcare institutions have created spaces in their hospitals for patients and visitors to these hospitals to observe the physical distancing. This reduces the risk of infection in hospitals (Dalton et al., 2020).

Last but not the least, checking the temperature of both healthcare providers and visitors before entry: healthcare institutions have made available non-contact infrared thermometers and scanners

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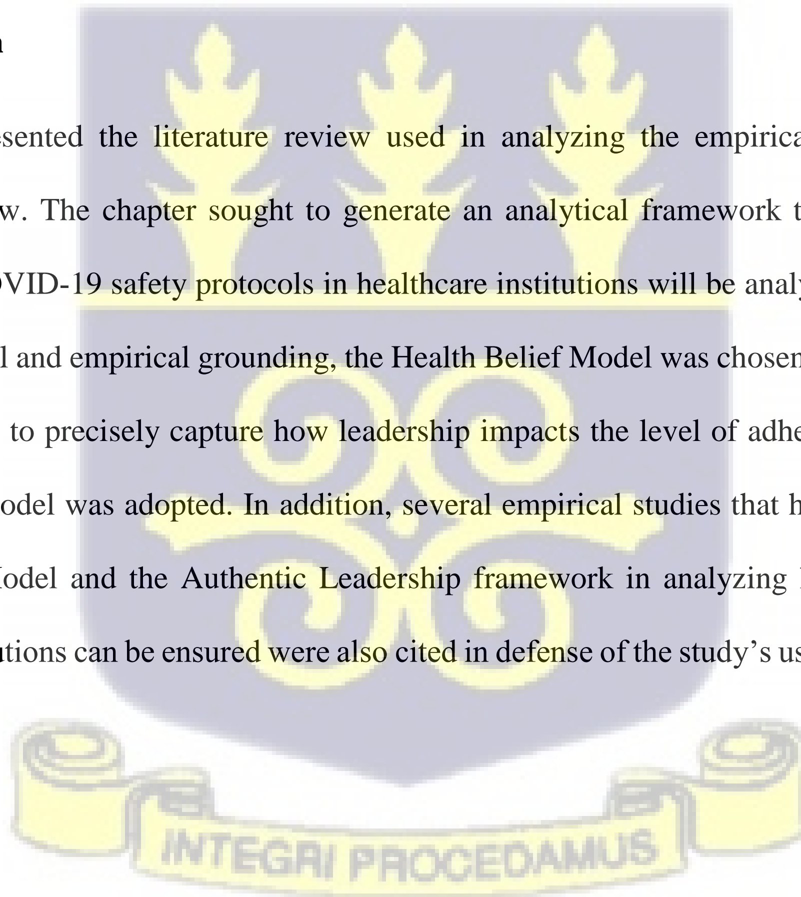
to be used to scan all persons entering the hospitals. Usually, the security person at the entrance will use the non-contact infrared thermometer to see if one is feverish — a symptom that could be a sign of infection with the coronavirus. According to linked research published by Martin-Delgado, et al., (2020) to examine the accessibility of PPEs and screening and therapeutic equipment for medical personnel involved in the management of COVID-19, it was discovered that regular stock-outs and insufficient provision of PPEs were the main concern for health staff during the COVID-19 outbreak. As a result, maintaining the continuous availability of PPEs in health facilities for health practitioners is crucial to maintaining rates of infection and hospital worker death low (Risko, et al., 2020).

2.12 Conclusion

The chapter presented the literature review used in analyzing the empirical review and the theoretical review. The chapter sought to generate an analytical framework through which the adherence to COVID-19 safety protocols in healthcare institutions will be analyzed. Owing to its strong theoretical and empirical grounding, the Health Belief Model was chosen as the framework of analysis. But to precisely capture how leadership impacts the level of adherence, a modified version of the model was adopted. In addition, several empirical studies that have employed the Health Belief Model and the Authentic Leadership framework in analyzing how adherence in healthcare institutions can be ensured were also cited in defense of the study's use of these models.



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CHAPTER THREE

METHODOLOGY OF RESEARCH

3.0 Introduction

The research methodologies employed are discussed in this chapter. It entails all processes required in answering the research questions about the stated problem in the following order: introduction, explanation of a paradigm under which the research is anchored, research approach, design of the study, setting of the study, target population, sampling procedure, and sample size determination are all included in this chapter. It also includes a data collecting instrument, data collection and analysis procedures, ethical issues, as well as chapter summary.

3.1 Research Paradigm

Scholars have been motivated by a variety of beliefs and ideals, which helps to explain why they employ certain models and techniques. Academics refer to these concepts as paradigms (Guba & Lincoln, 1994; Kuhn, 1970). It is a collection of assumptions that guide one's behavior. (Guba & Lincoln, 1994). Philosophical ideas underpin these goals. Positivism, interpretivism, critical realism, and pragmatism are some of the many knowledge views that set the agenda for a research study (Myers & Avison, 2002; Orlikowski & Baroudi, 1991). Pragmatism was used in this research. Pragmatic reasoning, as per (Creswell, 2009), is appropriate for quantitative and qualitative research studies. For social research investigations, pragmatism is advised because it would not matter if the study uses qualitative, quantitative, or both methods in research (Morgan, 2014)(Morgan, 2014). Researchers can readily select the optimum strategy for achieving their research's goal.

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3.2 Research Design

The research used a mixed-methods approach. According to Creswell, Klassen, Plano Clark, and Smith (2011), it provides well techniques that can address a wide range of research issues. The statistical approach assists to determine the proportion among people who display particular actions, whereas qualitative approaches help to understand how people's beliefs or experiences impact the behavior patterns (Sutton & Austin, 2015). The mixed-method approach was adopted because gathering both types of data will aid in greater understanding of the problem of the study. A case study approach was used to implement the mixed-method. A case study, thus according Gulsecen and Kubat (2006), are being considered a dependable study design, particularly when a complete in-depth investigation is required. A case study approach was adopted to enable the researcher to compare the level of adherence to protocols across the facilities.

Based on the overall importance and the effectiveness study method in research, the case study research design was employed for this study. The case study approach is appropriate since it assures that a situation under investigation is not examined through such a single lens, but instead from several perspectives, necessitating the collection of different data over which a situation including adherence to COVID-19 protocols can be revealed and understood.

3.3 Study Setting

This study was conducted in Greater Accra Regional Hospital and Nyaho Medical Center, and below are the profiles of the two hospitals. The Greater Accra Regional Hospital and Nyaho Medical Center were selected for this research as case studies because of the role the two facilities played during the COVID-19 pandemic in Ghana. These two facilities were part of the hospitals hosting COVID-19 patients in Ghana.

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Greater Accra Regional Hospital

The GARH known as Ridge hospital is located inside the Accra Metro zone, within Greater Accra Region, in North Ridge which covers around 15.65 acres of land. The Greater Accra Region has a population of over 4,671,363, is served by the Ridge Hospital (Ghana Statistical Service, 2015). Around 1928, the GARH is in the center of Accra, began as a hospital for European immigrants. After Ghana's independence in 1957, it has become a District Hospital, and then it was renamed in 1997 as Ridge Regional Hospital. It is now being refurbished as well as converted into such an ultra-modern 620-bed facility with a complete array of specialty services that represent Ghana's rapidly developing societal goals.

In addition, the majority of the facility's equipment and infrastructure were built between 1911 and 1923. Structures, outdated apparatus, and space constraints remained a key concern for the hospital, given this. The hospital's capacity complements (192) remained overburdened, resulting in gridlock across all healthcare areas. Regularly, the hospital served about 800 outpatients and 250 in-patients. Approximately 29% of in-patients lacked beds in the facility. Just a few patients hospitalized at every fixed instant seemed to have mattresses, therefore around half of the patients were on wheels or benches. Pathway of OPD was converted into an admission space for emergency treatment, whereby patients were treated then supported on benches in the outdoor space. Again for service providers, there were no offices or restrooms. Although certain renovations including newer buildings have been undertaken over the years to suit the facility's growing amount of patients, these were done on such an occasional basis with a huge number of unique structures of varying size, design, value, and look. The hospital's physical structures were chaotic, interrupting the delivery of services.

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But the facility's key operations, and the infrastructures to enable patient care, posed a significant barrier. This condition hampered the health experts' ability to maximize their productivity and the facility's service uptake.

To address this challenge, the government made a point of replacing old equipment with innovative great equipment that reflects the true social expectations of Ghana's rapidly growing capital city, as part of its plan to enhance health systems in order to accomplish Universal Coverage.

On its mechanized payroll, the hospital has a total of 654 employees. The Hospital has a significant shortfall of 541 staff across all units based on its staffing needs and estimations. This chasm is expected to be filled in order to optimize the new hospital's capacity.

Nyaho Medical Center

In 1970, Dr. Kwami Nyaho Tamaklo started the medical center to develop a contemporary medical center capable of providing the best standards of health treatment to the Ghanaian public. The hospital was founded as Nyaho Clinic as the first private collective practice of medicine after the founder was motivated to employ this concept while studying medicine and studying Mayo Brothers, the story of two brothers who partnered and build the world-renowned Mayo Clinic in the United States. After Nyaho Clinic first opened its doors, the group medical practice comprised one primary care physician and eight Korle-Bu Teaching Hospital experts. Nyaho Medical Centre now employs six primary care doctors and over thirty permanent specialists. A unit was established in 1981, and the Diagnostic testing Center was established in 1994, thus by 2001, the Clinic had been renamed Nyaho Medical Center. The Medical Center employs approximately 320 people who work across the whole facility's departments.

The job of Managing Director became available in April 2015 to help the facility realize its goal of offering the greatest clinical services in Ghana.

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Nyaho Medical Centre has been recognized for its high caliber of healthcare professionals and excellence in healthcare delivery. People, corporations, diplomats, and multilateral institutions are among the clients of Nyaho Medical Centre, which offers superior medical services to the public. Nyaho Medical Centre has been formed mostly on the principle of cooperative clinical practice, which now has approximately forty professionals operating together for benefit of the patients. The medical center has 320 employees working in all areas of the facility, according to its human resource department.

3.4 Study population

The inclusion criteria for the study was all clinical and non-clinical workers of the two facilities. The target population thus included the management, clinical personnel including midwives, nurses, physicians, clients, and other staff such as quality assurance officers, hospital-based COVID-19 response team, and security persons in the facilities.

3.5 Sampling Size

Yamane (1967), a simple formula for computing proportional sample sizes, has been employed to compute the size of the study's sample. The computation used (95 percent confidence interval, P = 0.05), given as: $n = \frac{N}{1+N(e)^2}$

Such that:

N =size of the sample

N = Size of population

e = level of accuracy (5%).

The Greater Accra Regional Hospital and Nyaho Medical Center population size was 974 in this study. The predicted sample size with a sampling error of 0.05 is given:

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$$n = \frac{974}{1+974(0.05)^2} = 283.$$

Therefore the sample size for the study was 283

3.5.1 Proportion of Respondents for each Hospital

Using the sample size obtained above, proportions were utilized to determine the number of participants in each facility based on their qualified (clinical and non-clinical) strong workforce. From the profile of the facilities, it was found that Greater Accra Regional Hospital has 654 staff and Nyaho Medical Center has 320 staff working in all units of the facilities.

Hence, the Proportion of Respondents for each Hospital is determined by the formula below

$$\text{GARH} = \frac{RPS}{N}(n)$$

Where: RPS = respondents population size for each facility; n = determined sample size; N = total population of both facilities

$$\text{GARH} = \frac{654}{974}(283) = 190$$

Hence, the proportion of sample size for Greater Accra Regional Hospital is 190.

$$\text{NMC} = \frac{320}{974}(283) = 93$$

Therefore, the proportion of sample size for Nyaho Medical Center is 93.

3.6 Techniques of Sampling

Participants were selected using convenient and purposive sampling techniques.

A purposive sample technique was employed for respondents who were deemed to have data on adherence to COVID-19 protocols. Hence, management members and security persons of the hospitals were selected with the purposive sample technique. Management members are essential in this study because they allocate resources and implement the mitigation measures of COVID-

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19, and the security persons have been trained to ensure strict adherence to the safety protocols at the entrance of the hospitals.

Convenience sampling was used to select respondents who were easily accessible and desire to participate in the study. Workers not working for up to a year in the selected hospitals were excluded from the study. This study excluded newly hired employees (below a year) including students doing clinical activities to ensure that personnel who responded to the survey spent much time in the facilities to know the current level of protocol adherence in the hospitals. Hence, this technique was employed to select respondents from Physicians, Nurses, Quality Assurance Managers, and hospital-based COVID-19 response teams using convenience sampling.

3.7 Instruments for Data Collection

3.7.1 Questionnaire

There were 22 components to the data collection questionnaire that measured four composite domains. Facilitators of adherence, differences in adherence, barriers to adherence, demographic, and outcome variables were used to categorize these composite areas. This was assessed using a five-point Likert scale, to determine either participant will choose 1 indicates strong agreement, 2 indicates agreement, 3 indicates fair agreement, 4 indicates disagreement, and 5 indicates strong disagreement (Likert, 1932; Tittle & Hill, 1967). This assessment consisted of 22 propositions put to assess adherence to COVID-19 protocols under four components including facilitators of adherence, barriers to adherence, differences in adherence, and adherence to protocols. The scale contained fifteen phrases with positive meanings and seven statements with negative associations.

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3.7.2 Interview Guide

To gather information from important informants, an interview guide was used. Depending on their roles and expertise, five important informants (2 from NMC and 3 from GARH) were interviewed. The interviews were conducted using an interview guide consisting of 8 elements of questions under four composite areas such as facilitators of adherence, barriers to adherence, differences in adherence, and adherence to protocols. Under facilitators of adherence, questions were asked to discover the strategies managements of the facilities have put in place to facilitate the adherence to protocols, consisting of questions on training on adherence, management support, and COVID-19 response team. Questions were asked on factors that hinder adherence to protocols such as shortage of PPEs (nose mask, hand sanitizer, gloves), and other challenges they face as a facility under barriers to adherence. Under differences in adherence, questions were asked on facilities' response strategies to combat the virus and how policies and protocols influenced service delivery in the facilities. On adherence to protocols, probing questions were asked to discover adherence to protocols such as wearing of face masks, hand hygiene, physical distancing, and temperature checking.

3.8 Test of Reliability

Internal reliability was measured using Cronbach's alpha value to ensure that the survey questionnaire remained reliable (Warmbrod, 2001). The Cronbach's alpha with all variables on the adherence scale ranges from 0.755 to 0.793, as shown in Table 3.1. For social research, Warmbrod, (2001) suggests a Cronbach alpha coefficient of 0.70. It implies that perhaps the information gathered for the research was accurate.

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Table 3.1: Test of Reliability

Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized statements	Number of statements
Facilitators of Adherence	.757	.761	7
Barriers to Adherence	.789	.793	7
Differences in Adherence	.751	.755	2
Adherence to Protocols	.756	.760	6

2.0 3.9 Ethical Issues

Ethical clearance was sought and granted by the GHS-ERC (Ghana Health Service Ethics Review Committee) under the reference number GHS-ERC025/08/21. It was used to get authorization from the management of the healthcare facilities (GARH & NMC), and permission was granted before administering questionnaires to the staff of the hospitals.

3.10 Analysis and Data Processing

Thematic analysis was employed to examine the qualitative part of the data from key informants, which grouped all data under themes and sub-themes that reflected the study's unique objectives. The investigator acquainted himself with the data obtained and allocated codes by reading and re-reading the transcribed information from the interviews. According to (Braun & Clarke, 2006), it's the first step in the data analysis stage. After coding and collating all the data, the investigator refocused the analysis on a higher level of themes and sub-themes that reflected the study's specific

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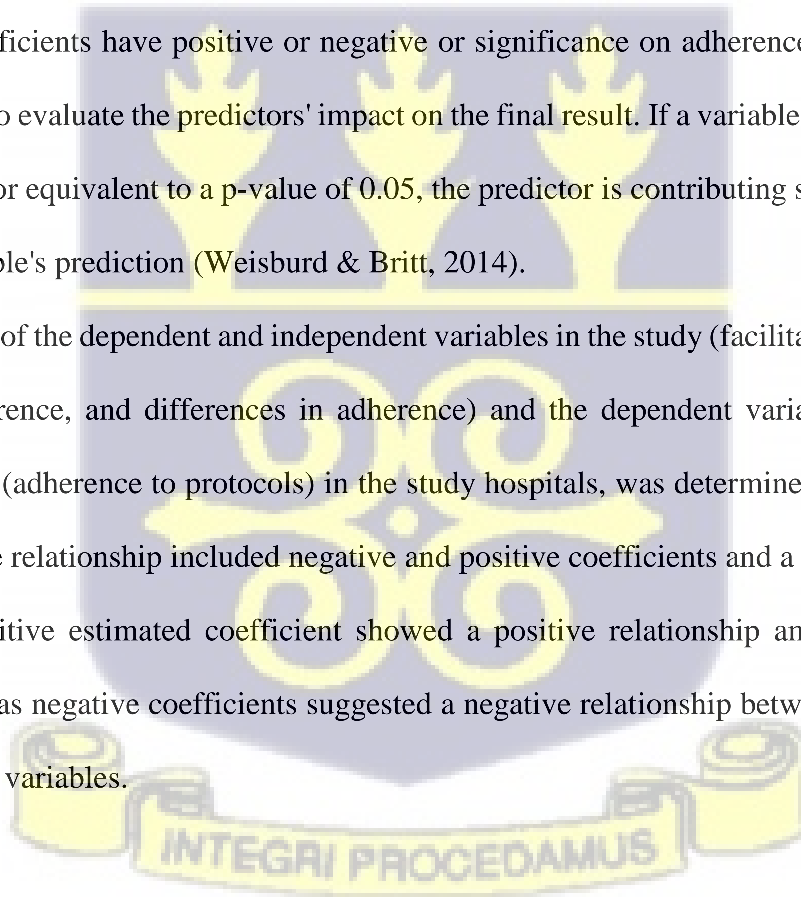
goals. The quantitative data were analyzed using SPSS version 20. The responses from the surveys were coded and entered onto SPSS to create the study's dataset. The dataset was analyzed to generate measures of central tendencies (mean, and standard deviations), ordinal regression as well as Spearman correlations to test associations and relationships among the variables that are dependent and those that are independent. Tables, and statistical results relating to respondents' shared opinions, were presented.

Factors that linked to COVID-19 adherence to protocols at the study hospitals were assessed using the Ordinal Logistic Regression model (OLR). Estimates were used in the analysis model, with a p-value of 5% being considered significant. The correlation value is positive or negative, meaning that greater coefficients have positive or negative or significance on adherence. These estimates have been used to evaluate the predictors' impact on the final result. If a variable is significant with a level of about or equivalent to a p-value of 0.05, the predictor is contributing significantly to the dependent variable's prediction (Weisburd & Britt, 2014).

The relationship of the dependent and independent variables in the study (facilitators of adherence, barriers to adherence, and differences in adherence) and the dependent variable, which is the study's outcome (adherence to protocols) in the study hospitals, was determined using Spearman correlations. The relationship included negative and positive coefficients and a significance value of 5%. The positive estimated coefficient showed a positive relationship among the research variables, whereas negative coefficients suggested a negative relationship between the dependent and independent variables.



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3.11 Chapter Summary

The research paradigm, study design, study setting profile, population of the study, sampling technique, and sample size, processing and analysis, and also ethical considerations of study participants were all covered in this chapter. The study's validity and reliability are designed to make sure the method used for analysis is trustworthy and accurate. A case study with mixed methods was used in this investigation. Purposive sampling method has been used to select study facilities and some respondents, proportions were used to calculate the size of samples for every facility, and a simple random method of sampling was adopted to administer the questionnaire to respondents; clinical staff such as nurses, physicians, and midwives, and also the non-clinical staff.

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CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

Results of the research are presented in this chapter. The chapter presents the findings of statistical analyses employed to determine factors linked to COVID-19 adherence to protocols and differences in adherence between public and private facilities. The chapter also presents qualitative analyses of barriers to adherence to protocols. The presentation is done under these thematic areas: The impact of demographic characteristics and health facility-related factors on adherence to COVID-19 protocols, differences in adherence to protocols in public and private facilities, and barriers to adherence to protocols in public and private facilities. The chapter also presents a discussion of findings base on the study objectives.

4.1 Respondents' Socio-Demographic Characteristics

The demographic features of the participants are shown in Table 4.1. Generally, 190 (67.1%) and 93 (32.9%) and 170 (44.2%) staff were sampled from the Greater Accra Regional Hospital (GARH) and Nyaho Medical Center (NMC) respectively. Females of 107 (56.3%) in public hospitals and 63 (67.7%) in private hospitals dominated the study. All the respondents in public and private hospitals were between the age of 18 - 59 years with a Means (M) and Standard deviations (M=1.78; SD=0.83) and (M=1.42; SD=0.54) respectively. Nurses made up the majority of participants in both public and private hospitals, representing 65.3% and 58.1% respectively. About 97 (51%) of the respondents in public hospitals qualify for a diploma, while about 70 (75.3%) qualified degree in a private hospital, and the majority representing 156 (82.1%) and 87

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(93.5%) of the respondents in the public and private hospitals respectively worked from 1 – 5 years in the hospitals.

Table 4.1: Respondents' Socio-Demographic Characteristics

	Public		Private	
Characteristics	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Gender				
Male	83	43.7	30	32.3
Female	107	56.3	63	67.7
Age(years)				
18 - 29	83	43.7	56	60.2
30 - 39	74	38.9	35	37.6
40 - 49	25	13.2	2	2.2
50 - 59	8	4.2	0	0
Mean (SD)	**1.78(0.83)**		**1.42(0.54)**	
Education				
Certificate	6	3.2	2	2.2
Diploma	97	51	11	11.8
Degree	65	34.2	70	75.3
Masters	21	11.1	10	10.8
PhD	1	0.5	0	
Profession				
COVI9 Response Team	1	0.5	1	1.1
Management Members	1	0.5	2	2.2
Midwives	43	22.6	23	24.7
Nurses	124	65.3	54	58.1
Physicians	9	4.7	6	6.5
Quality Assurance	5	2.6	3	3.2
Security Persons	7	3.7	4	4.3
Tenure (years)				
1 – 5	156	82.1	87	93.5
6 – 10	29	15.3	6	6.5
>10	5	2.6		

Source: Field survey (2021)

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4.2 Descriptive Statistic and Correlation Analysis of Variables

The study found significant relationships among the constructs and the dependent variable, adherence to protocols. Spearman correlation of facilitators of adherence and adherence to protocols was found to be statistically significant and significantly positive ($r = .633$, $p < 0.001$). Similarly, a fairly positive and statistically significant relationship between differences in adherence and adherence to protocols was discovered. ($r = .336$, $p < 0.001$). However, barriers to adherence and adherence to protocols showed weak negative and statistically significant ($r = -.508$, $p < .001$). This emphasizes the significance that facility health personnel place on these characteristics when assessing protocol adherence.

Table 4.2: Descriptive Statistic and Correlation Matrix of Variables

Variables	Mean	SD	Facilitators of Adherence	Differences in Adherence	Barriers to Adherence	Adherence to Protocols
Facilitators of Adherence	2.044	0.810	1			
Differences in Adherence	1.961	0.889	.571**	1		
Barriers to Adherence	3.190	0.954	-.289*	-.137*	1	
Adherence to Protocols	2.538	1.002	.633*	.336*	-.508*	1

Source: Field survey (2021) ****p<0.05, *p<0.001**

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4.3 Logistic Regression Analysis of Factors linked to COVID-19 adherence to protocols in public and private facilities

Logistic regression was carried out to determine the factors linked to COVID-19 adherence to protocols in the study hospitals. Multivariate regression was employed to measure the strength of the factors linked to COVID-19 adherence to protocols. It was revealed that females (OR=2.43; 95% C.I=-0.09, 0.98) and (OR = 2.05; 95% CI= 0.67, 1.53) were approximately 2 times more likely to adhere to safety protocols in public and private hospitals respectively. Health workers with the age group 30 – 39 in public hospitals (OR= 3.28; 95% CI=1.07, 3.21) were three times as likely to adhere to the COVID-19 protocols as compared to those in private hospitals. Similarly, health workers with at least a degree (OR=2.36; 95% CI=1.48, 3.72) in the private hospital were possible to follow the COVID-19 protocols as compared to workers with the same qualification in the public hospital.

It was revealed that staff in public hospitals who were reportedly trained on the COVID-19 guidelines showed an increased level of adherence to the protocols (OR=2.08; 95% CI=-1.40, -0.59) as compared to those in the private hospital (OR=1.44; 95%CI=-0.36, 0.87). Similarly, health workers with the knowledge of COVID-19 and adherence in the public hospital were 3 times more likely (OR=3.12; 95% CI=0.96, 1.79) to follow the protocols when contrasted with the level of adherence (OR=11.45; 95% CI=0.55, 1.69) by staffs in the private hospital.

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Table 4.3: Logistic Regression of Factors associated with adherence to COVID-19 protocols

	Public			Private		
Explanatory Variables	**Coefficients**	**Odds Ratio**	**95% CI**	**Coefficients**	**Odds Ratio**	**95% CI**
Demographic Factors						
Age (years)						
18 – 29(ref)						
30 - 39	1.62	3.28	1.07 - 3.21	0.64	1.58	0.46 -1.07
40 - 49	0.67	1.31	0.34 - 0.85	0.72	1.79	-0.07 - 1.53
50 -59	0.60	0.92	-0.23 - 0.54			
Gender						
Male(ref)						
Female	0.44	2.43	-0.09 - 0.98	0.13	2.05	0.67 - 1.53
Level of Education						
Certificate(ref)						
Diploma	0.32	0.67	0.28 - 1.56	1.07	1.53	0.38 - 0.91
Degree	0.72	1.29	0.41 - 2.041	0.75	2.36	1.48 - 3.72
Masters	-0.10	0.88	0.37 - 1.74	0.52	1.13	0.23 - 0.63
PhD	0.20	1. 43	0.33 - 1.46			
Facility Related Factors						
COVID-19 Response Team(ref)						

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Training of Staffs on Adherence	-0.99	2.08*	-1.40 - -0.59	-0.25**	1.44	-0.36 - 0.87
Knowledge on adherence	1.37*	3.12	0.96 - 1.79	1.12	1.45*	0.55 - 1.69

Source: Field survey (2021) ***p<0.01, **p<0.05**

4.4 Qualitative Findings

4.4.1 Training of Staff on Adherence

The findings showed that all the two facilities (public and private) had trained their staff on the COVID-19 public guideline and safety protocols to improve adherence in the facilities. Based on their responses, the study found that management of the hospitals embarked on training to improve the staff COVID-19 adherence to protocols such as the appropriate way of wearing face masks, how to ensure hand hygiene and physical distancing in the facilities. Nevertheless, it was revealed that the majority of staff especially the nurses/midwives, when asked if they were trained on the safety protocols responded "yes" on how to protect themselves from the virus and the appropriate way of using the PPEs. Some comments made by the respondents include;

> *"We trained all workers in this facility about the protocols such as the handwashing and hand sanitizing, and also how to keep physical distance. The pictorial and visual demonstration was employed on handwashing and appropriate way of wearing the PPEs"* (Male, 37yrs - GARH)

INTEGRI PROCEDAMUS

In Nyaho Medical Center, staffs have these to say about Training on adherence:

> *"It was a physical training with the training based on the ministry of Health protocols that were shared during the outbreak of the COVID in Ghana somewhere march 2020. So we*

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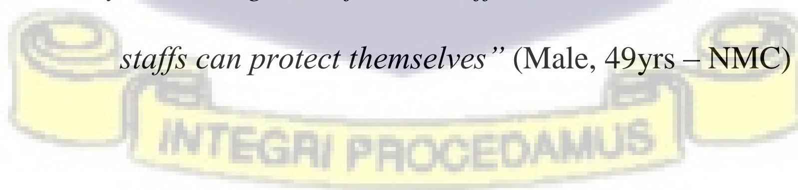
were trained first by the district health management team and after that, we became trainers for the rest of the staffs" (Female, 36yrs –NMC)

4.4.2 Support of Health Staff

Further interaction with the participants also revealed that, even though the management had trained them on adherence to protocols, they also provided support to the staff of the hospitals. The support included the provision of PPEs to all staff and other Safety apparatus, free regular screening among staff to check and protect the staff from the virus. Some comments of the participants include;

> *"We support them to improve health education, and also train them about the COVID and the protocols associated with it and also support them with PPEs so that they can protect themselves and protect the patients as well"* (Male, 53yrs- GARH)

> *"There is a lot of support for health workers in this facility. The management support staff in terms of the safety protocols, they get the PPEs available so that staff can protect themselves from COVID. We have the HR who sends a communication to staff on the various protocols that are in place like mask-wearing, washing of hands. We have hand washing areas, sanitizers are being bought. When you walk around you will see that sanitizers are all over the place for hand hygiene and we have PPEs like masks, which is being procured by the management for the staffs and scrubs, and isolation gowns so that staffs can protect themselves"* (Male, 49yrs – NMC)



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4.4.3 COVID-19 Response Team

On the COVID-19 response team in the hospitals, respondents all stated that they have a team responsible to manage the COVID-19 and its other related issues such as adherence. It was revealed that instituting a COVID-19 response team to manage the virus in the hospitals was a mandatory exercise demanded by the Ghana Health Service. The primary function of the team is to conduct contact tracing, advise management on the strategies to put in place to ensure strict adherence in the hospitals, draft the hospital base protocols, coordinate with other facilities to receive positive COVID-19 cases, and supplying of PPEs for the hospital. Some comments of the participants include;

> *"Yes, very effective COVID-19 response team. It is made up of the public health team, and they are in charge of reporting and engaging the national at the district level. Then we have the medical team for the emergency bed capacity issues and the admission and management of the cases. And we have the testing and diagnostic side. The clinical psychologist also helps to counsel people in times of COVID. We are having a lot of COVID cases and we have to make sure that our PPEs are enough for staff. So there is a stakeholder meeting whenever there is a trigger and we come together to see what our gaps are and we address them. The COVID team is responsible to provide PPEs for the facility through the purchase service"* (Male, 49yrs –NMC)

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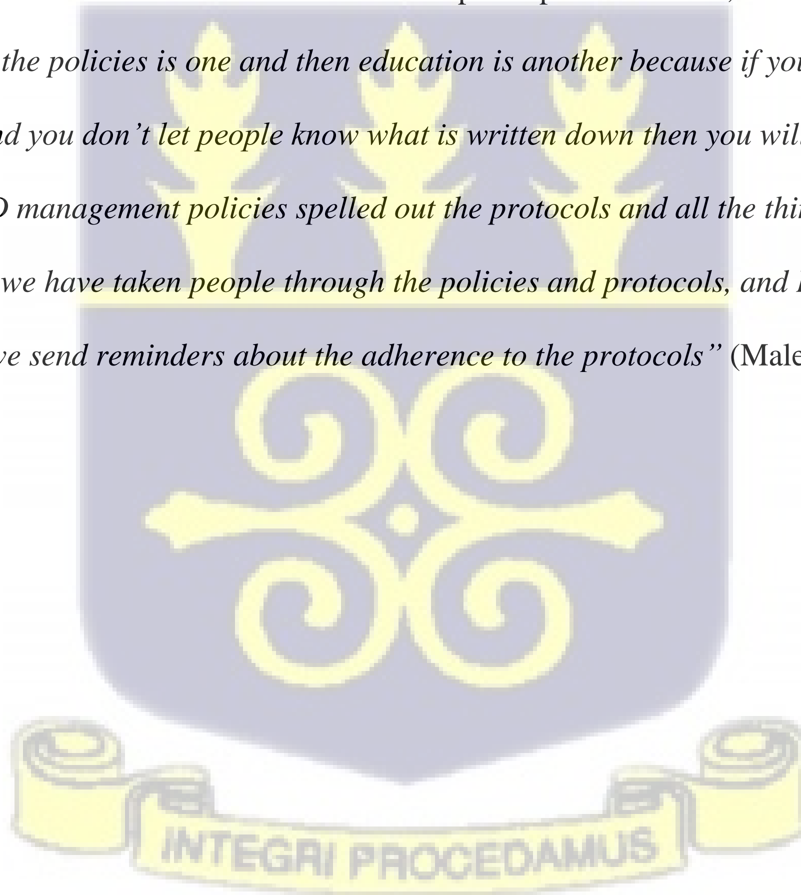
4.4.4 Education on Policies

It was revealed that management educated their staff on the policies initiated to deal with the virus and also ensured strict adherence to the protocols in their facilities. Management of the hospitals when asked if they educated their employees on policies put in place to deal with the virus and improve adherence level in the hospitals responded "yes" and accounted how the education was done. It was shown that the education was centered on sensitization about the risks associated with the virus and also the policies initiated by management to stop the infection from spreading in their facilities, including wearing face masks all the time within the hospital and sanitizing one's hands before entry to the facilities. Some comments of the participants included;

> *"Yes, the policies is one and then education is another because if you put policies in place and you don't let people know what is written down then you will face challenges. COVID management policies spelled out the protocols and all the things we do at the center we have taken people through the policies and protocols, and I think once in a while, we send reminders about the adherence to the protocols"* (Male, 49yrs – NMC).



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4.4.5 Summary of Themes

The emergent themes as discussed above have been summarized in Table 4.4.5 below

Themes	Findings
Training of Staff on Adherence	Employees in the both facilities were Trained based on the Ministry of Health protocols to improve adherence in the facilities.
Support of Health Staff	Management provided support to the staff, such as provision of PPEs to all staff and other Safety apparatus, free regular screening among staff to check and protect the staff from the virus.
COVID-19 Response Team	The management of the facilities constituted COVID-19 response team to manage the virus in the hospitals.
Education on Policies	Staff of the hospitals were educated and enlightened on the policies implemented by the management of the hospitals. The education was centered on sensitization about the risks associated with the virus, wearing of face masks and sanitizing one's hands before entry to the facilities.

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4.5 Difference in COVID-19 adherence to protocols in private and public facilities.

The adherence level was compared and differences in adherence between public and private hospitals were determined employing a t-test with independent samples. Table 4.5 presents the results which indicate statistically significant differences in the means for all the variables under the domain of adherence to protocols ($p < 0.001$; $p < 0.05$). It can be deduced from Table 4.5 that except for the first two variables under the domain of adherence to protocols, the remaining variables showed a statistically significant variation in staff adherence to protocols between public and private hospitals. It shows that the effect sizes of the difference for the variables of adherence to protocols were high except for the variables of 'staff wear nose masks' and 'patients wear nose masks'. 'Staff discipline on adherence to protocols' under the domain of facilitated adherence recorded a medium effect size (CD=0.586) as compared to the other variables under the same domain which recorded small effect sizes. Similarly, variables of differences in adherence reported small effect sizes. The means scores generally suggest that staff in public hospitals are more possibly to follow COVID-19 protocols compared to those in private hospitals.

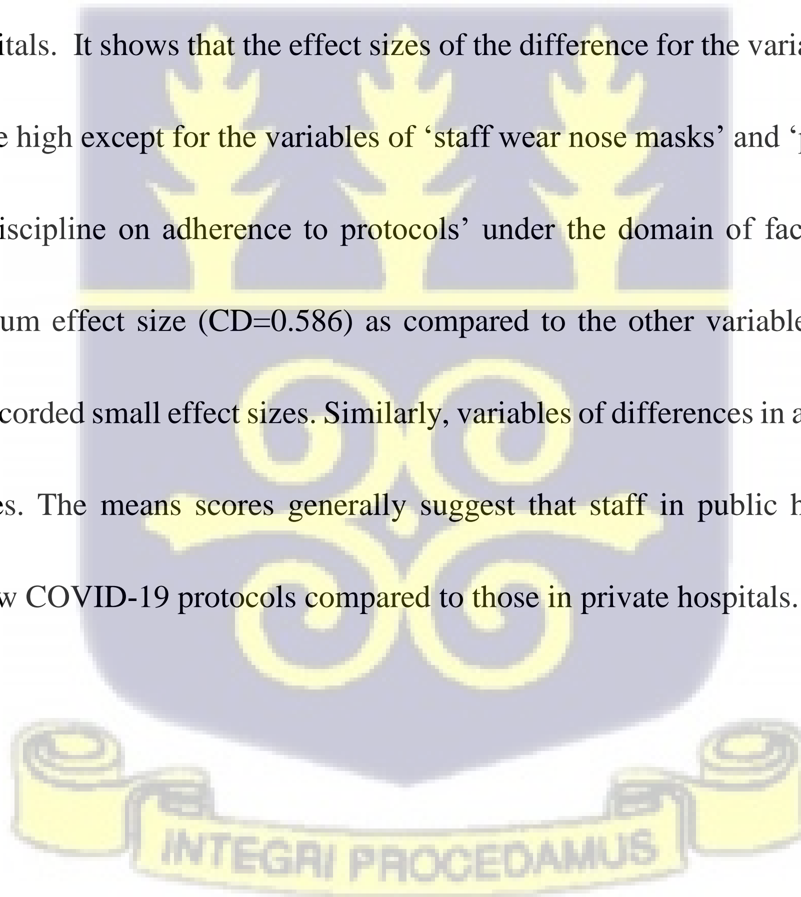

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Table 4.4: Difference in COVID-19 adherence to protocols by facility type

Variable	Public		Private		Difference	
	Mean	SD	Mean	SD	P <	Cohen's D
Adherence to Protocols						
Staff wear nose masks	1.91	.947	1.66	1.15	0.05	0.237
Patient wear nose mask	2.53	1.22	2.17	1.21	0.05	0.296
Physical distancing is observed	3.43	1.25	2.27	1.38	0.001	0.881
Temperature of staff is checked	3.22	1.26	1.99	1.15	0.001	1.019
Temperature of patients is checked	2.82	1.22	1.66	1.09	0.001	1.003
Temperature of visitors is checked	3.12	1.32	1.84	1.18	0.001	1.022
Facilitators of Adherence						
knowledge on adherence to protocols	1.69	0.93	1.57	0.71	0.05	0.145
Strategies to optimize PPEs and Adherence	1.91	0.97	1.82	0.83	0.05	0.099
workers trained on Adherence	2.21	1.08	1.88	1.13	0.01	1.299
COVID-19 response Team is instituted	1.96	1.10	1.88	0.94	0.05	0.078
discipline on adherence to the protocols	2.55	1.12	1.90	1.10	0.001	0.586
sensitization on adherence to the protocols	2.42	1.09	2.05	0.91	0.001	0.369
Management commitment to adherence	2.19	1.10	1.94	1.17	0.05	0.220

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Differences in Adherence						
Safety Protocols improved adherence	2.14	1.04	1.91	1.08	0.50	0.217
COVID Policies influenced staff adherence	1.90	0.94	1.76	0.87	0.50	0.155

Source: Field survey (2021)

4.6 Barriers to COVID-19 Adherence to Protocols in the Study Hospitals

4.6.1 Shortage of PPEs

Regarding the shortage of PPEs, the findings revealed that all the two healthcare institutions had run out of PPEs from the early stages of the pandemic. At the time of the study, participants indicated that the hospitals do not run a shortage of PPEs now as compared to the early stages of the virus. Participants indicated that they experienced a shortage of PPEs in their facilities. The participants gave these remarks on shortages of PPEs in their facilities:

> *"Once a while we encounter shortages. But the shortages do not affect the COVID unit of the hospital, but other units experience shortages once in a while. Mostly the quantity demanded are not always available"* (*Male, 37yrs* – GARH)

4.6.2 Patient factors

Patient factors were identified as one barrier to ensuring strict adherence to the protocols in the hospitals. It was indicated that some patients and visitors of the facilities were reluctant in adhering to the protocols when they visit the hospitals because of their perception that the virus does not exist and, religious beliefs that their God will protect them even if they do not adhere to protocols. These misconceptions and/or conspiratorial beliefs were the major challenges faced by healthcare

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staff in the hospitals in their attempt to enforce the safety protocols. Below indicates the views of respondents:

> *"Patient's relatives make things difficult. It's not being easy trying to get patients' relatives to wear a mask when they visit the facility and also adhere to the other protocols. Because some of them believe the virus does not exist, and so it is difficult" sometimes"* (Female, 39yrs – GARH)

> *"Some of the patients and visitors believe that there is no need for them to wear PPEs because they don't believe in the virus. So we do have some challenges with them, and you will have to take your time to enlighten them about the COVID and make sure he or she wears the mask"* (Female, 36yrs – NMC)

4.6.3 Financial Barriers

It was established there were a lot of economic issues about the purchase of PPEs during the pandemic. It was discovered that due to financial constraints the management could not purchase enough PPEs for their staff. Hospitals could not purchase PPEs for their staff during the first wave of the virus due to the high cost of PPEs and they were not capacitated financially to purchase enough for their staff.

> *"There were a whole lot of economic issues within the COVID era, so there were shortages. Now we have a lot of masks. Those days especially during the second wave, masks were so expensive because of the way it was being imported. But now it is fine, we have enough mask for everyone unlike the first wave and there is also budget allocations for PPEs as a center"* (Male, 49yrs – NMC)

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4.6.4 Summary of Themes

The emergent themes as discussed above have been summarized in Table 4.6.4 below

Themes	Findings
Shortage of PPEs	Both health facilities reported to have ran out of PPEs from the early stages of the pandemic. At the time of the study, participants indicated that the hospitals do not run a shortage of PPEs now as compared to the early stages of the virus. However, other units in the facilities experience shortages
Patient factors	Misconceptions and/or conspiratorial beliefs were identified the major challenges faced by healthcare staff in the hospitals The health workers complained that Patient's relatives make things difficult for them to ensure strict adherence to the protocols because of the misconception of nonexistence of the virus.
Financial Barriers	It was discovered that due to financial constraints the management could not purchase enough PPEs for their staff

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	especially during the first and second waves of the virus due to the high cost of the PPEs.

4.7 Discussion of Findings

4.7.1 Factors Associated with COVID-19 Adherence to Protocols in Public and Private Facilities

The analysis showed that sex, age and other demographic information such as level of education were not statistically significant in COVID-19 adherence to protocols in the study facilities. There were no statistically significant associations between staff of all ages, gender, and level of education, and COVID-19 adherence to protocols in all the facilities studied. Thus, demographic variables were not determining factors associated with COVID-19 adherence in the study. This is in clear contradiction to the findings that demographic variables such as age and gender influences adherence to COVID-19 protocols, and that women were more inclined than males to participate in precautionary behaviors and adhere to the safety protocols (Carlucci, D'Ambrosio, & Balsamo 2020; Guan et al., 2020). Similarly, the findings of this study contradict another study that social characteristics such as education have been associated with personal preventive procedures amid large outbreaks in Italy (Bish & Michie, 2010; Brooks et al., 2020).

Facility-related factors such as training of hospital staff on COVID-19 adherence to protocols and knowledge on adherence were the main factors influencing staffs' COVID-19 adherence to protocols from the logistic regression analyses in the private and public facilities.

Training of staff on COVID-19 adherence to protocols emerged as one of the major determinants of staffs' COVID-19 adherence to protocols in the two facilities, and staff trained on how to follow COVID-19 guidelines more likely to follow COVID-19 protocols. This agrees with Wee, et al.,

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(2020) and Zhao, et al., (2020) findings, where healthcare staff and auxiliary personnel included in programs of Controlling and preventing infections in hospitals to stop the spread of the virus reported a higher level of compliance with the COVID-19 safety protocols.

Another significant determinant of COVID-19 adherence to protocols among staff in this study identified is the staffs' knowledge of COVID-19 and adherence. Higher levels of knowledge about the disease outbreak and safety protocol are reported to have a significant impact on adherence to safety protocols according to a recent review by public health experts (Webster et al., 2020). In this study, staffs with the requisite knowledge about COVID-19 and the safety protocols in all the study facilities were more likely to show an increased COVID-19 adherence to safety guidelines. This confirms the research findings of Webster et al. (2020) which indicated that enough knowledge on COVID-19 and protocols is one of the most commonly identified factors affecting adherence to safety protocols. The findings also reflect in the existing evidence that poor public health information and unclear guidelines about what to do in certain situations can lead to anxiety and misunderstanding about the purpose of adherence to safety protocols, all of which can reduce adherence rates (Brooks et al., 2020).

4.7.2 Differences in Adherence to COVID-19 Protocols between Public and Private Facilities

Objective two of the research sought to compare the adherence level between private and public facilities. Findings are discussed regarding the mean scores of each variable and the effect size of the difference found.

The study revealed there were striking differences in adherence to protocols between health staff of public and private hospitals. Compared to health staff and patients in private hospitals, those in public hospitals showed commitment and were more likely to wear nose masks, physical distancing, and temperature checking. The effect size of the difference was consistently large for

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all the domains under adherence to protocols except for staff and patients wearing nose masks. This corroborates the research findings of Shet, et al., (2011) that staff and patients adhere to protocols in government healthcare hospitals than in private hospitals. However, a study by Bedoya, et al., (2017) in Kenya to observe infection prevention and control practices in primary health care showed that personal hygiene safety measures and protocol practices were higher in private health facilities than in public health facilities. Studies have found that the behavior of managers in terms of decision making is influenced by the environment, and therefore differences in attitude and management commitment to ensure adherence in public and private institutions exist (Ring & Perry 1985). Perhaps the differences in adherence to protocols stemmed from the commitment of management to ensure strict adherence to protocols instituted in the hospitals. The researcher noticed that around the time of the investigation, hospitals management played a key role in terms of the programs organized to train their staff for preventing infection and ensuring strict COVID-19 adherence to protocols in the facilities.

This research further revealed significant variations in all the domains of facilitators of adherence. Base on the mean scores of all the domains of facilitators of adherence, staff in public hospitals is more likely to gain knowledge and show discipline on adherence than in private hospitals. Similarly, management in public hospitals is more likely to show commitment to ensure a complete adherence, strategize to optimize the use of PPEs, train staff on adherence, sensitize staff on protocols, and institute a COVID-19 response team to increase adherence to protocols than private hospitals. These variations may be because of staffs' positive attitude towards adherence and commitment from management to ensure strict adherence to protocols.

Adherence in public and private hospitals is influenced by COVID-19 policies implemented by the management of the hospitals. The study established that the domains of differences in

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adherence showed variations between public and private hospitals. The mean scores demonstrate that management in public hospitals is more likely to implement policies to guide and influence the adherence to COVID-19 protocols than private hospitals. However, the effect size of the difference for all the domains was consistently small.

4.7.3 Barriers to Adherence to COVID-19 Protocols in Private and Public Hospitals

Participants in the qualitative part of the research stated the challenges they encounter in the hospitals regarding COVID-19 adherence. It was shown that the hospitals experienced shortages of PPEs from the first wave of the virus which hinders staff COVID-19 adherence to protocols. Unavailability of COVID-19 materials to facilitate adherence to protocols in the hospitals was identified as one challenge faced by the hospitals according to the respondents. Participants expressed dissatisfaction about the shortages of PPEs and indicated how they put their lives at risk in the facilities. This endorses the research's results by Sidamo, et al., (2021) which argued that lack of PPEs puts front-line employees' lives in jeopardy and jeopardizes the effectiveness of important public health interventions. Hence, to effectively implement crucial interventions to mitigate the pandemic, an adequate supply of PPEs is critical. In a similar study by Houghton, et al., (2020), lack of and low-quality PPE was noted as a severe concern for healthcare workers and managers in hospitals. Some people might not believe in the fact that the PPEs can prevent them from contracting the virus (Joarder, Khaled, & Zaman, 2020). PPE was unsettling for healthcare staff, and several patients reported feeling alienated and scared while wearing it.

The study has noted patient factors as one of the barriers to ensuring strict adherence to the protocols in the hospitals. Participants have repeatedly complained about some patients' reluctant nature in adhering to the protocols when they visit the hospitals because of their misconceptions and/or conspiratorial beliefs such as the inexistence of the virus and religious beliefs that their God

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will protect them even if they do not adhere to protocols. This is evidence of the results of research by Coroiu, et al. (2020) that myths and/or conspiratorial beliefs as one obstacle that hinder effective adherence to protocols. Misconceptions such as the government exaggerating the outbreak's consequences, social distancing failing to prevent virus transmission were identified as barriers to COVID-19 protocols. This indicates that misconceptions and/or conspiratorial beliefs have gained ground in the minds of people, and this is very dangerous to the efforts of fighting the virus and ensuring effective adherence to COVID-19 safety protocols. Therefore, stakeholders must endeavor to educate the general public about the virus.

Another challenge the respondents noted was the financial challenges they face during the pandemic. It is one of the primary impediments to effective COVID-19 adherence to safety measures that emerged from this research. The research discovered there were a lot of financial issues about the purchase of PPEs during the pandemic. Hospitals could not purchase PPEs for their staff due to the high cost of PPEs. The high cost of PPEs led to shortages of PPEs in the hospitals. Insufficiency of funds by hospitals could lead to a shortage of frontline employees and the unavailability of handwashing facilities in the hospitals. The shortage of healthcare employees makes ordinary healthcare delivery even more difficult (Houghton et al., 2020).

4.8 Conclusion

Specifically, this study was designed to comparatively study adherence to COVID-19 protocols in public and private hospitals. The findings of the study are presented in this chapter in line with the objectives set. It was presented under the following sub-units; the demographic characteristics of respondents, statistical and qualitative analyses of factors linked to COVID-19 adherence to protocols, differences in adherence, and barriers to adherence to protocols. Statistically, a significant association is established between the dependent and independent variables. The

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findings of the results were also presented in this chapter. The focus of the discussion was on the research objectives; factors associated with COVID-19 protocols adherence, differences in adherence, and barriers to COVID-19 protocols adherence between private and public health facilities in Ghana. The findings revealed that COVID-19 protocols adherence predictors are training staff on adherence, presence of COVID-19 response team, and staff knowledge on adherence.

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CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.0 Introduction

This chapter highlights the research's most important findings and draws inferences depending on them. The chapter also discusses recommendations, the research's shortcomings, and suggested research topics for the future.

5.1 Summary of Findings

Adherence to COVID-19 protocols is influenced by several dimensions dependent on the health facilities being studied. As there is wide variation in factors associated with adherence to protocols, it is likely that adherence levels also vary between public and private facilities. Therefore, a review of the adherence to COVID-19 protocols in both private and public hospitals in Ghana is required; i) To determine the factors associated with COVID-19 protocols adherence in public and private facilities. ii) To examine the difference in COVID-19 protocols adherence between public and private facilities. iii) To determine barriers to COVID-19 protocols adherence in public and private facilities. A mixed-method approach and a case study design were the methodologies adopted to enable the researcher to compare the level of adherence to protocols across the facilities. Both questionnaire and interview guide were used as instruments to collect data from participants. The questionnaire consisted of 22 component variables that measured four composite domains. Facilitators of adherence, differences in adherence, barriers to adherence, demographic, and outcome variables were used to categorize these composite areas. This was assessed using a five-point Likert scale, to determine either participant with a particular statement, agree strongly, agree, agree fairly, disagree, or disagree strongly.

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Findings from the study indicate that the COVID-19 response team, training staff on adherence, and knowledge on adherence were retained as significant variables from the logistic regression. This indicates the importance of these variables towards ensuring that effective adherence to COVID-19 safety protocols in health facilities is achieved to prevent the spread of the virus. Also, the findings of the study indicate that staff of public hospitals adhere to protocols as compared to those in private hospitals. There was a high level of adherence reported in this study in public hospitals than in private hospitals. This may result from management commitment to ensuring strict adherence to protocols and government assistance to public hospitals by assisting them with PPEs and other facilities that facilitate adherence in these hospitals.

The regression analysis findings demonstrated that females were approximately 2 times more likely to adhere to safety protocols in public and private hospitals than males. Health workers with the age group 30 – 39 in public hospitals were 3 times as possible to adhere to the protocols of the COVID-19 compared to those in private hospitals. The regression analysis further disclosed that staff in public hospitals who were reportedly trained on the COVID-19 guidelines showed an increased level of adherence to the protocols as compared to those in the private hospital. Similarly, health workers with the knowledge of COVID-19 and adherence in the public hospital were 3 times as likely to follow the COVID-19 safety measures compared to staff in a private hospital.

The means scores generally suggest that staff in public hospitals are more likely to follow COVID-19 safety measures compared to staff in a private hospital according to the independent-samples t-test that was carried out in the study. The findings indicated statistically significant differences in staff adherence to protocols between public and private hospitals and that the effect sizes of the difference were high except for the protocol of 'staff and patients wearing nose masks'. The study recorded similar variations in factors that facilitate adherence to protocols between public and

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private hospitals, and ‘staff discipline on adherence to protocols’ recorded a medium effect size as compared to the other factors which recorded small effect sizes.

The qualitative findings have shown that the hospitals encountered several challenges in their efforts to ensure adherence to the protocols in the facilities. Several reasons, according to participants' perspectives, impede staff of hospitals from ensuring effective adherence to COVID-19 guidelines including shortage of PPEs, patient factors, and financial barriers.

5.2 Conclusions

The WHO has designated COVID-19 as a pandemic since March 2020, and regional and global stakeholders recommended a variety of ways to limit or prevent the disease's transmission. Over the years, a global consensus has been reached on the measures significant in minimizing the spread of the virus in health facilities, and that is adherence to the approved protocols in health facilities. Wearing face masks, ensuring hand hygiene, temperature checking, and physical distancing were the measures put in place in hospitals for staff, patients, and visitors to adhere to minimize the spread of the virus in Ghana in hospitals. Generally, training hospital staff on the appropriate way to adhere to these protocols and educating them about the virus and the risks involved are associated with lower infection rates in the hospitals. There is a need for the management of the hospitals to take proactive measures and implement policies in order not to discourage their staff from participating in the facility-based programs to promote adherence.

The study tried to assess how public and private hospitals in Ghana followed COVID-19 protocols. According to the findings of this research, public hospitals followed the COVID-19 protocols more closely than private hospitals. Training staff on adherence, the COVID-19 response team, and staff knowledge on adherence were the key factors influencing adherence to protocols in the hospitals.

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It is therefore incumbent on the management of the study hospitals to work at increasing adherence levels since it is an indicator of minimizing the spread of infectious diseases and improving the safety of people in the hospitals.

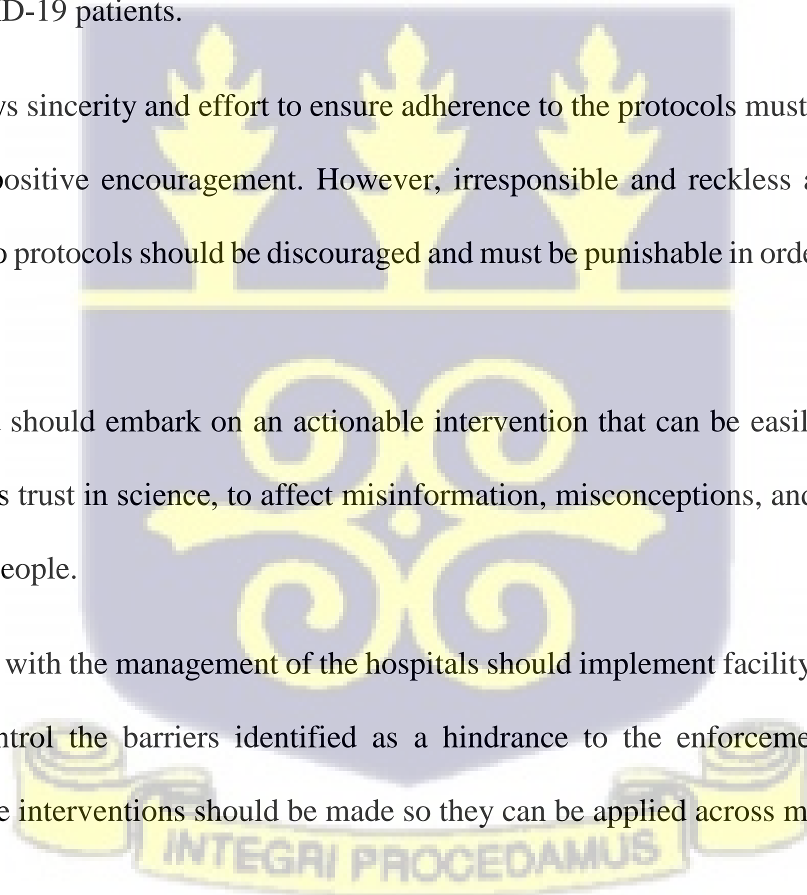
5.3 Recommendation (s)

There is the need for the government's concerted effort and other stakeholders to assist private hospitals with health equipment and PPEs to aid them in the fight against the virus and any other infectious disease. This is a national effort to fight a pandemic within the territory of Ghana and not assist private facilities to make a profit, as some of the private facilities assisted the government to contain COVID-19 patients.

Staff that displays sincerity and effort to ensure adherence to the protocols must be rewarded with incentives and positive encouragement. However, irresponsible and reckless actions leading to non-adherence to protocols should be discouraged and must be punishable in order not to put others at risk.

The government should embark on an actionable intervention that can be easily disseminated to increase people's trust in science, to affect misinformation, misconceptions, and/or conspiratorial beliefs held by people.

The government with the management of the hospitals should implement facility base policies and programs to control the barriers identified as a hindrance to the enforcement of COVID-19 adherence. These interventions should be made so they can be applied across many hospitals.



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5.4 Suggestions for Further Research

Future research should investigate time trends and staff adherence across multiple time points during different phases of pandemics to further assess the possible protracted implications on COVID-19 protocols.

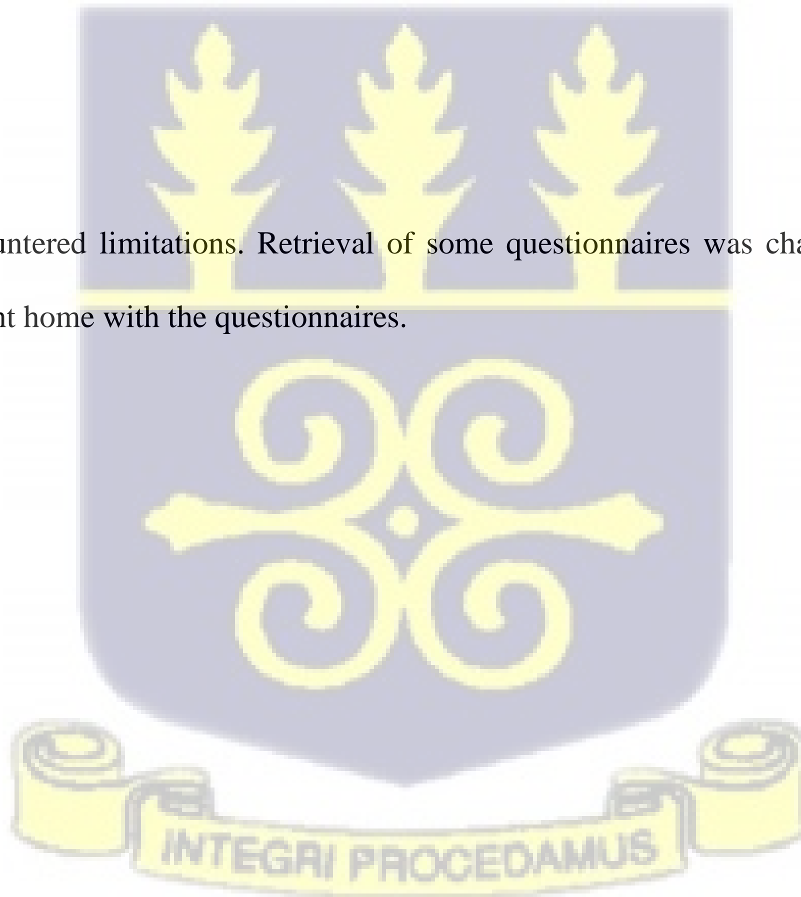
Future studies should look at the effects of misconceptions and/or conspiratorial beliefs on adherence to protocols.

Future research should examine how punitive measures influence adherence to protocols.

Further investigations should look at the mental health risk accompanying pandemics and their protocols.

5.5 Limitations

The study encountered limitations. Retrieval of some questionnaires was challenging as some clinical staff went home with the questionnaires.



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APPENDICES

Appendix 1: Questionnaire and Interview Guide on Adherence to COVID-19 protocols.

UNIVERSITY OF GHANA BUSINESS SCHOOL

DEPARTMENT OF PUBLIC ADMINISTRATION AND HEALTH SERVICE MANAGEMENT

RESEARCH TITLE: ADHERENCE TO COVID-19 PROTOCOLS: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE HOSPITALS IN GHANA

Dear Sir/Madam,

I am **Mohammed Amin Issah**, undertaking a study leading to the award of Master of Philosophy (MPhil) in Health Service Management at the University of Ghana, Legon, Business School. This study solicits your views about adherence to COVID-19 protocols in hospitals. If a question does not apply to you, you may leave it unanswered.

I would appreciate any assistance that can be given to enable me to collect data/information by responding to these questions outlined below. This is purely an academic exercise and any information given would be treated as confidential. But before I start, I need to seek your permission and time to go ahead.

Name of Institution:

1. **Age:**
2. **Gender:**
3. **Profession:**
4. **Highest level of education:**

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5. **Tenure in the facility:**

For each statement below, kindly select the response that best characterizes how you feel about the statements, where **1 = Strongly Agree, 2 = Agree, 3 = Fairly Agree, 4 = Disagree, 5 = Strongly Disagree**

Variables	Strongly Agree	Agree	Fairly Agree	Disagree	Strongly Disagree
Facilitators of Adherence					
6. Health workers are trained on Adherence to Protocols	1	2	3	4	5
7. There is good knowledge on adherence to protocols	1	2	3	4	5
8. Strategies are put in place to optimize PPEs and Adherence	1	2	3	4	5
9. There is a COVID-19 response Team is instituted in the hospital	1	2	3	4	5
10. There is strict discipline on adherence to the COVID-19 protocols	1	2	3	4	5

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11. There is period sensitization on adherence to the COVID-19 protocols	1	2	3	4	5
12. There is a commitment by management to ensure there is strict adherence to the COVID-19 protocols	1	2	3	4	5
Barriers to Adherence					
13. The motivation to adhere to the COVID-19 protocol is low	1	2	3	4	5
14. The facility often run out of PPEs	1	2	3	4	5
15. Staff sometimes disregard adherence to hand hygiene	1	2	3	4	5
16. Patients sometimes disregard adherence to the protocols	1	2	3	4	5
17. We are overwhelmed to the extent we cannot ensure that every staff adhere to the COVI-19 protocols	1	2	3	4	5
18. We are overwhelmed with the patient flow to the extent we cannot that ensure every	1	2	3	4	5

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patient adhere to the COVI-19 protocols					
19. We are overwhelmed to the extent we cannot ensure that everyone entering the facility adhere to the COVID-19 protocol	1	2	3	4	5
Differences in Adherence					
20. System of protocols instituted by management have improved adherence in the hospital	1	2	3	4	5
21. Policies and protocols influenced how health services are managed in the hospital	1	2	3	4	5
Adherence to COVID-19 Protocols in Hospitals					
22. Staff wear nose masks while on duty	1	2	3	4	5
23. The patient wears a nose mask at all times while in the facility	1	2	3	4	5

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24. Physical distancing is observed in the hospital	1	2	3	4	5
25. The temperature of staff is checked before they enter the hospital	1	2	3	4	5
26. The temperature of patients is checked before they enter the hospital	1	2	3	4	5
27. The temperature of visitors is checked before they enter the hospital	1	2	3	4	5

INTERVIEW GUIDE

RESEARCH TITLE: ADHERENCE TO COVID-19 PROTOCOLS: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE HOSPITALS IN GHANA

Name of Institution:

1. Age:
2. Gender:
3. Profession:
4. Highest level of education:
5. Tenure in the facility:

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Facilitators of Adherence

6. Were you trained as healthcare staff on adherence the safety protocols? How?
7. What strategies have you employed to strengthen the hospital's response mechanisms to the virus? How?
8. Do management support health workers to improve safety in the hospital? What kind of support?
9. Do you have an effective COVID-19 response Team in the hospital? And what have they done?

Barriers to Adherence

10. Do you often encounter shortages of PPEs? (Probe: nose mask, hand sanitizer, gloves, etc.)

Differences in Adherence

11. The COVID-19 is a dynamic and rapidly changing process, do you often take input from the frontline and respond appropriately?
12. Are you prepared for new and unexpected challenges as the COVID arises?
13. How have managers made sense of the incredible information and knowledge on adherence?

    How have managers translated them into actions that encourage others to adhere to the protocols?

    How have policies and protocols influenced how health services were led and/or managed?

Adherence to COVID-19 Protocols in Hospitals

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14. Do workers adhere to the safety protocols in the hospital? (Probe: Wearing of face masks, Hand hygiene, physical distancing, Temperature checking)

3.0 Appendix 2: Ethical Clearance

UNIVERSITY OF GHANA
BUSINESS SCHOOL
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University of Ghana Business School

DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

Ref. No.:

PAHS/26

5th August, 2021

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION

The bearer of this letter, Mr. Mohammed Amin Issah (0541116427) is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"Adherence to Covid-19 Protocols: Comparative Study of Public and Private Hospitals in Ghana."***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Roger A. Atinga
Senior Lecturer/Supervisor

INTEGRI PROCEDAMUS

COLLEGE OF HUMANITIES

P. O. Box LG 78, Legon, Accra, Ghana
• Telephone: +233 303 963 735 • Email: pahsm@ug.edu.gh • Website: www.ug.edu.gh

University of Ghana http://ugspace.ug.edu.gh

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

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

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Digital Address: GA-050-3303
Mob: +233-50-3539896
Tel: +233-302-681109
Fax + 233-302-685424
Email: ethics.research@ghsmail.org

MyRef. GHS/RDD/ERC/Admin/App/21/385
Your Ref. No.

13th September, 2021

Issah Mohammed Amin
University of Ghana, Legon
C/O Issah seidu,
P.O. BOX TL 1726

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC025/08/21**
Study Title	Adherence to COVID-19 Safety Protocols: Comparative Study of Public and Private Hospitals
Approval Date	13th September, 2021
Expiry Date	12th September, 2022
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of a yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

You are kindly advised to adhere to the national guidelines or protocols on the prevention of COVID -19

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED...

Dr. James Akazili
(Head, Ethics & Research Management Department)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra

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MOHAMMED AMIN ISSAH
UNIVERSITY OF GHANA, BUSINESS SCHOOL
maissah003@st.ug.edu.gh
0541116427/0205419892

August 9, 2021

HEAD OF ADMINISTRATION
RIDGE HOSPITAL
ACCRA

Dear Dr./Ms./Mr.,

LETTER OF PERMISSION FOR DATA COLLECTION IN YOUR FACILITY FOR ACADEMIC PURPOSE

This letter is in regards to seeking your permission to collect data for academic purpose. I am MR. MOHAMMED AMIN ISSAH, and currently a student of University of Ghana. I am conducting a research study to assess "**Adherence to COVID-19 protocols in public and private hospitals**" as part of my Master of Philosophy program.

Therefore, I humbly need the views of the following staff:

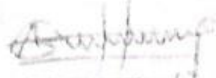
- Management members
- Clinical staff (nurses, midwives, physicians.)
- Quality assurance managers
- Hospital-based COVID-19 response team
- Security persons

For this purpose, I respectfully require your assistance in getting responses from the persons (units) mentioned above. Google form shall be made available for respondents.

I assure you that all protocols will be followed and privacy regulations adhered to. If you have any questions or concerns, my contact information is 0541116427/0205419892

Find attached an introductory letter from the Department of Public Administration and Health Service Management of the University of Ghana, Legon.

Best regards,



Mohammed Amin Issah

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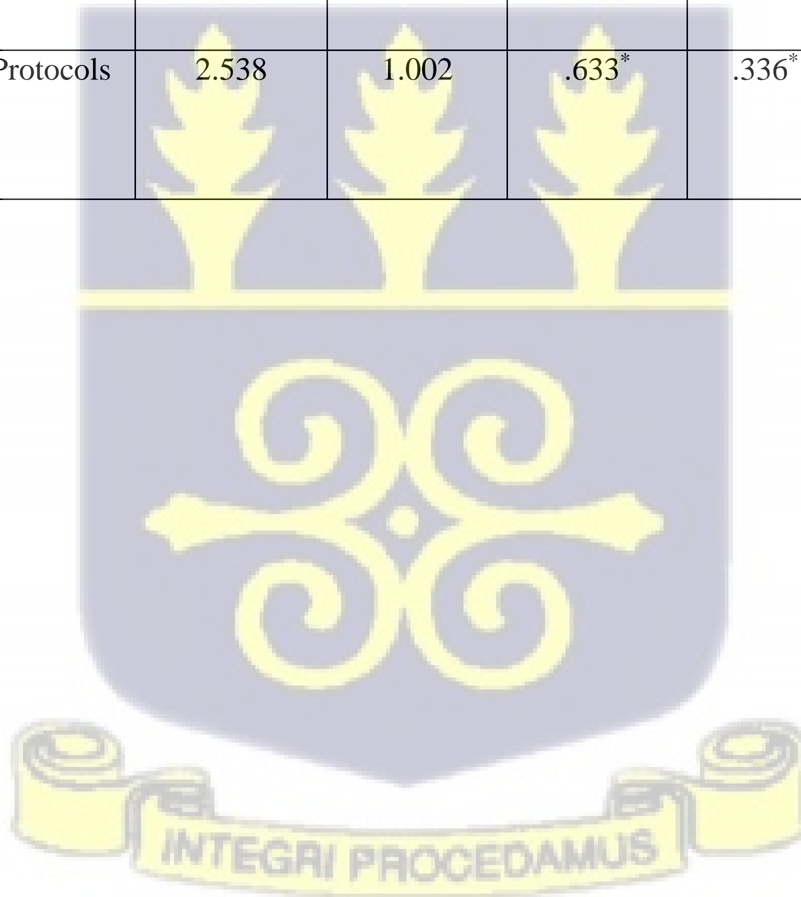
4.0 Appendix 3: Descriptive Statistic and Correlation Matrix of Variables

Variables	Mean	SD	Facilitators of Adherence	Differences in Adherence	Barriers to Adherence	Adherence to Protocols
Facilitators of Adherence	2.044	0.810	1			
Differences in Adherence	1.961	0.889	.571**	1		
Barriers to Adherence	3.190	0.954	-.289*	-.137*	1	
Adherence to Protocols	2.538	1.002	.633*	.336*	-.508*	1



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5.0 Appendix 4: Independent Samples T-Test on Difference in adherence to the COVID-19 protocols by facility type

Variable	Public		Private		Difference	
	Mean	SD	Mean	SD	P <	Cohen's D
Adherence to Protocols						
Staff wear nose masks	1.91	.947	1.66	1.15	0.05	0.237
Patient wear nose mask	2.53	1.22	2.17	1.21	0.05	0.296
Physical distancing is observed	3.43	1.25	2.27	1.38	0.001	0.881
Temperature of staff is checked	3.22	1.26	1.99	1.15	0.001	1.019
Temperature of patients is checked	2.82	1.22	1.66	1.09	0.001	1.003
Temperature of visitors is checked	3.12	1.32	1.84	1.18	0.001	1.022
Facilitators of Adherence						
knowledge on adherence to protocols	1.69	0.93	1.57	0.71	0.05	0.145
Strategies to optimize PPEs and Adherence	1.91	0.97	1.82	0.83	0.05	0.099
workers trained on Adherence	2.21	1.08	1.88	1.13	0.01	1.299
COVID-19 response Team is instituted	1.96	1.10	1.88	0.94	0.05	0.078
discipline on adherence to the protocols	2.55	1.12	1.90	1.10	0.001	0.586
sensitization on adherence to the protocols	2.42	1.09	2.05	0.91	0.001	0.369

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Management commitment to adherence	2.19	1.10	1.94	1.17	0.05	0.220
Differences in Adherence						
Safety Protocols improved adherence	2.14	1.04	1.91	1.08	0.50	0.217
COVID Policies influenced staff adherence	1.90	0.94	1.76	0.87	0.50	0.155