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FACTORS INFLUENCING ADHERENCE TO COVID-19 PREVENTION PROTOCOLS IN SELECTED GYMS IN THE GREATER ACCRA REGION OF GHANA

BY

MISHAEL YANKEY

(STUDENT ID No: 10286108)

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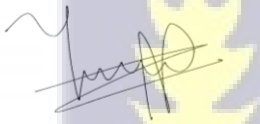
DECLARATION

I, Mishael Yankey, do hereby declare that apart from references that have been made to other people's research, which have been duly acknowledged, this research was prepared by me, it has not been submitted anywhere else for a degree.

Signature……  Date…31st March 2022.

Mishael Yankey

(Student)

Signature…  Date…31st March 2022.

Dr. Augustine Adomah-Afari

(Supervisor)

DEDICATION

I dedicate this work to my father, Mr. Francis Yankey, who has been a beacon of light throughout my life, my mother Rita Yankey and siblings Huldah, Frances and Jephthah Yankey.

ACKNOWLEDGEMENT

I thank the Almighty God for the gift of life to pursue this course of study and my supervisor, Dr. Augustine Adomah-Afari, for his extraordinary help, patience and guidance. I would also like to thank Dr. Patterson Dela Akpalu for all his help and encouragement. I will also like to thank all the gym instructors and managers who were involved in this study.

ABSTRACT

Background: Even before the development and deployment of the COVID-19 vaccines, one important way of preventing transmission was the enforcement of the COVID-19 safety and prevention protocols, namely, the wearing of facemasks, handwashing with soap and water for at least 20 seconds or with an alcohol-based sanitiser and physical distancing. However, for these measures to work, they need to be adhered to by the public, especially in areas such as gyms and fitness centres where the risk of infection or transmission may be high or increased.

Objective: The main objective of this study was to assess factors influencing adherence to COVID -19 safety protocols among gym users in the Greater Accra Region.

Method: This study assessed adherence of gyms and fitness centres to COVID-19 safety protocols using a hygiene assessment checklist, while knowledge, attitudes and perceptions of gym users of the safety protocols were explored through in-depth interviews. The study was a qualitative, cross-sectional study. Gyms in the Greater Accra Region were purposively selected and assessed using a checklist to ascertain if they were compliant with various COVID-19 protocols. Simple descriptive analysis was then conducted on the data collected from various gym facilities. Transcribed data from in-depth interviews were explored to find common themes that could explain whether gym users adhered to COVID-19 protocols or not. Framework analysis was applied.

Findings: Various gyms had put in place safety protocols, especially those related to hand washing and the use of sanitisers. Gyms need to work harder in adhering to various COVID-19 safety protocols, especially ones related to physical distancing measures. Gym users generally, had some knowledge of COVID-19 and its safety protocols. However, some gym users appeared

to lack appreciation of the importance of such protocols and therefore, did not have the right attitudes towards same.

Conclusions: A lot more needs to be done by policy makers in terms of targeted education and policy enforcement for gyms and gym users to be well protected from COVID-19 infections.

TABLE OF CONTENTS

DECLARATION i
DEDICATION ii
ACKNOWLEDGEMENT iii
ABSTRACT iv
TABLE OF CONTENTS vi
LIST OF FIGURES xi
LIST OF ABBREVIATIONS xii
DEFINITION OF TERMS xiii
CHAPTER ONE 1
INTRODUCTION 1
1.0. Background to the study 1
1.1. Problem Statement 4
1.2. Justification of Study 7
1.3. Objectives of the study 9
1.3.1. General Objective 10
1.3.2. Specific Objectives 10
1.3.3. Research questions 10
1.4. Outline of the Dissertation 11
CHAPTER TWO 12
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK 12
2.0. Introduction 12
2.1. Prevalence of COVID-19 12
2.2. Adherence to COVID-19 Protocols 13
2.3. Factors influencing adherence to COVID-19 protocols 17
2.4. Adherence to Available Policies or Guidelines on COVID-19 Prevention in Gyms 17
2.5. Knowledge of COVID-19 Safety and Prevention Protocols among Gym Users 18
2.6. Attitude Towards COVID-19 Safety and Prevention Protocols among Gym Users 21
2.7. Perceptions of COVID-19 Safety and Prevention Protocols among Gym Users 22
2.8. Theoretical Framework 23

2.9. Conceptual Framework of factors influencing Adherence to COVID-19 Prevention Protocols among gym users 26
2.10. Chapter Summary 28
CHAPTER THREE 29
METHODS 29
3.0. Introduction 29
3.1. Philosophical perspective 29
3.2. Study Design 30
3.3. Study Area 31
3.4. Study population 33
3.4.1. Inclusion criteria 33
3.4.2. Exclusion criteria 33
3.5. Sampling strategies 34
3.5.1. Sample size determination / Selection of the study sites and participants 34
3.5.2. Sampling methods 35
3.6. Data Collection 36
3.6.1. Quality assurance 38
3.6.2. Pretesting 38
3.6.3. Validity and Reliability / Rigour 39
3.7. Data processing and analysis 39
3.8. Ethical considerations 41
3.8.1. Ethical clearance 42
3.8.2. Permission from study sites 42
3.8.3. Participant consent 42
3.8.4. Voluntary participation 42
3.8.5. Confidentiality and anonymity 43
3.8.6. Risks and Benefits 43
3.8.7. Data storage and usage 43
3.8.8. Compensation 43
3.8.9. COVID-19 Protocols 44

3.8.10. Funding 44
3.8.11. Conflict of interest 44
3.9. Chapter Summary 44
CHAPTER FOUR 45
RESULTS 45
4.0. Introduction 45
4.1. Analysis of the checklist 46
4.1.1. Background or Location of gyms and fitness centres 46
4.1.2. Adherence to available policies or guidelines on COVID-19 prevention in gyms 48
4.1.2.1. Reminders on handwashing at the gym 48
4.1.2.2. Availability of handwashing stations 49
4.1.2.3. Availability of Water 51
4.1.2.4. Availability of detergents for handwashing 52
4.1.2.5. Usage of handwashing facilities and hand sanitiser 52
4.1.2.6. Social distancing and wearing of nose masks 54
4.2. Results of Qualitative In-depth interviews 57
4.2.1. Demographic Characteristics of In-depth interviewees 57
4.2.2. Extent of Knowledge of COVID-19 safety and prevention protocols among gym users 58
4.2.3. Attitudes towards COVID-19 safety prevention protocols among gym users 64
4.2.4. Perceptions of COVID-19 safety and prevention protocols among gym users 70
4.3. Chapter summary 78
CHAPTER FIVE 79
DISCUSSION OF FINDINGS 79
5.0. Introduction 79
5.1. Adherence to COVID-19 safety and prevention protocols 79
5.2. Knowledge of COVID-19 safety and prevention protocols (behavioural attitudes) 84
5.3. Attitudes towards COVID-19 safety and prevention protocols (subjective norms) 86
5.4. Perceptions of COVID-19 safety and prevention protocols (behavioural attitudes/ subjective norms) 88
5.5. Chapter summary 89

CHAPTER SIX 91
SUMMARY, CONCLUSION AND RECOMMENDATIONS 91
6.0. Introduction 91
6.1. Summary of the study 91
6.2. Conclusions of the study 92
6.2.1. Adherence to COVID-19 safety and preventive protocols 92
6.2.2. Knowledge of COVID-19 safety and preventive protocols 93
6.2.3. Attitudes toward COVID-19 safety and preventive protocols 94
6.2.4. Perceptions of COVID-19 safety and preventive protocols 94
6.3. Contribution to knowledge 95
6.3.1. Contribution to policy and practice 95
6.3.2. Contribution to theory 95
6.3.3. Contribution to methodology 96
6.4. Recommendations of the study 96
6.4.1. Management of gyms centres 97
6.4.2. Gym users 97
6.4.3. Ministry of Health/Ghana Health Service/Ministry of Youth and Sports 98
6.5. Limitations to the study 99
6.6. Future Research 99
REFERENCES 100
APPENDICES 108
Appendix A – Participant information sheet 108
Appendix B - Informed Consent Form 110
Appendix C: Semi-structured Interview guide for exploring factors associated with adherence to COVID-19 protocols among gym users in the Greater Accra Region 113
Appendix D: Checklist for Assessing adherence to COVID-19 protocols among gyms in the Greater Accra Region 115
Appendix E: Ghana Health Service Ethical Clearance Form 121

LIST OF TABLES

Table 4.1: Background and Location of gyms and fitness centres……47

Table 4.2: Reminders on handwashing at the gym……50

Table 4.3: Availability of handwashing facilities at gyms …..……51

Table 4.4: Availability of water……...…….52

Table 4.5: Availability of detergents for handwashing…….53

Table 4.6: Use of handwashing facilities and hand sanitiser…….54

Table 4.7: Social distancing and wearing of nose masks…….56

Table 4.8: Demographic characteristics of in-depth interviews……..…….57

LIST OF FIGURES

Figure 1.1: Graph showing the percentage of compliance and non-compliance with wearing of face masks……6

Figure 2.1: Theory of Planned Behaviour……27

Figure 2.2: Conceptual Framework ……29

LIST OF ABBREVIATIONS

CDC	- Centre for Disease Control
CHPS	- Community-based Health Planning and Services
COVID-19	- Coronavirus disease 2019
GAR	- Greater Accra Region
SARS- CoV-2	- Severe Acute Respiratory Syndrome coronavirus 2
WHO	- World Health Organisation
CHAG	- Christian Health Association of Ghana

DEFINITION OF TERMS

COVID-19 safety and prevention protocols: This refers to all measures put in place to prevent the spread of the SARS- CoV-2 virus and includes measures such as wearing of face masks, physical distancing and washing of hands with soap and water. It is also referred to as COVID-19 safety protocols, COVID-19 preventive protocols, COVID-19 safety and preventive protocols or safety protocols in this study.

Social distancing - This is the maintenance of physical distance between people and reducing the number of times people come into close contact with each other in order to prevent the spread of a contagious disease. It is also referred to as physical distancing in this study.

Face masks: This is a personal protective equipment worn on the face to cover the mouth and nose and serves as a mechanical barrier that interferes with direct airflow in and out of the respiratory orifices. In this study, it is also referred to as nose masks or protective masks.

CHAPTER ONE

INTRODUCTION

1.0. Background to the study

Coronavirus disease- 2019 commonly referred to as COVID-19 is a respiratory illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2) (Centers for Disease Control and Prevention (CDC), 2019). This new virus was first discovered during an outbreak of a pneumonia-like illness in Wuhan City of the Hubei Province in China (Cennimo, 2021). The first case of COVID-19 was reported on December 31, 2019, to the World Health Organization (WHO), and subsequently declared a global pandemic on March 11, 2020 (Pan American Health Organization, 2020; Wee, & McNeil, 2020).

Symptoms of COVID-19 include fever, cough, difficulty in breathing, general malaise, headaches, new-onset loss of taste and smell, which are mostly mild (Cennimo, 2021). Although the SARS-CoV-2 virus primarily causes a respiratory illness, it has various systemic manifestations, including renal complications, endocrine system disorders, gastrointestinal dysfunctions, myocardial abnormalities and arrhythmias, which could cause severe disease and ultimately death (Sarkesh et al., 2020).

Wu and McGoogan (2020), indicated that out of 72,314 confirmed cases of COVID-19, patients who reported mild symptoms formed 81%, 14% reported severe symptoms, 5% reported critical symptoms and 2.3% reported fatal symptoms. Other reports around the world confirmed similar

patterns (Mizumoto & Chowell, 2020; Wilson et al., 2020; Zhang et al., 2021). Although this may seem like a low case fatality rate, as of 15 July, 2021, more than 4 million individuals had died from COVID-19 globally, with Ghana recording more than 800 deaths (Worldometer, 2021). This goes to show the seriousness of the infection and the need to reduce transmission by all means possible.

The COVID-19 can be spread from an infected person to another when they are in close proximity to each other (Cennimo, 2021). What happens is that small respiratory droplets containing the SARS- CoV-2 viruses are produced when an infected individual talks, sneezes or coughs. Anyone close (typically within 6 feet or 1 meter) who inhales these droplets exposes themselves to COVID-19 infection (Centers for Disease Control and Prevention, 2020). The infection may also be transmitted when these infected droplets come directly into contact with the mucous membranes of others such as the eyes, mouth and nostrils (World Health Organisation (WHO), 2020). These viruses may also be transferred from contaminated surfaces when individuals touch those surfaces and subsequently, touch their eyes, nostrils or mouth without washing their hands (World Health Organisation, 2020). Some conditions that may increase the spread of COVID-19 include enclosed spaces, close-contact settings, crowded spaces and poorly ventilated rooms (World Health Organisation, 2020).

It is interesting to note that most of these enabling conditions can easily exist in gyms and fitness centres, and with the added likely possibility of increased expiratory exertion during exercise sessions, gyms and fitness centres become fertile grounds for transmission of COVID-19

(Lendacki et al., 2021). Some reports have even suggested that group exercise sessions in fitness centres were responsible for some super spreader events (Majra et al., 2021).

Apart from direct human to human transmissions that may occur in gyms, individuals may become infected with COVID-19 when they touch infected surfaces of workout benches and bars (Nishiura et al., 2020). Recent outbreaks in some fitness centres and other indoor crowded spaces also suggested that short-range aerosol transmission of SARS-CoV-2 in gyms might be possible (World Health Organization, 2020).

Considering the presence of such conditions in gyms and fitness centres, it is no surprise that there have been outbreaks of COVID-19 in gyms and fitness centres around the world (Stephenson, 2021). An epidemiological study uncovered an outbreak of COVID-19 at a sports centre (Brlek et al., 2020). In the Honolulu province of Hawaii, USA, clusters of COVID-19 outbreaks involving three (3) fitness centres were reported (Groves et al., 2021). At an indoor exercise facility in Chicago, 55 attendees out of 81 were reported to have contracted COVID-19 (Lendacki et al., 2021). In Cheonan, a South Korean city, an outbreak of COVID-19 involving some 112 people was associated with fitness dance classes at some 12 sports facilities (Jang et al., 2020).

These are but a few outbreaks that have occurred in gyms around the world. However, there appears to be limited evidence of such reports in the case of Ghana. Therefore, there was the need for this study to explore the presence of clear COVID-19 safety protocols in various gyms

and fitness centres. Thus, this study assessed factors influencing adherence to COVID-19 safety protocols by attendees in selected gyms in the Greater Accra Region.

1.1. Problem Statement

This section presents analysis of the problems identified in literature related to the topic under study. The importance of gym attendance and utilization cannot be denied. This is due to the well-documented benefits of physical activity in preventing lifestyle diseases or reducing the morbidity and mortality associated with these diseases (Minter-Jordan et al., 2013). Considering how most indoor gyms have been set up, with the close proximity of trainers and trainees and how the very nature of gym activities or exercises require shouting of instructions and heavy breathing, it stands to reason that measures need to be taken in preventing the spread of COVID-19 in gyms and fitness centres (Lendacki et al., 2021).

Studies of outbreaks in gyms and fitness centres have shown that adherence to COVID-19 safety and prevention protocols will prevent the spread of the virus among gym users (Cilhoroz & DeRuisseau, 2021). It is, therefore, necessary to ensure that these protocols are being adhered to in various gyms.

Any problem with adherence to the COVID-19 protocols may lead to the spread of the infection among gym users as different variables may influence adherence. A study found that there existed significant differences among demographic groups in the tendency to comply with quarantine orders, with women, most educated people, middle-aged individuals, and health workers more likely to adhere to preventive protocols (Carlucci, D'ambrosio, & Balsamo, 2020). In one study in Vietnam, it was determined that the percentage of inhabitants adhering to various

COVID-19 safety protocols ranged from 97.4% to 88.2% (Nguyen et al., 2020). Another study among the general population in Iran showed similarly impressive results with 95.4%, 93%, and 80% of the public adhering to washing of hands with soap and water, avoidance of crowded places and the use of hand sanitisers respectively (Kakemam et al., 2020).

On the contrary, results from studies in some African countries have shown a low level of adherence to the various COVID-19 safety protocols (Amodan et al., 2020; Hager et al., 2020). A study in Uganda, for instance, revealed that only 29% of respondents adhered to regular hand washing, wearing of facemasks and physical distancing measures (Amodan et al., 2020). Another study in two different African countries revealed that only 36% of respondents followed all the recommended COVID-19 related health protocols (Hager et al., 2020).

A study in Ghana assessed adherence to various COVID-19 safety and prevention protocols such as the wearing of face masks, and the number of bus commuters in over 850 buses wearing a face mask was counted. It was observed in this study that, some 87.4% of people were not compliant with face mask protocols within public transportation (Dzisi & Dei, 2020).

It has been suggested that knowledge has an influence on behaviour, especially when that knowledge is evidence-based (Heiwe et al., 2011). Similarly, knowledge of COVID-19 safety and prevention protocols may be helpful in the behaviour towards those protocols.

An Iranian study involving some 1,480 individuals observed that all respondents knew of COVID-19, and when it came to knowledge of safety and prevention protocols, majority of

respondents, 95.3% and 92.5% were aware of self-isolation and frequent hand washing practices respectively and its benefits (Kakemam et al., 2020).

However, another study in one African country noticed that the prevalence of poor knowledge with regard to COVID-19, in general, was almost 34%, with poor knowledge being significantly associated with poor practice of preventive protocols (Akalu et al., 2020). When it came to knowledge specific to COVID-19 safety and prevention protocols, 78.5% of respondents were aware of the washing of hands with soap and water while 75.7% knew that wearing a mask was important in the prevention of COVID-19 (Akalu et al., 2020). Akalu et al. (2020), realized that factors such as inability to read or write and living in rural areas were significantly associated with having poor knowledge of COVID-19 safety and prevention protocols.

Just as knowledge of COVID-19 safety protocols can influence adherence, the attitude that individuals have towards these protocols may affect whether or not they adhere. A study in the Middle East, found that 76.1% reported that they covered their mouth and nose while coughing and sneezing (Kakemam et al., 2020). In another study among 1,015 individuals who had at least, secondary education, mean attitudes and practices toward COVID-19 safety protocols were 66% and 60.4% respectively (Adesegun et al., 2020).

The Oxford Learner's dictionary (2021) defines perception as "the ability to understand the true nature of something" or "have insight into something. This section presents an analysis of how gym users may view or perceive the COVID-19 safety and prevention protocols with the hope that most people will have a positive view of safety and prevention protocols. Although not

much work has been carried out on how gym users perceive these protocols, the analysis could draw on work that has been done with other populations.

In a scooping review in Sub-Saharan Africa, it was determined that in six out of 28 studies, the majority of respondents perceived that they were at risk of contracting COVID-19, which was contrary to one study in which only 36.1% of respondents perceived that they were at risk of COVID-19 infection (Nwagbara et al., 2021).

In another study in Ethiopia, the perception of how difficult or easy various safety and prevention protocols were was assessed (Akalu et al., 2020). Akalu et al. (2020), noticed that 54.9%, 49.0%, and 17.6% of respondents perceived that it was quite easy to avoid touching their face with an unwashed hand, giving others a handshake, and going into crowded places respectively. In that same study, 73.2% of individuals perceived the frequent washing of hands with a soap to be very easy and 51.7% perceived that obeying physical distancing measures was very difficult (Akalu et al., 2020).

From the above analysis of the problems with adherence, knowledge, attitudes and perceptions toward COVID-19 and its safety protocols, it stands to reason that adherence needs to be improved and for this to be achieved, other factors such as knowledge, attitudes and perceptions will need to be improved as well.

1.2. Justification of Study

This section presents an analysis of the gaps in current literature. There appears to be scanty information on the incidence of COVID-19 among gyms in Ghana even as other parts of the

world have reported and documented outbreaks in gyms (Amagasa et al., 2020; Jang et al., 2020). Thus, there was the need to conduct this current study based on the justifications made below.

A high level of adherence to the COVID-19 protocols will reduce the incidence of infections thereby giving the chance to improve the physical health of gym users. A study observed that an 8-week CrossFit intervention programme positively affected the general physical well-being and improved the emotional perceived self-efficacy in healthy adolescents in Italy (Catelli et al., 2021). Another study found that respondents who exhibited the perception, anxiety, and susceptibility to risk of contracting COVID-19 disease were found significantly more likely to adhere to quarantine guidelines in Italy (Carlucci et al., 2020).

A study determined the behaviours of people with regard to COVID-19 safety protocols and observed that 37.2% of individuals who visited gyms and fitness centres did not maintain social distancing protocols while exercising (Willis, 2021). Since there appears to be a gap in the literature related to the above level of compliance with COVID-19 protocols among gym users in Ghana, this study would fill the gap and contribute to literature accordingly.

Another area in which this study would help in filling the gap is the knowledge that gym users have with regard to the COVID-19 safety and prevention protocols. It is expected that having knowledge of these protocols and their importance will help individuals to adhere to them. As demonstrated in earlier paragraphs of this chapter, various studies had focused on the knowledge of individuals and different populations with regards to COVID-19 and its safety and preventive

protocols (Akalu et al., 2020; Kakemam et al., 2020; Nwagbara et al., 2021; Siddiqui et al., 2020; Tii et al., 2021). However, there seems to be very little work done globally and also in Ghana that explored the knowledge that gym users had of COVID-19 and its related safety and preventive protocols. Concerning the attitudes and perceptions that gym users have with regards to COVID-19 safety protocols, it could be said that these have a direct influence on whether or not they will adhere to the safety protocols (Ebrahimi et al., 2021). As such, it was important to determine the attitudes and perceptions of gym users towards COVID-19 safety protocols. Some research has been conducted in Ghana to determine among other things, the attitudes and perceptions of different groups of people such as public transport users and pregnant women of COVID-19 and its safety protocols (Bonful et al., 2020; Dzisi & Dei, 2020; Tii et al., 2021). However, there seems to be no data specific to gym users and their attitudes towards or perceptions of COVID-19 safety protocols.

It was therefore, anticipated based on the above analysis that this study would help shed light on the reasons why people adhered to safety protocols while using these fitness facilities. It was anticipated that this study would help to know how to improve adherence to COVID-19 safety protocols among gym users, thereby helping in reducing possible outbreaks in these facilities.

1.3. Objectives of the study

The objectives of the study have been presented as general and specific as below.

1.3.1. General Objective

The general objective of the study was to assess factors influencing adherence to COVID -19 safety protocols among gym users in the Greater Accra Region.

1.3.2. Specific Objectives

The following specific objectives helped to achieve the general objective:

1. To examine the extent of adherence to available policies or guidelines on COVID-19 prevention in gyms.
2. To explore the extent of knowledge of COVID-19 safety and prevention protocols among gym users.
3. To examine the attitude towards COVID-19 safety and prevention protocols among gym users.
4. To explore the perception of COVID-19 safety and prevention protocols among gym users.

1.3.3. Research questions

This research sought to answer the questions below;

1. What is the extent of adherence to available policies or guidelines on COVID-19 prevention in gyms?
2. What is the extent of knowledge of COVID-19 safety and prevention protocols among gym users?
3. What is the attitude towards COVID-19 safety and prevention protocols among gym users?
4. What is the perception of COVID-19 safety and prevention protocols among gym users?

1.4. Outline of the Dissertation

The study has been presented in chapters one to six. Chapter one presents the introduction where the background, problem statement, justification, objectives and research questions have been detailed. Chapter two presents a detailed analysis of various studies that have been conducted in connection with COVID-19 safety and prevention protocols. The literature analysis focuses on knowledge, adherence, attitudes and perceptions toward COVID-19 and its safety protocols. This is followed by the third chapter, which is the methods. This chapter details how the study was conducted in the field, including the study design, population, sampling strategies and study variables assessed. Chapter four presents the results obtained from data collected. The fifth chapter is the discussion of the results in tandem with current literature. The sixth and final chapter presents the summary, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.0. Introduction

This chapter presents a discussion of the concepts relevant to this study by reviewing contemporary literature and examining the elements that influence gym users' compliance with COVID-19 standards and policies and the accompanying procedures and regulations. This is divided into five sections: prevalence of COVID-19, adherence to COVID-19 protocols, knowledge, attitude, and perception. This chapter further discusses the theoretical framework that relates to the factors that influence adherence to COVID-19 preventive protocols in gyms after examining contemporary literature.

2.1. Prevalence of COVID-19

Early in 2020, the globe was caught off guard by the COVID-19 pandemic, leaving the world unprepared for the ensuing consequences. As of November 12, 2020, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) had spread rapidly over the world, with 52 million confirmed infected cases and more than 1.2 million related deaths (Ebrahimi et al., 2021). In the meantime, countries' principal tools for combating the virus' contagious spread were behavioural interventions (Ferguson et al., 2020). The World Health Organization (WHO) has advised the adoption of essentially two central kinds of viral mitigation techniques to achieve this goal (World Health Organisation, 2020). The World Health Organisation (2020), observed that this technique includes;

1) Social Distancing Protocols (SDPs) such as lockdowns, quarantine, isolation and

2) Improving the efficiency and frequency of Hygienic Behaviour (HB), which involves adequate handwashing and disinfection procedures.

In Ghana, as of 20th March 2022, there had been a total of 160,925 confirmed cases and a reported 1,445 deaths (World Health Organization, 2021a). Globally, more than six million deaths had been confirmed from over 480 million identified cases of COVID-19 (World Health Organization, 2021a).

2.2. Adherence to COVID-19 Protocols

A study notes that maximum viral shedding of SARS-CoV-2 occurs early in the course of the illness (Javid et al., 2020). As a result, patients may be contagious before they show symptoms or realise that they have been infected. Using real-time mobility data from Wuhan, a study, underlined the impact of transportation in virus transmission across China (Komla et al., 2020). Komla et al. (2020), realised that the spatial distribution of COVID-19 cases in China might be explained by human mobility patterns. Although alterations in the demographics of reported cases outside of Wuhan were still indicative of local chains of transmission after the deployment of lockdowns, this correlation declined and infection growth rates went negative in most regions (Komla et al., 2020).

Face masks are also important in preventing the transmission of COVID-19 (Liu & Zhang, 2020). Liu and Zhang (2020), based their findings on an examination of a typical cluster

outbreak in China caused by public transportation exposure. These researchers explained that when one person travelling from Chongqing, China, and did not use a face mask, they transmitted the COVID-19 virus to five other persons in the same vehicle, but on the second leg of the same journey when they wore a face mask, no one in a second vehicle contracted the disease.

To screen and treat all passengers who had come into contact with the suspected case, the Centres for Disease Control and Prevention undertook an epidemiological investigation and close contact tracing (Liu & Zhang, 2020). The 14-day medical examination revealed that none of the passengers who came into contact with the infected person after they wore a face mask developed COVID-19, while 5 of the 39 passengers who came into contact with the infected individual on the initial bus did (Liu & Zhang, 2020). Wearing a face mask reduces transmissibility per encounter by limiting the transfer of contaminated droplets, as demonstrated in both laboratory and clinical settings (Howard et al., 2020). Howard et al. (2020), claimed that using face masks to limit the spread of the virus was most successful when compliance was high among big populations.

Suppression policies also known as 'lockdown' tactics, including social distancing behaviours were implemented to slow the spread of the pandemic and reduce the number of patients (Hills & Eraso, 2021). The UK required people to stay at home and only leave once a day to exercise, commute to and from work when working from home was not practicable, shop for necessities, and attend to any medical or care needs (Public-Health-England, 2020). People were asked to spend as little time outside as possible when leaving their homes for approved purposes and to

preserve a minimum distance of two metres from anyone outside their homes (Public-Health-England, 2020).

In addition, the social distancing measures included a shielding policy for severely vulnerable people, as well as self-isolation for those who developed symptoms and a 14 day quarantine for those who did not develop symptoms, but came into contact with someone who had COVID-19 (Public-Health-England, 2020). The police were given powers to implement the policy, such as dispersing crowds in parks, guaranteeing security in crowded stores, or breaking up a home party, including the ability to find and fine those who broke the guidelines (Shang et al., 2020).

Although there is evidence that COVID-19 droplets could move further than two metres, social distancing methods have been successful in the United Kingdom (Setti et al., 2020). Public Health England (2021), Indicated that a second lockdown was implemented on 5 November 2020 in the UK, which coincided with a dramatic decline in cases from a peak of 33,470 cases on 12 November 2020 to 11,299 cases on 24 November 2020, following a one-week lag.

Furthermore, Brauner et al. (2021), modelled the effectiveness of non-pharmaceutical interventions in 41 countries, and concluded that reducing physical contacts, such as closing schools and universities, limiting gatherings to 10 people or less, and closing face-to-face businesses were all helpful in significantly reducing transmission. Brauner et al. (2021), contend that social distancing and other non-pharmacological measures were the most effective techniques in decreasing COVID-19 infections until a vaccine offers herd immunity.

The pandemic's rapid spread threatened to overwhelm healthcare institutions and the global economy. To save millions of lives, people may have to put up with social isolation for a long period. To prevent the disease's spread, aggressive testing was combined with relentless contact tracing, quarantine of people who had been exposed to the infection, and isolation of the sick since COVID-19 infections currently, had no recognised pharmaceutical therapy (Gennaro et al., 2020).

Supportive and preventive actions are the most effective weapon at this time. However, supportive medical treatment, such as the use of air pump ventilators to aid breathing and dialysis to aid failing kidneys, is often employed in emergencies to save the lives of COVID-19 patients (Shang et al., 2020). Good cleanliness, antiseptic use, and social separation are all proven preventive measures. To avoid COVID-19 transmission, the WHO recommends the following steps (World Health Organization, 2021b):

1. Wash hands frequently with soap and water or antiseptics;
2. Maintain social distance;
3. Keep your hands away from your eyes, nose, and mouth.
4. Observe proper coughing etiquette;
5. Remain at home;
6. Seek medical help if symptoms worsen;
7. Follow a health authority's directives;
8. To avoid contracting COVID-19, minimize unnecessary trips to healthcare facilities; and
9. Allow for efficient operation of the systems.

2.3. Factors influencing adherence to COVID-19 protocols

This section examines the elements that influence gym users' compliance with COVID-19 standards and policies. Factors influencing adherence to COVID-19 and accompanying procedures and regulations have been divided into three sections: knowledge, attitude, and perception.

2.4. Adherence to Available Policies or Guidelines on COVID-19 Prevention in Gyms

Gyms, as well as fitness centres, are high-touch, close-proximity environments where rigorous activity increases the range at which people expel respiratory particles since they are breathing more heavily (Aleisha & Chai, 2021). In order to mitigate this occurrence, some institutions have come up with policies or guidelines directing codes of conducts at gyms and fitness centres. An example of such a guideline is what have been developed by the United Nations Division of Healthcare Management and Occupational Safety and Health (DHMOSH). This document which is titled "*Guidance for Gym Operations Within UN Premises in the Context of COVID-19*" serves as a policy document indicating various guidelines that gyms and gym members should comply with in order to prevent the transmission of COVID-19 in these facilities. Other institutions such as the Centers for Disease Control and Prevention (CDC) have published similar guidelines to help guide various practices at gyms and fitness centres. Gyms and fitness centres will therefore need to adapt these guidelines to suit their local setting and situations.

Adherence to the COVID-19 policies in these gyms can be influenced by a variety of factors, including personal characteristics, attitudes and perceptions (Picorelli et al., 2014; Pinelli et al., 2021). An observational study in the United States of America, noticed that 46.7% of gym

attendees fully wore a mask, 4.8% only partially wore masks, and 47.5% had no mask on at all while working out (Willis, 2021). Willis (2021), looked at physical distancing adherence in gyms and found that when it came to physical distancing of 6ft or 1m in the gym, 62.7% of the attendees adhered to the 6ft distance between each other while about 37% did not maintain physical distancing.

2.5. Knowledge of COVID-19 Safety and Prevention Protocols among Gym Users

The only method to deal with a pandemic like COVID-19 is to prevent it. The WHO has provided public health recommendations aimed at raising awareness and equipping individuals with the knowledge they need to prevent and protect themselves from COVID-19 (Siddiqui et al., 2020).

While it is critical for communities to open businesses safely and to maintain physical and emotional health, Gym centres are a type of business that provides social, mental, and physical activities - Many communities benefit from them because they improve well-being and promote inclusivity (Higgerson et al., 2018). Gyms were the last to reopen in several cities around the world. They may, however, provide an even greater danger of virus transmission than usual indoor work environments. Indeed, a preliminary investigation found that a state-wide dance class in gym centres produced over 110 instances of COVID-19 in Korea (Jang et al., 2020).

By March 31, 2020, three COVID-19 clusters had been discovered in Japanese gym facilities (Amagasa et al., 2020). As of March 21, the first cluster recorded in a gym facility had 25 primary cases of COVID-19 that spread to 14 additional people in the same facility, making it

Japan's second-highest infection rate (Amagasa et al., 2020). Furthermore, Lendacki et al. (2021), discovered a COVID-19 epidemic at a Chicago gym centre, where 68% of in-person workout participants contracted the virus between August 24 and September 1, 2020. On admission, participants were required to wear a mask, have their temperature checked, and have their symptoms monitored (Lendacki et al., 2021). However, the researchers noted that the majority of them did not comply with the requirement of wearing a mask while exercising, and the study did not measure room ventilation (Lendacki et al., 2021).

Groves et al. (2021), reported a COVID-19 outbreak in three Hawaiian gym facilities (with some comparable instructors), where 45% of participants in stationary cycling, personal training, and/or kickboxing courses contracted the virus between June 27 and July 1, 2020. The instructor(s) who eventually tested positive yelled for support and instruction. Most, but not all, classes practiced social distance, and most participants did not wear a mask or utilize High-efficiency Particulate Air (HEPA) filters (Cilhoroz & DeRuisseau, 2021).

Nishiura et al. (2020), also indicated that the risk of COVID-19 was 19 times higher in enclosed spaces than in open-air conditions. Because of the lack of ventilation, virus-containing aerosol particles can remain concentrated and active for prolonged periods, increasing the risk of infection (Liu et al., 2015). Liu et al. (2015), informed that maintaining a social distance of 6 feet or more at all times during practice was equally critical, but it was far more beneficial when combined with mask usage and sufficient facility ventilation. If an open-air exercising facility is not possible, proper ventilation (using air cleaners/purifiers) and social distance regulations (at

least 6 feet apart) should be followed. Furthermore, Moriyama et al. (2020), discovered that a humidity level of 50–80% in the air at a room temperature of 22ºC reduces the risk of infection.

A study assessed the knowledge that the general public and determined that, 84% of respondents knew that they had to wash their hands with soap and water for at least, 20 seconds to prevent COVID-19 (Siddiqui et al., 2020). In another study it was determined that while all respondents knew what COVID-19 was, some of them had various misconceptions as to the cause, with 48.3% indicating it was transmitted by air and 58% agreeing that COVID-19 was transmitted by animals (Kakemam et al., 2020). Siddiqui et al. (2020), however, found that 75% of respondents knew that coughing and sneezing into their elbow could help reduce the spread of the virus, 82% appreciated that COVID-19 transmission was by increased physical contact such as shaking hands, 79% had knowledge that maintaining a physical distance of at least, six feet was important in reducing the spread of COVID-19

As has been already established in this literature review, gyms and fitness centres pose an increased risk of COVID-19 transmission. Knowledge of COVID-19 safety and prevention protocols will therefore, be important in the prevention of the spread of the virus. In one study among gym attendees, it was observed that as much as 61.6% had no awareness of the need to adhere to the general safety and preventive protocols in the gyms such as the use of disinfectant wipes before and after the use of gym equipment (Almasri et al., 2020). In a qualitative study in Brazil, on the other hand, it was reported that there was a generally low knowledge concerning the use of face masks in places of physical activity such as gyms (Silveira et al., 2020). There seems to be little research done in Africa and Ghana among gym users, which looks at the

COVID-19 protocols. Thus, this current study was based on the limitation of such an assessment amongst gyms and users in the Greater Accra Region.

2.6. Attitude Towards COVID-19 Safety and Prevention Protocols among Gym Users

The fitness industry has been particularly hard struck by the COVID-19 pandemic and the social distance measures that have been implemented (Benveniste, 2020). Some studies found similar results, with 68% of fitness club members in the United States saying they were unlikely to return if the pandemic was not addressed in some way (Alexandris et al., 2021; Lange, 2020). Due to the changing type of limitations that fitness club members are encountering and will continue to confront, there have been many changes in their attitude during COVID-19.

While some of the behavioural restrictions are beginning to relax as states in the United States 'reopen' their leisure services, a study argued that it was unclear how long the pandemic-induced restrictions on leisure would last (Stodolska, 2021). Stodolska (2021), opined that whereas the normal intrapersonal, interpersonal, and structural restrictions documented in pre-COVID-19 studies still apply today, it appears that additional constraints will emerge, influencing club members' decision to exercise in gyms. A study suggested that more research was needed on the exercise attitude of 'fitness freaks,' who used to go to the gym regularly to maintain their physical fitness levels, appearance, and health, but have stopped or changed their fitness behaviour as a result of COVID-19 (Kaur et al., 2020).

Gym and fitness participants have used a variety of bargaining methods to get around their limitations and get back into shape (Kim et al., 2020). One of the most significant shifts in fitness behaviour has been the substitution of indoor activities with home-based, online, and outdoor activities (Davalos, 2021; Sivan, 2020). The question of whether or not these modifications are permanent remains unanswered. According to a poll in the United States, 38% of respondents said they would not feel safe returning to the gym or exercise courses for at least the next six months (Alexandris et al., 2021). Alexandris et al. (2021), argued that identifying the characteristics that would impact fitness club members' decisions to return to the gym was consequently of academic and managerial interest. There appears to be a gap in the literature on the attitude of gym users towards the COVID-19 protocols. Hence, this current research was aimed at taking this suggestion on board by placing it within the context of gyms in the Greater Accra Region.

2.7. Perceptions of COVID-19 Safety and Prevention Protocols among Gym Users

Until recently, wiping the training surface at the gym with sterilizing items before and after exercise was regarded as customary social politeness rather than a health-related safety measure (Almasri et al., 2020). Almasri et al. (2020), explained that the usage of sterilisation goods such as sterile wipes or sprays, on the other hand, is less typical within the gym centre. With the recent resumption and reopening of gyms and fitness centres around the world, health ministries around the globe issued a required precaution that individuals using those gyms and fitness centres should follow, which included (Almasri et al., 2020):

1) before and after each usage, sanitise all sports equipment and tools;

2) the alternative use of other gym equipment by user is prohibited (rounds);

3) prohibiting another person from assisting with training for example weightlifting;

4) To ensure the implementation of social distancing, the distance between the equipment is not greater than 1.5-2 meters;

5) decreasing the pool capacity to prevent overcrowding in the pool area and ensuring a spacing of at least 1.5-2 meters between trainees;

6) only one person should use the sauna, steam room, or Jacuzzi at a time, and the facility should be cleansed thereafter;

7) requiring users to sit on clean towels while using the gym facilities; and

8) ensure that no two users utilize the same piece of equipment or a facility at the same time.

The current literature appears to be silent on the perceptions of gym users of the COVID-19 protocols. Therefore, this current study explored this among gym users in the Greater Accra Region.

2.8. Theoretical Framework

This section presents a discussion of the theoretical framework underpinning this study after reviewing recent literature related to the factors influencing adherence to COVID-19 prevention protocols in the previous sub-session. Many theories, according to the researcher, could properly explain the factors influencing adherence to COVID-19 prevention protocols in gyms and fitness centres. However, the Theory of Planned Behaviour was used in this study (Ajzen, 1985).

The Theory of Planned Behaviour (TPB) was proposed with the specific objective of broadening the explanatory scope of the Theory of Reasoned Action (TRA) (Ajzen, 1985). Recognising that at least part of the acts that social psychologists are trying to explain and understand aren't completely under volitional control, a new construct termed perceived behavioural control was added (Ajzen, 1985). Ajzen (1985), intimidated that the individual's perception of how easy or difficult it is to do the behaviour in issue is represented by this construct. An activity that is believed to be easy to accomplish has a high level of perceived behavioural control, while one that is perceived to be difficult has a low level of perceived behavioural control. According to the TPB, someone with a high perception of behavioural control over a particular behaviour is more likely to form the intention to perform that behaviour and is more likely to follow through on that intention despite obstacles and setbacks than someone with a low perception of behavioural control (Kagee & Freeman, 2008).

Kagee and Freeman (2008), showed the view that in the same way, as attitudes toward conduct and subjective standards are considered as being based on beliefs in the TRA, perceived control is seen as being based on control beliefs in the TPB. These should reflect direct, witnessed, and relevant experiences with the behaviour, as well as other circumstances that may raise or decrease the perceived difficulty of doing the conduct in question (Kagee & Freeman, 2008).

Figure 2.1 depicts the TPB. As shown, perceived behavioural control influences both intentions and attitudes toward conduct, as well as subjective standards and behaviour and intentions (Ajzen, 1985). The process of jointly determining intents is simple: it is thought that when

people create intentions, they consider how much influence they have over their actions. In two approaches, the combined determination of behaviour and intentions can be understood.

The first is related to motivation: someone with high perceived behavioural control and a strong want to do something will simply try harder to carry out that desire than someone with a similar desire but lower perceived behavioural control (Ajzen, 1985). The second explanation is that when someone intends to conduct a behaviour but fails to do so, it is due to a lack of control over the action (Ajzen, 1985). Ajzen (1985), notes that the function of perceived behavioural control here is 'non-psychological,' in the sense that it is a lack of actual control, not a loss of perception of control, that causes the failure to act in line with goals. A measure of perceived behavioural control, on the other hand, should help predict behaviour to the extent that perceived control is accurate, reflecting a lack of actual control (Ajzen, 1985).

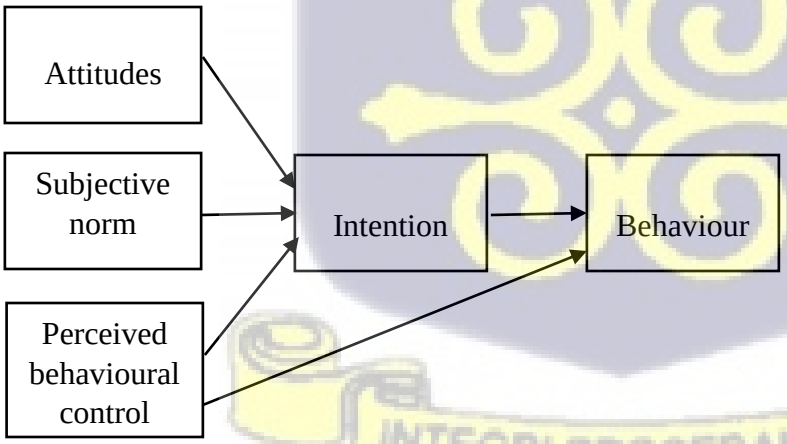


Figure 2.1: Theory of Plan Behaviour. Source: Ajzen (1985).

2.9. Conceptual Framework of factors influencing Adherence to COVID-19 Prevention Protocols among gym users

Whereas the large proportion of a psychological and environmental constraint on one's leisure activities and habits, studies have been directly related to intentions and/or actual gym behaviour, with the goal of identifying the factors that influence an individual's decision to participate in gym and fitness activities, there have been a few attempts to link them with the TPB aspects (Alexandris et al., 2021; Stodolska, 2021). The purpose of this line of research was to find out what factors influence the formation of attitudes, subjective norms, and perceived behavioural control (factors influencing adherence to COVID-19 prevention protocols) positively or adversely.

In a study among gym and fitness users, it was observed that constraint dimensions could predict TPB elements (Alexandris et al., 2021; Stodolska, 2021). As a result of the three factors, Perceive Behavioural Control (PBC) had the largest percentage of variation predicted. This prediction was aided by the psychological, time, knowledge, and lack of interest factors. Individuals who are subjected to significant psychological, time, knowledge, and interest restrictions are less likely to be able to control their sports behaviour (Alexandris et al., 2021). The conceptual framework for the current research is depicted in figure 2.2. The conceptual framework shows that adherence to the COVID-19 protocols among the gym users could be influenced by their knowledge, attitude and perception.

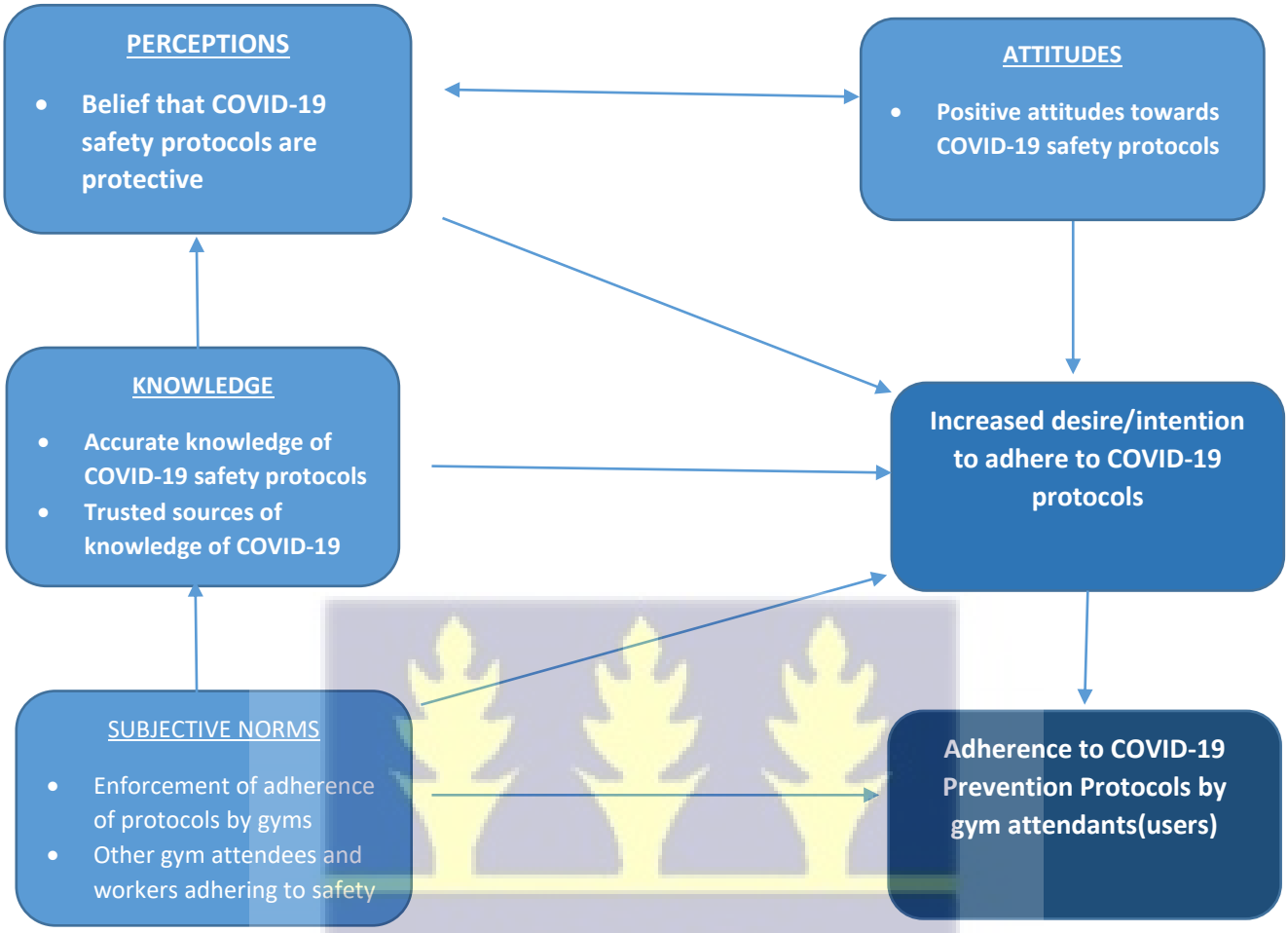


Figure 2.2: Conceptual framework of factors influencing Adherence to COVID-19 Prevention Protocols among gym Attendants (Users).
Source: Author's construction.

2.10. Chapter Summary

This chapter analysed factors that influence adherence to COVID-19 preventive protocol. To conceptualise the relevance of the variables for this study, the chapter considered the Theory of Planned Behaviour (Ajzen,1985) in order to achieve the study's goals. Thus, determining factors influencing adherence to COVID -19 safety protocols among gym users in a developing economy such as Ghana. The next chapter will present the methods employed in carrying out the research.

CHAPTER THREE

METHODS

3.0. Introduction

This chapter describes in detail how the research was carried out. It includes ten main sections that describe the philosophical perspective upon which the study was based, the study design, study area, study population, inclusion and exclusion criteria, sampling strategies, data collection, ethical considerations, timelines and the budget for the study. The chapter concludes with a chapter summary.

3.1. Philosophical perspective

Being a qualitative study, the philosophical perspective upon which the study was based was relativism. The New World Encyclopaedia defines relativism as "the view or claim that there is no absolute referent for human beliefs, human behaviours, and ethics" (New World Encyclopedia, 2019). Villa (2010) defines relativism as;

> all the (strong versions) or at least a significant and large part (weak versions) of the criteria and beliefs of a cognitive, cultural, semantic, ethical or aesthetic, etc. character (according to the sphere referred to) depend on — and therefore are related to — a context (which can be a paradigm, a culture, a language, et cetera) chosen each time as a reference point; and this means that there is no position, point of view or parameter outside any

> context making it possible to effect a completely neutral evaluation of these elements, and therefore to make any affirmations in absolute terms (p173).

Various studies that have applied this philosophical concept of relativism have demonstrated that, it can be useful in different aspects of an issue that may not be initially obvious to the researcher (D'Agostino, 2003; Villa, 2010).

Relativism as a philosophical perspective was appropriate for this research as it helped to explore the different perspectives the individuals had when obeying COVID-19 protocols and how to ensure that they adhered to these protocols. This study also made use of the collection of natural data through observation and description of the adherence to COVID-19 safety protocols at various gyms and fitness centres. This method of gathering data has been argued as constituting a perspective of qualitative research (Silverman, 2000).

3.2. Study Design

This study was a descriptive cross-sectional design in which the prevalence of an outcome of interest in a particular sample population is assessed at a particular point in time and characterised (Alexander, Lopes, Ricchetti-Masterson & Yeatts, 2014). This study design was appropriate in describing adherence to the COVID-19 safety protocols among gyms.

The study was a qualitative design. A qualitative design was appropriate for this study as it helped to establish the various views and opinions concerning COVID-19 safety protocols. The study had two distinctive parts. The first part took the form of a descriptive and observational compliance survey of adherence to COVID-19 safety and preventive protocols by gyms and fitness centres. The second part comprised of in-depth interviews with gym attendees about their

adherence to COVID-19 safety protocols. During the interviews, the knowledge, attitude and perception of the participants with regard to the safety and preventive protocols were explored.

3.3. Study Area

The study was conducted in the regional capital of Ghana, the Greater Accra Region (GAR).

Geography and Demography

Although its land surface area of 3,245 square kilometres makes it the smallest region in Ghana, GAR is the second most populated region with a population size of 5,455,692, accounting for 17.7% of Ghana's population, with females being 2,776,629 (50.9%) and males being 2,679,063 (49.1%) (Ghana Districts, 2019; Ghana Statistical Service (GSS), 2021).

The Greater Accra Region(GAR) is bordered by the Eastern Region on the north, the Volta Region on the east, the Central Region on the west and the Gulf of Guinea on the south. Administration of the GAR is done politically through the local government system, under which the region is divided into 29 Metropolitan, Municipal and District Assemblies (MMDAs). Each of these MMDAs is administered by a Chief Executive and a Member of Parliament.

Economic status

Being the economic hub of Ghana, the primary economic activities in GAR are financial. Other economic activities include agriculture, fishing, and manufacturing such as processed food, lumber and plywood. The population of economically active individual 15years and older is 2,428,054 (1,281,257 males and 1,146,797). Out of this number, 2,114,880 of them are employed

whilst 313,174 remain unemployed. A little over half (51.8%) of economically active individuals in the GAR are self-employed with no employees, while 32.6% are employees. A higher number of females (62.6%) compared to males (41.6%) are self-employed without employees. Males are also 1.5 times more likely to be employees compared to females (GhanaStatisticalService, 2021).

Healthcare Provision

Healthcare in the GAR is provided by several health facilities comprising of 2 Teaching hospital , 1 University hospital in the Ayawaso West municipal area, 1 Regional hospital, 2 psychiatric hospitals, 111 hospitals, 22 polyclinics, 32 health centres, 101 maternity homes, 299 clinics and 707 CHPS facilities. All of these facilities are a network of government, private CHAG and quasi-government facilities. The number of workers in these various health facilities is estimated to be 10,055 with clinical staff being 6,286, which forms 1.608 per 1000 population of the GAR (Snow et al., 2013). The various CHPS, health centres and maternity homes are community based and provide care for minor illnesses including maternal care services and also embark on health promotion exercises.

The bigger health care facilities such as the hospitals, polyclinics and clinics offer more advanced services including specialized medical care, surgical services and caesarean sections. These are located within the districts of the region and headed by a medical superintendent who reports to the district health director. The regional hospital, teaching hospitals and university hospital offer even more specialized care and perform complex surgical procedures. They are the tertiary facilities that receive referrals from other lower health facilities(Ghana Health Service, 2022).

Gym Centres

A total of 20 gyms used in this study were all located in the Greater Accra Region. Some of these gyms were big enough to accommodate about 30 participants at a time and had large membership sizes of over 100 attendees per week, while other gyms involved in this study had a few (about 5-10) participants using the facility at a time. The various gyms accessed included; the Fitrip Gym, California Fitness Center, Golds Gym, Aviation Social Centre, Pulse Fitness, Branch Fitness, Total Fitness Health Club, Sweat Out, New World Gym, Power House Gym, Body Fitness Center, Fitness 1st, Pro Fitness, Bond Gym, Body Basics Gym, Parker's fitness Center, Bukom Fitness & Physio, Body Talk Gym, J &J Fitness Body Center, 11 Fitness Gym. Most of these gyms were located in the Accra Metropolitan area. The various gyms, their location and their expected attendance are shown in Table 4.1.

3.4. Study population

The population for this study was the staff of the various selected gyms in the Greater Accra region and also the gym attendees.

3.4.1. Inclusion criteria

The study included gyms or fitness centres legally registered in Ghana and were operational. The inclusion criteria for individual interviews were among others, any gym attendee above the age of 18 years who agreed to participate.

3.4.2. Exclusion criteria

This study excluded any facility or individuals who refused to participate in the study.

3.5. Sampling strategies

A mixture of strategies was used to determine the size of the sample to use and how to select the members of the sample.

3.5.1. Sample size determination / Selection of the study sites and participants

A sample size of 20 gyms was used for the descriptive and observational compliance survey of adherence to COVID-19 safety and preventive protocols. This selection of the number of gyms for inclusion was done upon consultations with several gym instructors and administrators. No sample size formula was applied since this was a qualitative study. In Ghana, there appeared to be no association of gyms or fitness centres or a regulatory body. Information on the number of fitness centres was, therefore, not well organised. However, upon consultations with some gym administrators and instructors, it was noted that the number of gyms that were big enough and well patronised such that at least 50 or more attendees could be present at the same time were about ten (10).

Those ten (10) gyms were, therefore, selected and an additional 10 were added. A sample size of 15 attendees was used for the in-depth interviews. A total of 15 in-depth interviews were conducted instead of a target of at least 20 with one interview per gym. This was because not all gyms and fitness centres granted access to their clients. However, a sample size of 15 was deemed adequate for the in-depth interviews since it was estimated that 6 interviews were equivalent to 70% of saturation and 12 interviews were equivalent to a saturation of 92% (Guest et al., 1995). The researcher also noted that no new themes were emerging after about 12

interviews. This was consistent with the view of other researchers who theorized that most themes are identified after 5-6 interviews (Francis et al., 2010).

3.5.2. Sampling methods

As indicated earlier, a total of 20 gyms were sampled using appropriate strategies for this study.

Purposive Sampling

The first ten (10) gyms were selected purposively. In a purposive sampling method, the researcher uses his own judgement in selecting participants who possess the characteristics needed to adequately assist in answering the research questions (Etikan et al., 2016).

Simple Random Sampling

The remaining 10 gyms were selected through a simple random sampling method. In a simple random sampling method, each member of the population has an equal chance of being selected and included in the sample (Arnab, 2008). These ten (10) gyms were selected randomly as a result of the inadequate number of gyms with a large enough patronage to ensure being included in the purposively sampled group. A list of gyms and fitness centres legally registered in Ghana and operating in the Greater Accra Region was therefore obtained from the Registrar General's office. The gyms on the list were all assigned numbers and using an internet-based random number generator, ten were selected to make up a total of 20 gyms.

Convenience Sampling

Additionally, 15 gym attendees were selected for the in-depth interviews a convenience sampling method from the gyms previously selected. In a convenience sampling method, the researcher

selects participants based on how easy it is to get access to them (Etikan et al., 2016). Participants who, therefore, met the inclusion criteria and were available and easily accessible and also willing to participate were included in the sample. It must be noted that the goal was to recruit 20 interviewees with at least one (1) interviewee from each gym, but some gyms although participated in the first part of the study, refused the researcher access to their clients.

3.6. Data Collection

Data was collected between the months of February and March, 2022. Two types of methods were applied as explained below.

Descriptive and observational survey

A survey can simply be defined as the gathering of information from a sample of the population (Scheuren, 2004). When conducting a descriptive research, the ultimate goal is to describe a particular phenomenon (which in this case, was adherence to COVID-19 protocols) and its characteristics or properties (Nassaji, 2015). Since the researcher was interested in what was happening rather than how or why something was happening, an observation and survey tool was used to collect the data. Although the data was collected qualitatively, it could be analysed quantitatively using simple descriptive statistical analysis (Nassaji, 2015).

Silverman (2000), argues that a researcher can use simple additions or descriptive statistics in a qualitative study and still term it as a qualitative study. This research was therefore, a descriptive and observational survey. Data from the descriptive and observational survey of adherence to COVID-19 safety and preventive protocols among gyms and fitness centres was collected using

a gym/fitness centre hygiene and social distancing assessment tool adapted from the WHO hand hygiene self-assessment framework and also work from earlier studies (Bonful et al., 2020; World Health Organisation, 2010). The tool (checklist) generally, looked for whether gyms were adhering to personal hygiene and social distancing protocols in 6 main areas including, reminders on handwashing at the gym, availability of handwashing stations, availability of water, availability of detergents for handwashing, usage of handwashing facilities, social distancing and wearing of nose masks. Assessment of various gyms using the checklist was done by the researcher with the help of two research assistants.

In-depth interviews

In-depth interviews are a qualitative method of collecting data that usually employs the use of discovery-oriented, open-ended questions to explore a respondent's view, experience or perspective of a particular subject (The Wallace Foundation, 2007). When the interviewer makes use of predetermined open-ended questions, which guide the interview but allow for further exploration of the topic, it is referred to as a semi-structured interview (Cohen & Crabtree, 2006). The in-depth interviews with the gyms users were conducted using a semi-structured interview guide. The semi-structured interview guide was set within a framework where the following questions were asked:

1. What is the extent of adherence to available policies or guidelines on COVID-19 prevention in gyms?
2. What is the extent of knowledge of COVID-19 safety and prevention protocols among gym users?

3. What is the attitude towards COVID-19 safety and prevention protocols among gym users?
4. What is the perception of COVID-19 safety and prevention protocols among gym users?

The interviews were done on the premises of the various gyms and lasted for an average period of 30 minutes. The interviews were recorded using a mobile phone for transcription later. Non-verbal cues were taken note of by the interviewer using a notebook. The semi-structured interview guide used has been shown (see appendix C).

3.6.1. Quality assurance

Data collection was carried out by the researcher and three research assistants. These three research assistants were trained to ensure adequate collection of data and their data was cross-checked to ensure accuracy and completeness. The in-depth interviews were carried out by the researcher using the semi-structured interview guides and responses were accurately transcribed from the voice recordings.

3.6.2. Pretesting

A pretesting of the adapted checklist was carried out in two gyms and results reviewed to determine if any final changes were needed to be made before the final data collection was carried out. The semi-structured interview guide was also pretested by conducting an interviews with five gym attendees to determine its adequacy and completeness and changes resulting therefrom were made to it.

3.6.3. Validity and Reliability

To ensure validity and reliability of the study, the research assistants were first of all trained and supervised during the data collection process. Their work was also checked to ensure completeness and accuracy. The researcher also adhered to the principles of conducting trustworthy qualitative research outlined by some researchers (Lincoln & Guba, 1984). This involved ensuring credibility, transferability, dependability and confirmability. Some steps that were taken to ensure these included making sure that data collected, themes developed from transcripts and final report were all cross checked by someone else (assistants cross checked the work of the researcher and vice versa), and all the work was reviewed by the supervisor as suggested by earlier researchers (Alexander, 2019).

To further enhance the reliability and validity of the study, respondents of the in-depth interviews were assured that they would remain anonymous and no information could be traced back to them. Observations were also made in a naturalistic setting. Attendees of the various gyms were observed at a distance and their workout was not disturbed. This was done in order to reduce the Hawthorne effect. The Hawthorne effect is when study subjects systematically alter their behaviour when they know they are being observed (Jain, 2015)

3.7. Data processing and analysis

This section explains the two methods of data analysis conducted in this study as below.

Descriptive statistics

Data collected using the descriptive and observational survey from the various gyms on adherence to COVID-19 safety protocols was entered into Excel 2016 and simple descriptive

analysis was used to summarise the data. Frequencies and percentages were calculated and used for analysis of the data.

Interview data analysis

Recordings from the in-depth interviews were transcribed into Microsoft text and read repeatedly for adequate familiarisation. With the help of a qualitative data analysis software (Quirkos), a thematic analysis of the transcribed data was done using the approach proposed by some analysts (Braun & Clarke, 2013). This approach involves six steps, namely;

1. **Familiarization with data** – this can be done through repeated reading of transcribed data. Audio recordings can also be listened to several times to ensure key ideas are identified.

2. **Generation of initial codes** – here, the researcher organizes the data into meaningful and manageable segments. Together, all of these segments or chunks of data describe various ideas in the transcribed data.

3. **Searching for themes** – the researcher then organizes various codes under emerging themes. This can be done by putting together codes that are related to each other under a common theme.

4. **Reviewing of themes** – This stage involves refinement of already identified themes. Here, some themes are combined and others discarded.

5. **Defining and naming themes** – the narrative structure of each theme is determined here which helps the researcher to establish the essence of each theme. Names generated will therefore appropriately define each theme.

6. **Producing a report** – with appropriate example from data extracts, the researcher puts into writing an analytic and interpretive account of the data with the goal of answering the research questions.

This method of qualitative data analysis was appropriate for this research as it helped to present a clear picture of the various ideas or themes in the data.

Codes that were used to identify participants during the interviews, were also used during analysis of the data. These codes were generated by combining the initials of the gym and the number of interviewees. The first person interviewed at Total fitness was therefore given the code TF1 and the second interviewee was given the code TF2. The initials for 11 fitness and Fitness 1st were EF and FF respectively. Table 4.1 contains the list of gyms and their designated initials. The interview transcripts were read over and over to allow the themes to emerge and confirmed with the use of qualitative data analysis software (Quirkos).

3.8. Ethical considerations

Various ethical issues considered have been organised and presented below.

3.8.1. Ethical clearance

Ethical clearance was obtained from the Ghana Health Service Ethics Review Committee. The ethical clearance form with reference number GHS-ERC: 020/02/22 is shown in Appendix E.

3.8.2. Permission from study sites

Permission was sought from various gym managers before collecting data from their facility. In seeking permission from gym managers, an introductory letter was obtained from the Health Policy, Planning and Management (HPPM) department of the University of Ghana School of Public Health and presented to the various gym managers. The introductory letter explained to the managers the purpose of the research.

3.8.3. Participant consent

Individuals who were interviewed also signed a written consent form to indicate their willingness to participate in the study. The participant information sheet and informed consent forms are shown in appendices A and B respectively.

3.8.4. Voluntary participation

It was explained to participants that they were at liberty to withdraw from the study at any point in time if they so desired with no undesirable consequences from such withdrawal.

3.8.5. Confidentiality and anonymity

It was ensured that information obtained from participants was not shared with any other person and was used for the purposes of the study only. Participants were given identification numbers to ensure that no information would be traceable to them.

3.8.6. Risks and Benefits

There existed a possible minimal risk of participation in this study such as the disruption of the exercise routine of individuals and the discomfort that existed in answering questions regarding "obedience" of public protocols, especially if such individuals do not adhere to the safety protocols. It was however, anticipated that the results of this study would help obtain a better understanding of why individuals would adhere to safety protocols or not and inform decision makers on more efficient ways of rolling out such policies.

3.8.7. Data storage and usage

Data collected from facilities using the checklist and transcribed data from interviews were kept in a cabinet and locked up with only the researcher having access to the key. Soft copies of data and recordings of interviews were password protected on a laptop with a backup on an external hard drive with only the researcher and supervisor having access to it. The data will be kept for a minimum of three years before the researcher will decide whether to destroy it or not.

3.8.8. Compensation

Participants were not given any financial compensations for taking part in the study.

3.8.9. COVID-19 Protocols

All principles and guidelines outlined by the GHS-ERC, including national and WHO advised protocols were strictly adhered to during the conduct of the study. This involved the provision of face masks and hand sanitisers for individuals being interviewed and maintenance of physical distancing throughout the course of the data collection. The researcher and research assistants were fully vaccinated.

3.8.10. Funding

No external source of funding was secured for this study. All expenses were borne by the researcher.

3.8.11. Conflict of interest

The researcher had no conflict of interest to declare.

3.9. Chapter Summary

This chapter explained how the research was conducted in terms of the how, where and when data was collected, analysed and interpreted. The chapter was divided into various subsections, namely; introduction, philosophical perspective, study design, study area, study population, sampling strategies, data collection, and ethical considerations. The next chapter presents the results based on data collected and analysed.

CHAPTER FOUR

RESULTS

4.0. Introduction

This chapter presents the results and analysis of the study. The chapter has two distinct parts, with the first part being results from the descriptive observational survey and the second part being a presentation of results from the in-depth interviews. The first subsection of this chapter presents the background or location of the various gyms and fitness centres assessed. The chapter then presents an analysis of the six main areas used in assessing adherence to COVID-19 protocols, namely the presence of reminders on handwashing at the gym, availability of handwashing stations, availability of water, availability of detergents for handwashing, social distancing and wearing of nose masks.

The chapter then proceeds to presents the results and analysis of the in-depth interview (IDI) findings. The interviews conducted explored the extent of knowledge of COVID-19 safety protocols among gym users and examined the perceptions of and attitudes towards COVID-19 safety and prevention protocols among gym users. The chapter begins with a description of the demographic characteristics of the various interviewees who were all gym users. The chapter then presents a summary of the chapter.

4.1. Analysis of the checklist

This section presents analysis of results relating to the checklist used for the participant observation study. It is divided into sections such as; reminders on handwashing at the gym, availability of handwashing stations, availability of water, availability of detergents for handwashing, usage of handwashing facilities, social distancing and wearing of nose masks.

4.1.1. Background or Location of gyms and fitness centres

A total of twenty (20) gyms and fitness centres were assessed. All the facilities assessed were indoor gyms or fitness centres with 16 of them being in the Accra Metropolitan area of Greater Accra, 2 being in the Ga Central Municipality and the Weija-Gbawe and Adenta Municipalities containing 1 each of the gyms assessed. These gym centres have been described in table 4.1 as indicated in the study area section of the chapter three.

Table 4.1: Background or Location of gyms and fitness centres

No	Name of Gym/Fitness Centre	Location	Expected Attendees per week
1	California Fitness Centre CF)	Spintex (Ayawaso West Wuogon Sub-district)	210
2	Fitrip Gym (FG)	Dzorwulu (Accra Metropolitan Assembly)	180
3	Power House Gym (PHG)	Taifa (Ga East Municipality)	50
4	11 fitness (EF)	Weija (Weija sub-municipality)	80

5	J &J fitness body centre (JFB)	Agape (Ga Central Municipality	70
6	Body Talk gym(BT)	Akweteman (Okaikwei North Sub-Metro)	40
7	Bukom Fitness & Physio (BFP)	(Ring Road) Ablekuma south Sub-Metro	210
8	Parker's fitness center(PFC)	Anyaa (Ga Central Municipality)	50
9	Body Basics Gym (BBG)	Achimota (Okaikwei North Sub-Metro)	140
10	Bond Gym (BG)	Adenta (Adenta East Sub-district)	90
11	Pro Fitness (PF)	Adabraka (Korley Klottey Municipal Assembly)	70
12	Fitness 1st (FF)	Airport (Ayawaso West Wuogon Sub-district)	175
13	Body Fitness Center (BFC)	Dansoman (Ablekuma South Sub-Metropolitan Assembly)	105
14	New world Fitness(NWF)	Dzorwulu (Ayawaso West Municipality)	70
15	Sweat Out (SO)	Legon Hills (Kpone Katamanso Municipality)	70
16	Total Fitness Health Club (TF)	East Legon (Accra Metropolitan Assembly)	210
17	Branch Fitness Gym (BFG)	Spintex (Ledzokuku Municipality)	175
18	Pulse Fitness (PF)	East Legon (Ayawaso West Wuogon Sub-district)	140

19	Aviation Social Centre(ASC)	Airport (Ayawaso West Wuogon Sub-district)	175
20	Golds Gym (GG)	East Legon (Ayawaso West Wuogon Sub-district)	80

4.1.2. Adherence to available policies or guidelines on COVID-19 prevention in gyms

This subsection presents analysis of the data obtained from the use of checklist to ascertain the extent of adherence to the available policies or guidelines on COVID-19 prevention in the gyms studied. The key areas of the protocols covered included; reminders on handwashing at the gym, availability of handwashing stations, availability of water, availability of detergents for handwashing, social distancing and wearing of nose masks. The results have been presented below.

4.1.2.1. Reminders on handwashing at the gym

The 20 gyms and fitness centres were assessed using the checklist to see if they had reminders on COVID-19 safety and preventive protocols, especially handwashing at the gym. The various gyms were inspected for the presence of posters telling gym users to wash their hands, how to wash their hands and not to cough or sneeze into their hands or the open air. It was observed that 8 out of the 20 gyms had posters reminding users to wash their hands. However, none of the facilities inspected had reminders on the correct hand washing techniques and 3 of the gyms had reminders on proper coughing and sneezing etiquette. In 11 of the 20 gyms, workers were noticed reminding gyms users to wash their hands or offering alcohol-based hand sanitisers as the gym users entered the facility. The results are indicated in table 4.2.

Table 4.2: Reminders on handwashing at the gym

Categories	Frequency
Presence of handwashing reminders at the gym	
Yes	8
No	12
Posters showing correct handwashing technique	
Yes	0
No	20
Presence of other hygiene reminders (e.g. coughing or sneezing into tissue or elbow)	
Yes	3
No	17
Workers reminding gym users to wash their hands	
Yes	11
No	9

4.1.2.2. Availability of handwashing stations

It was found that all the 20 gym centres assessed had a place for handwashing at their facility. However, a larger number, 13of the gyms had more than one place for handwashing whereas, the remaining 7 also had only one place for handwashing at their facility. Furthermore, a higher number, 18 of the gym centres used a sink at their place of handwashing whereas, only 2 used both a sink and veronica bucket at the point of handwashing at their facilities. The results are shown in Table 4.3 below.

Table 4.3: Availability of handwashing stations

Categories	Frequency
Place of handwashing at the gym	
Yes	20
No	0
Place of handwashing and number facilities	
Only 1	7
More than 1	13
Nature of handwashing place	
Sink only	18
Sink and veronica bucket	2
Availability of handwashing place to all at the gym	
Yes	20
No	0

4.1.2.3. Availability of Water

The results revealed that all the 20 gym centres that were observed in this study had water available at their facilities. The majority of the gym centres, 17 had their source of water from a running tap whereas, a few of them, 3 had their source of water from a veronica bucket only. In addition, all the gym centres observed had visibly clean water. The results are depicted in Table 4.4 below.

Table 4.4: Availability of water

Category	Frequency
Availability of water	
Yes	20
No	0
Source of water	
Running water	17
Veronica bucket	3
Water visibly clean	
Yes	20
No	0

4.1.2.4. Availability of detergents for handwashing

As depicted in table 4.5, almost all, 19 of the gym centres assessed had a soap available at the point of handwashing whereas, only 1 did not have soap at the point of handwashing. Also, 19 of the gym centres had alcohol-based sanitisers available at more than one point whereas, 1 did not have alcohol-based sanitisers at their gym. The results are shown in Table 4.5 below.

Table 4.5: Availability of detergents for handwashing

Category	Frequency
Availability of soap (solid/liquid) at a handwashing place	
Yes	19
No	1
Availability of alcohol-based sanitiser at the gym	
Not available at all	1
Available at more than one point	19

4.1.2.5. Usage of handwashing facilities and hand sanitiser

From the 20 gym centres that were assessed in this study, it was found that users used the handwashing facilities infrequently in 15 of them whereas only 3 gyms had people frequently using the handwashing facilities. However, there were 2 gyms where no one was observed washing their hands at the handwashing stations.

It was also observed that in the majority of gyms, 17 visitors used alcohol-based sanitisers before entering the gym or while using the gym facilities. Meanwhile in 3 of the gyms, users were not observed to be using alcohol-based sanitisers when entering or while exercising. As expected therefore, none of the gyms had users queuing or crowding around handwashing facilities to use them.

Moreover, in a higher number, 18 of the gyms, users were observed to be using soap when washing their hands whereas, in a few of the gyms, 2 users were not observed to be using soap when washing their hands. The results are shown in Table 4.6 below.

Table 4.6: Usage of handwashing facilities and hand sanitiser

Categories	**Frequency**
Usage of handwashing facilities	
Not at all	2
Infrequently	15
Frequently	3
People queue to wash hands	
Yes	0
No	20
Soap usage when washing hands	

Yes	18
No	2
Alcohol-based sanitiser usage when entering or during exercise	
Yes	17
No	3

4.1.2.6. Social distancing and wearing of nose masks

During this study, observations were done in order to find out if gym users were maintaining physical distancing and wearing facemasks while using the gym facilities. Out of the 20 gym centres, a higher number, 17 ,had no visible messages on social distancing displayed at their facilities whereas, 3 had visible messages on social distancing at their gyms.

It was also observed that 18 of gyms had no observable infrastructural changes to ensure social distancing whilst only 2 gyms had observable changes to their facility to ensure social distancing.

Again, a majority, 16, of the gym centres had not made any arrangement to ensure social distancing whilst only 4 had made observable changes such as spacing of equipment and seating areas to ensure social distancing at their gyms.

When it came to observable actions at social distancing, in majority 19 of gyms, no users were observed deliberately trying to socially distance, with only onegym having users who were keeping appropriate social distance while interacting with each other. In majority 17 of gyms, instructors and other workers were not observed ensuring appropriate social distancing whilst in 3 gyms workers were observed maintaining adequate social distancing. Again, in majority, 19of gyms, users were not observed deliberately trying to avoid touching surfaces such as doors handles and tables, whilst in one gym users were noticed making an effort to avoid touching surfaces that could lead to the spread of the COVID-19 virus. These efforts include not leaning on surfaces when interacting with others.

In addition, in 14 of the gym centres, a few users were observed wearing nose masks whereas, in 6 of the gyms, no user was observed wearing a nose mask. There also wasn't observed in any of the gyms where the majority of the individuals wore a nose mask. These and other results are depicted in Table 4.7 below.

Table 4.7: Social distancing and wearing of nose masks

Categories	**Frequency**
Visible communication/messages on social distancing	
Yes	3
No	17

Infrastructural changes to enable social distancing	
Yes	2
No	18
Arrangement by the gym to ensure social distancing	
Yes	4
No	16
Observable actions by gym users to ensure social distancing	
Yes	1
No	19
Observable actions by staff of gym to ensure social distancing	
Yes	3
No	17
Wearing of protective clothes (masks)	
Yes	14
No	6
Gyms users effort not to touch surfaces	
Yes	1
No	19
TOTAL	**20**

4.2. Results of Qualitative In-depth interviews

This section presents analysis of the results from the qualitative in-depth interviews with the gym users at the selected gyms in the Greater Accra Region. Generally, the main themes developed responded to the following questions asked: What is the extent of adherence to available policies or guidelines on COVID-19 prevention in gyms?; What is the extent of knowledge of COVID-19 safety and prevention protocols among gym users?; What is the attitude towards COVID-19 safety and prevention protocols among gym users?; and What is the perception of COVID-19 safety and prevention protocols among gym users?. Quotes from some of the interviewees were also used to support the analysis made.

4.2.1. Demographic Characteristics of In-depth interviewees

A total of 15 individual interviews were conducted with 13 of them being males and two being females. Ten of the interviewees had obtained tertiary education while 5 had completed secondary school. The majority (10) of the interviewees were between the ages of 26 and 35 years, four were between 18 and 25 years while one person was above the age of 35 years. Other characteristics are included in table 4.8, which depicts the demographic characteristics of the interviewees.

Table 4.8: Demographic characteristics of in-depth interviewees

Demographic Characteristic	Frequency
Sex	Males- 13 Females- 2
Age	18-25- 4 26-35- 10 >35- 1
Marital Status	Single- 14 Married- 1
Educational Status	Secondary- 5 Tertiary- 10
Vaccination Status	Vaccinated- 7 Non-vaccinated- 8

4.2.2. Extent of Knowledge of COVID-19 safety and prevention protocols among gym users

In order to explore the extent of knowledge that the interviewees had of COVID-19 safety and prevention protocols, they were asked about what they knew of COVID-19, the safety protocols and also the vaccination. This section, therefore, presents an analysis of interviewees' knowledge of COVID-19, its prevention and safety protocols and vaccination.

Knowledge of COVID-19; Causes, Symptoms and Transmission

The interview data analysed revealed that all interviewees had heard about COVID-19, and most of them knew what it was, the symptoms involved and the mode of transmission;

"… Alright the causes of COVID-19, the spread of COVID-19 is social gatherings when you are gathered at one place and an infected person or someone who is carrying the virus gets to the place without wearing the nose mask or he touches other people and the virus spreads…" (BF1)

"…So, I know it's caused by a virus and the symptoms too, because of the mutation it kind of varies though the common one is cough, flu, feverishness then some will complain of headache stomach upset, joint pain so on..." (FG1)

"… we know that COVID-19, we can spread it by touching. When someone coughs in the air and they don't close their mouth and you breathe it in you can catch it. Standing next to people with COVID and they are breathing next to you. That's how I understand it spreads…" (FF1)

Although some interviewees didn't know exactly what causes the disease, they were aware of the mode of transmission. This showed that the educational campaign had not been very extensive since most people heard about COVID-19 on television and radio:

"…honestly, I don't know what really causes COVID-19, but all I can say is what we've been hearing, and it says you need to wash your hands, you need to wear your face masks because it's air pollution or whatever it is…" (TF2)

It must be noted that for almost all of the interviewees, knowledge of COVID-19 was obtained passively while on social media, listening to the news or talking to friends. This also revealed the current mode of transmitting health information, which is likely to reach a sizeable number of the youth in the country:

"...I heard it on the news and online, I also had friends who had travelled to China so they told me what was going on..." (EF1)

"...The first time I heard about it was last year when a friend had the COVID..." (BF1)

However, there were other interviewees who actively sought for information on COVID-19 from credible sources and international organisations:

"...I heard of COVID late in 2019, before it left the shores of China... I know the mode of transmission and how to prevent the transmission...I follow WHO on LinkedIn ..." (PF1)

From the above analysis, it could be seen that interviewees generally, had a good idea of what COVID-19 was and how one could get infected, and even though there were a few interviewees who didn't know the exact cause of COVID-19, they had all heard about it.

Safety protocols

In assessing the knowledge of interviewees with regard to the safety protocols, interviewees were asked if they were aware of the safety protocols in place to help prevent COVID-19 infection. All interviewees were able to mention some basic COVID-19 safety protocols, including washing of hands, wearing of facemasks and maintenance of physical distancing in public places. It was expected that the management of the gym centres had put in place physical structures to enable the users to be able to follow such safety protocols, which contributed to enhancing the knowledge of the users as well:

"…the other thing … is washing your hands, wearing nose masks, using the sanitiser every time to sanitize your hands and you do that frequently…" (FF1)

"… from the beginning, we wear the mask, we stay away from people like give distance, talking to people you make sure you are masked and make sure wherever you go when you come back, you wash your hands or have your sanitiser in your pocket or something to sanitize yourself…" (BA1)

"…So, the way by which you can prevent it is to avoid overcrowded places, wear your nose mask sanitize your hand regularly…when I know I am getting to a crowded place I wear my nose

mask, I get my sanitiser small bottle. Any time I get in touch with someone… I just clean with the sanitiser…" (BF1)

Interviewees were also asked what could be done to protect people from being infected with COVID-19. It was expected that those who knew about the safety protocols would state these protocols as the means to protecting themselves from COVID-19. As expected, most of the interviewees mentioned the COVID-19 safety protocols as the means through which to protect people from COVID-19 infection. However, a few of the interviewees mentioned things they thought could protect them from COVID-19. This showed how the interviewees were very serious in their desire to prevent the spread of the virus. Nevertheless, since some people were also religious, they demonstrated their faith in the living God to protect them from contracting the condition:

"…It's God that can protect us from COVID and the second thing is that you have to regularly exercise and drink lots of water…" (ASC1)

"…Actually, they say if you have it you have to sit in the sun …" (PFG1)

Such responses as recorded above may indicate that, although the safety protocols were well known, some individuals may not really trust its effectiveness in the prevention of the COVID-19 infection.

Knowledge of COVID-19 vaccination

Interviewees were also asked if they knew about the vaccination to prevent the spread of the COVID-19 infection. The analysis showed that all the interviewees knew of the COVID-19 vaccination. However, some of them claimed that they didn't have knowledge of where to access the vaccines while others felt they didn't have enough knowledge of the vaccination process although they had heard of it. The evidence indicated that there was much information about the availability of the vaccines, but not conversant with how to access them at the time since the distribution was in batches:

"…The vaccination I know they are doing it so I have taken mine I took Moderna so I took it twice …" (BG1)

"…I know there are two kinds, either the one jab or 2 jabs… I have made the efforts but when I went they said it wasn't available…" (GG1)

"…We were supposed to go and take it but they said they are not giving it again at where we went so I don't know if you will get it in any hospital or not…" (PFG1)

"…I don't know all of them. I have heard Johnson and Johnson and the rest…" (FF1)

"…In terms of the vaccination, I don't really know much…" (ASC)

4.2.3. Attitudes towards COVID-19 safety prevention protocols among gym users

In this subsection, the attitudes of individuals towards COVID-19 safety and prevention protocols and vaccines were explored by inquiring from the interviewees what they would do in specific situations. Therefore, the interviewees were asked what they would do if they suspected that they had COVID-19, what they did generally to protect themselves from COVID-19 and what measures they would take when exercising in order to protect themselves from COVID-19. Participants were also asked about their reasons for vaccinating or otherwise as at the time of the study.

Attitudes towards COVID-19

As part of the safety protocols, individuals who suspected that they had COVID-19 would need to seek medical care while quarantining themselves until they could confirm the presence or absence of the disease. Therefore, it was expected that individuals who suspected that they had COVID-19 would have to follow this protocol. Therefore, the interviewees were asked what they would do if they suspected that they were infected with COVID-19. As expected, most of the interviewees agreed that they would need to confirm the diagnosis of the COVID-19 at a health care facility and subsequently isolate themselves if positive:

"…If I suspect that I have COVID, the first thing is that I will have to avoid people and at least report to a place like 37 (37 Military Hospital) or Legon (Legon Hospital) for a check-up to see if everything is okay or not. I think that's what I will do to prevent giving it to someone or sharing it…" (ASC)

"…I'll try and quarantine myself or isolate myself for weeks to treat myself before I step out because if I have an experience like I'm suffering from COVID-19, I'll make sure I do the test to clarify if it is negative or positive. When I get to know… I'll isolate myself from work and everybody just to avoid the spread of the disease…" (BF1)

"…actually, I just have to go to the hospital and run the test to know how I'm doing, but first because it's just like malaria maybe you have to check if its malaria and when it comes out that you don't have malaria or other diseases then you advance to check with the Corona test…" (FF1)

"…If I suspect that I have COVID, I will first get tested and if it happens that it is positive, I will first need to isolate I don't need to come to work …and I remember I was given some azithromycin so probably I will self-medicate…" (FG1)

There were other interviewees who held the view that some herbal remedies would be appropriate if they suspected that they had COVID-19. This was in view of the different remedies that were proposed when no confirmed cure had been found:

"…I think that I will first have first aid. I will have lime juice and water and distance yourself from people so you can quarantine yourself for some time…" (GG1)

"…The very first time I had it, I just used our local stuff, the neem tree, boiled it, put it in a bucket and covered myself with a blanket and inhaled the fumes/steam and drank some of the water and took paracetamol and my immune system just kicked in…" (FF1)

Other interviewees also insisted that continued exercise and herbal treatment would be of help:

Interviewer: "If you suspect you've COVID what will you do?"

Interviewee (TF2): "I'll train harder"

Interviewer: "Let's say you start getting the symptoms, the fever?"

Interviewee (TF2): "I'll train harder"

Interviewer: "Apart from that will you do anything else?"

Interviewee (TF2): "I'll do the local remedies. The ginger, the garlic".

Attitudes toward COVID-19 safety Protocols

Interviewees were also asked if they actually practiced the various safety and preventive protocols in their everyday lives and also if they applied it when exercising at the gym. All the interviewees agreed that the various COVID-19 safety protocols were helpful and others applied further protocols such as wiping instruments with disinfectant solutions before and after their training sessions. It came to light that the interviewees had positive attitudes towards the COVID-19 safety protocols at the gyms:

"…what I do generally to protect myself is to wear my nose mask. Once I am out, I am always on my nose mask…Well, the rule of the gym is that you have to clean before you use, so you need a towel and if you don't have a towel, you can't gym because you will sweat onto the machines…" (ASC)

"…The only thing you can do to prevent it at the gym is you make sure you wipe the sweat and every machine you touch you make sure there are towels there to take care of it before using. And make sure you have your gloves and sanitise them after using…" (BA)

"…Yeah, first thing I do is wash my hands, use sanitiser, try as much as possible to keep my distance even when I am trying to work out…before I use the machine, I wipe it down and after using the machine too I wipe it down…" (CG1)

…It's difficult working out with the nose masks that one I can say for sure, but you should regularly wash our gym apparels or towels and using our sanitisers when entering or after touching a metal. So, there are sanitisers and tissues that we use to wipe the machines and all that…" (GG1)

"…When here (the gym) is crowded I wear my nose mask and use the sanitiser and you know people sweat so if you sit on it (points to an exercising bench) you have to clean it before the second person comes…" (PFG)

"…When I am on the gym floor, I don't touch my face or mouth or anything…" (FF1)

The observation was that the interviewees were following the basic safety protocols needed to prevent the spread of the COVID-19 infection at the gyms.

Attitudes towards COVID-19 vaccinations

To explore the attitudes of interviewees towards the COVID-19 vaccinations, questions were asked as to whether they were vaccinated or not and their reasons for not being vaccinated as

applicable. The analysis revealed that there were some challenges in accessing the vaccines, which was the reason for not being vaccinated whilst others did not think it was necessary:

"…It's true there is a vaccine. Some have taken first jab, second jab, but I personally haven't taken any. I haven't gotten access to it yet, sometimes by the time you get there because of queues you have to just leave and attend to something else…" (BF1)

"…I know there are two kinds either the one jab or 2 jabs. Me, I have made the efforts but when I went they said it wasn't available…" (GG1)

"…We were supposed to go and take it, but they said they are not giving it again at where we went so I don't know if you will get it in any hospital or not…" (PFG)

"…I wanted to take the vaccine initially but didn't get it. Then, I got the COVID and lo and behold I was able to beat it through my own local remedy so now I don't believe in it…" (FF1)

There were others agreed the vaccination exercise was helpful and believed it should be encouraged.

"… I think the vaccination is very good… I am double vaxxed…when I got COVID the second time because I was vaccinated it wasn't serious like the first time…" (FG1)

In general, the observation was that although many interviewees had yet to vaccinate, many interviewees had a positive attitude towards the vaccination exercise and some had not vaccinated because of problems with access. There were a few who however, didn't believe in it.

4.2.4. Perceptions of COVID-19 safety and prevention protocols among gym users

This section presents analysis of the research findings with respect to the various perceptions of individuals of the COVID-19 and its safety protocols. In order to explore these perceptions, questions were asked concerning how serious interviewees viewed COVID-19 and whether or not they felt the safety protocols and vaccinations were protective and necessary.

Perceptions of COVID-19

To explore how people perceived the COVID-19, interviewees were asked if they felt at risk of being infected with the disease. Knowing that gyms and fitness centres could be fertile grounds for such air-borne infections, it was expected that interviewees would appreciate that they were all at risk of getting infected with COVID-19. Many of the interviewees admitted that they felt at risk of being infected with COVID-19. This was against the background of a country where some individuals had misperceptions of the validity of the disease due to a myriad of information and misinformation on social media:

"… oh yes! because sometimes you can feel someone is not coming (to the gym), you will call them to find out and they will tell you "Oh I have COVID" … and during the COVID time gyms were not open so as a fitness guy I had people who used to come to my house to jog and workout … and one day we had a party and I think about 5 people had it (COVID-19)…" (BA1)

"…Yes, I'm at risk because normally I come to the gym, which is a prone area to getting COVID because of the contacts that I'm making with the machines and my people … (TF1)

"…Yes, I am at risk. You know COVID isn't written on anyone's forehead so you can't tell by just looking at the person so if I don't protect myself though I am double vaxxed I still stand a chance of contracting …" (FG1)

"…Oh yeah all the time because you always stand close to people … and most people cannot wear the mask whilst breathing so they will take it off when training so it is very very easy to catch COVID…" (FF1)

There were other individuals who perceived that although there existed a risk of getting infected, there were other factors that prevented them from getting the infection. Some of such factors that were mentioned included a good exercise routine and a healthy diet. Thus, the idea that a good

exercise could help people to boost their chances of avoiding the COVID-19 infection emboldened them to continue with their workouts at the gym centres:

"...I am at risk and I am not at risk because I preach the gospel of exercise so I believe I can get it and I believe by what I am doing it will protect me but that doesn't mean I can't get it..." (ASC)

"...I will say yes and no because in as much as we are trying to follow the protocols, we have others not following it and so there is the risk but then we are controlling it the best way we can..." (PF1)

"...With me, I believe I might get it or I've already gotten it but because I'm always active, I believe the exercise also helps...." (TF2)

Interviewees were also asked how serious they perceived COVID-19 as a disease. Many of the interviewees perceived that COVID-19 was a serious illness:

"...It's very serious because when your immune system is down it can kill you so it's very serious...." (ASC)

"…COVID-19 is very serious; I went to 37 (referring to 37 Military Hospital) and that's where I saw the COVID-19. Like people suffering from COVID 19 and it was very serious…" (BF1)

"…Ok, so generally my idea of COVID is as I said earlier it's a deadly disease. Those who get affected with COVID are quarantined not to mingle with other people. So I think for that fact alone I think it's a very deadly disease and shouldn't be something that you wish for…"- (TF1)

There were others who although knew COVID-19 existed, perceived that it wasn't that serious enough:

"… What is killing us is not COVID, plenty things are killing us when you don't have money, you are stressed all the time even that one is killing us more…" (CG1)

However, there were still some interviewees who doubted the existence and seriousness of the condition, perhaps, due to misinformation or otherwise:

"…as for some of us we don't believe in these things plenty so it's not a problem…" (BA1)

Perceptions of COVID-19 safety protocols

To understand how individuals perceived the COVID-19 safety protocols, interviewees were asked if they thought that the protocols were necessary and also if they were protective. The perceptions expressed by some of the interviewees regarding the use of the COVID-19 protocols as a necessary intervention to prevent infection seemed convincing:

"…Yes, they are necessary because when those precautions are taken closely it's very good since they can play an impact of not getting it or minimizing the risk of getting the COVID…" (ASC)

…Yeah, it's necessary because you might have it and me not having it, you can affect me. Without your nose mask, you can affect me…" (BF1)

"…I believe prevention also helps so the measures… like the lockdown helped and sometimes social distancing also helps…" (CG1)

"…I think it is playing its part statistically, I hear that the covering of nose and what have you had an impact on how the COVID spread, but then at a certain point, we decided to just go about our business because it had become like something that had come to stay so it (referring to COVID-19 infections) skyrocketed again…" (PF1)

"…well, I mean yeah, because I used to look at the daily rate and I feel because some of the protocols are in place it has reduced the infection rate…" (FG1)

"…I think it's necessary because I will say that just wearing of nose mask has just prevented a lot of diseases, not just COVID, so the protocols have brought a lot of benefits…" (NW1)

In the above responses, it was seen that majority of the interviewees perceived that the protocols were necessary and also protective. On the other hand, there were few interviewees who believed that the safety measures weren't protective. Their perception was that contracting the COVID-19 infection could be by chance:

"… it is helping, but I don't think it protects you because even now… they said you are not fully guaranteed of (not getting infected) so I don't think it can protect you…" (BG1)

"…Me I don't think the masks are helpful because my friends I know who wear the masks more than us, they rather got the COVID… personally, I think … if you will get it, you will get it…" (BA1)

"…No, I don't think they protect us. I don't think so…" (PFG)

The analysis showed that the perception of the protective nature of the COVID-19 safety protocols was mixed depending on the experiences of the interviewees.

Perceptions of COVID-19 Vaccines

To explore the perceptions individuals had concerning the COVID-19 vaccines, interviewees were asked if they perceived that the vaccines were necessary and protective. Some of the interviewees agreed that the vaccines were protective:

"…It's necessary, let's take for example the yellow fever. You know the yellow fever came and everybody was vaccinated I got my vaccination of yellow fever last year if you remember they were doing the vaccination for the public so it's important it's very important…" (BF1)

"…Well vaccination is good but for now, whether you are vaccinated or not it doesn't mean you won't get the COVID, but it will help…" (ASC)

"…We have a lot of people who have taken it. I have taken it myself, so I think it's good for everyone to take it to protect yourself…" (FF2)

There were others who either had mixed perceptions of the vaccination and weren't so sure if vaccination was helpful or not. A few individuals also believed that the vaccination wasn't protecting people from getting infected at all due to the reports of the seeming lack of full protection by the available vaccines:

"… It's helping, but I don't think it protects you because even now taking the vaccine they said you are not fully guaranteed of that so I don't think it can protect you…" (BG1)

"…Well, coming from a science point of view, I think it will protect us in a way, but looking at the efficacy of the thing itself how people have vaccinated but gotten the thing (COVID-19) and how fast the thing (COVID-19 vaccines) was done, I will say yes and no because I have my doubt though I have taken them. So at a certain point, you are conflicted…" (PF1)

"…As for the vaccine, I don't know. Because you can hear someone saying I took Johnson and Johnson and their blood is clotting. Some are saying the Moderna if you don't eat well, you will get side effects like pain in the arm and feverishness. I don't think there is enough education…" (NW1)

It could be deduced that the perception of the efficacy of the vaccines to protect gym users from contracting COVID-19 infection was mixed. While some interviewees agreed that it was necessary to prevent the spread of the virus, others believed that it was not fully efficacious due to some side effects and the experiences of self, friends or relatives and acquaintances.

4.3. Chapter summary

This chapter has presented an analysis of interviews conducted with gym users. It presented the demographic characteristics of the interviewees, including whether or not they were vaccinated. The themes under study, namely, the knowledge, perceptions and attitudes of the gym users towards COVID-19 and its safety protocols were also analysed and presented. The subsequent chapter presents analysis of how the key findings relate to existing literature.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0. Introduction

This chapter presents a discussion of the results from both the observation (hygiene and social distancing assessment of gyms) and the in-depth interviews conducted with gym users and how they relate to current literature. The chapter is organised into four main sections corresponding to the objectives of the study. Section one presents the extent of adherence to COVID-19 safety and prevention protocols in gyms. Section two presents the extent of knowledge of COVID-19 safety and prevention protocols among gym users. Section three presents the attitude towards COVID-19 safety and prevention protocols. Section four presents the perceptions of COVID-19 safety and prevention protocols among gym users. The chapter concludes with a summary.

5.1. Adherence to COVID-19 safety and prevention protocols

To find out the extent of adherence by the gym centres to the COVID-19 safety and prevention protocols, an assessment tool/checklist containing six distinct sections was used. The sections included personal hygiene reminders, availability of hygiene facilities, availability of water, availability of detergents, use of handwashing facilities, and finally social distancing. As discussed earlier in the literature review chapter of this study, the theory of planned behaviour can be drawn on to explain why gym users will adhere to safety protocols or not. The theory

explains that whether a person will engage in a particular activity will depend on their intentions towards that activity which is in turn influenced by;

1: whether they perceive the activity to be enjoyable or beneficial (Behavioural attitudes)

2: whether they have a positive influence from their environment and others (Subjective Norms) and,

3: whether they feel capable and confident in their ability to perform that activity (Perceived behavioural control).

These concepts have been applied to explain the findings of this study in this chapter.

Reminders on personal hygiene practices (behavioural control)

In terms of adhering to COVID-19 safety and prevention protocols, gym users will develop positive behavioural attitudes towards it if there are several reminders on personal hygiene practices such as hand washing. Such reminders will usually feature the benefits of personal hygiene practices, which will help gym users to perceive personal hygiene as a beneficial activity. However, as noted in the results of this study, there weren't adequate reminders in most of the gyms and fitness centres that were assessed. Apart from gym workers alerting users to use sanitisers or wash their hands when they entered the facility in 11 of the observed gyms, all other reminders were witnessed in less than 10 of gyms.

These values were much higher than what was found in the transport sector where a study found that less than a fifth of transport stations were communicating the need to frequently wash hands

(Bonful et al., 2020). However, it is still very necessary that gyms improve the communications on various personal hygiene reminders. As explained by the theory of planned behaviour, we can appreciate that increasing the number of such reminders on hygiene practices, especially handwashing practices is likely to increase the risk perception of gym users, which in turn can increase the positive behavioural attitudes and subjective norms of individuals towards personal hygiene practices (Ajzen, 1985; Alexandris et al., 2021).

Availability of hand washing facilities, water and detergents (subjective norms/ perceived behavioural control)

It was commendable that in all of the gyms assessed, there were hand washing facilities available. There was water, which was visibly clean in all 20 gyms assessed and in 19 of the gyms, there were detergents available for handwashing. This was higher than other studies that had found, for example, that in the Greater Accra Region of Ghana, 84% of transport stations had hand washing facilities available and amongst those who had such facilities, 93% of them had running water and 90% of them had detergents available for handwashing (Bonful et al., 2020). In another study, however, researchers found that only 50% of public markets had hand washing facilities available (Kuhangana et al., 2020). Kuhangana et al. (2020) also found that respondents from markets with hand washing facilities had significantly better overall attitude and knowledge of COVID-19 safety measures. This observation could be explained by the theory of planned behaviour which states that positive subjective norms and perceived behavioural control produces positive intensions towards a particular behaviour (Ajzen, 1985). The presence of hand washing facilities can therefore produce positive subjective norms and also

increase the perceive behavioural control of gym users, helping them to have greater intentions to adhere to safety protocols (Alexandris et al., 2021).

Usage of hand washing facilities (perceived behavioural control)

When it came to the actual usage of the handwashing facilities by gym users, it was observed that in 18 of gyms assessed, gym users were observed washing their hands or using detergents, although in 15 of those 18 gyms, users were washing their hands infrequently. This meant that not all the users who entered the gyms were washing their hands or using alcohol-based sanitisers. It may be argued that these numbers could have been improved if reminders were not hard to come by in various gyms. These findings are similar to other studies, which found that in 87% of cases, handwashing facilities were used infrequently (Bonful et al., 2020). In another study, 77% of respondents practiced handwashing (Kebede et al., 2020). This finding can be related to the theory of planned behaviour with regards the perceived behavioural control of gym users. When gym users feel that they can easily adhere to COVID-19 safety protocols, they will be more likely to develop positive intentions towards it. Having positive intentions towards these safety protocols will increase the number of users adhering to them (Ajzen, 1985; Alexandris et al., 2021). Factors such as presence of handwashing facilities could have increased positive intentions towards handwashing, while factors such as absence of handwashing reminders could have decreased positive intentions towards handwashing.

Social/physical distancing (subjective norms/perceived behavioural control)

When it comes to the social/physical distancing protocols and wearing of protective masks, adherence to these could be improved by increasing the positive subjective norms and perceived

behavioural control of gym users towards this activity. Ways in which this could be done is increasing visible messages in gyms reminding users of the need to keep an appropriate distance between themselves and other users. Indicators on the gym floors, arranging instruments to allow for appropriate spacing could make this easier to do. In this study, it was noticed that these measures weren't adequately done in most gyms. For instance, 17 out of the 20 gyms didn't have visible communication on social distancing measures and 16 of gyms assessed had made no infrastructural changes or changes in arrangements to ensure social distancing.

These inadequacies would most likely not encourage gym users that they could successfully maintain physical or social distancing in the gyms, which would, in turn, produce a negative or low perceived behavioural control, reducing the probability that gym users would maintain appropriate social distancing. Therefore, when it came to social distancing by gym users, it was observed that in 19 of these gyms, there were no observable actions by gym users to ensure social distancing and in 17 out of the 20 gyms, there were no observable actions by gym workers (staff) to maintain adequate physical distancing. Dzisi & Dei, (2020), however, observed that in the case of public transport users, majority (98%) of individuals observed appropriate social distancing.

In 19 out of the 20 gyms assessed, no observable effort was made by users to keep appropriate physical distancing from other gym attendees while in 18 of gyms, users made no observable efforts to maintain social distancing from gym instructors. It could be argued that this observation would reduce the positive subjective norms of gym users. This is because when gym users notice that all around them, including other users and their instructors are maintaining

adequate physical distancing, it will encourage them to do the same and vice versa. This is in contrast to one study in which gym users were noticed to be making the effort to keep distant from others, including instructors as such 80.3% of users were exercising alone while only 15.4% of gym users were with another person such as the instructor, the remaining 4.2% of users were in groups of 3-5 (Willis, 2021)

When it came to the wearing of protective masks, in 14 of the gyms, workers and users were noticed to be wearing nose masks while in 6 of gyms assessed, no one was observed wearing a mask. This finding was much better compared to what was observed on social distancing but could still be improved. In a similar study where a systematic observation of mask adherence and social distancing at gyms was done, adherence to social distancing was observed to be higher (62.7% of gym users) compared to the wearing of a mask, which was 46.7% of gym users (Willis, 2021). These results from gyms and fitness centres are much higher when compared to some other sectors such as the transport sector where in one study, it was observed that on the average, 87.4% of users were not compliant with the wearing of nose masks (Dzisi & Dei, 2020).

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5.2. Knowledge of COVID-19 safety and prevention protocols (behavioural attitudes)

This objective was assessed by conducting in-depth interviews with gym users. It was noted from the interviews that gym users knew of COVID-19. This conclusion was in line with some studies in which as high as 100% of respondents were found to have adequate knowledge of COVID-19 (Girma et al., 2020; Reuben et al., 2021). This result was not unexpected since

COVID-19 was highly publicised by various news media outlets around the world during the outbreak (Mach et al., 2021).

However, it must be noted that, knowledge of COVID-19 does not necessarily indicate an accurate knowledge of the disease and its safety protocols. This was evident in the study since some misconceptions concerning how to prevent the spread of COVID-19 emerged. This finding agrees with a conclusion that misconceptions and misinformation concerning COVID-19 were widespread in Ghana (Tabong & Segtub, 2021). Tabong and Segtub (2021), also identified some misconceptions as blacks having immunity to COVID-19 and also the heat in the African continent being able to prevent the spread of the disease.

With regards to the safety and prevention protocols of COVID-19, a dominant theme that emerged from the study was that the safety protocols were protective. This agrees with a study, which found that 84% of respondents knew that washing their hands with soap and water for at least, 20 seconds could help prevent COVID-19 (Siddiqui et al., 2020).

When it came to the knowledge of COVID-19 vaccination, an important theme that emerged was interviewees claiming that they knew it was ongoing and protective but not getting vaccinated due to lack of access. Some of the interviewees mentioned that they didn't know where such vaccination exercises were taking place. A study on COVID-19 vaccination found that 48.2% of respondents were either unsure or unwilling to take the COVID-19 vaccine and among these individuals, the major reason stated for the unwillingness to take the vaccine was the lack of

vaccine safety (Cordina, Lauri & Lauri, 2021). However, in this study, only one individual expressed concern about the safety of the vaccine.

It must be noted that having adequate knowledge of COVID-19 safety and prevention protocols may be an important predictor of whether or not individuals will adhere to those protocols. This is because having adequate knowledge will help individuals appreciate the benefits of those protocols. This will produce positive behavioural attitudes and improve intentions to adhere to those protocols, including getting vaccinated. Adequate knowledge will also improve the perceived behavioural control of individuals towards adherence to COVID-19 protocols, which will, in turn, increase the intentions and subsequently, adherence to these protocols (Ajzen, 1985; Alexandris et al., 2021).

5.3. Attitudes towards COVID-19 safety and prevention protocols (subjective norms)

In order to find out what the attitudes of gym users were towards COVID-19 and its safety and preventive protocols, interviewees were asked what they would do if they suspected that they had COVID-19 and also what practical measures they would employ generally and while exercising to protect themselves from COVID-19. The purpose of these questions was to determine if gym users actually practiced various COVID-19 safety and preventive protocols, including quarantining in suspected cases, seeking medical help, and also hand hygiene and physical distancing measures. Other measures specific to exercising that gym users were expected to be complying with included wiping of exercise instruments with disinfecting wipes before and after exercise sessions. In studies that assessed the attitudes towards COVID-19 safety protocols, it was found that 79.5% of respondents had good attitudes towards government

imposed COVID-19 safety measures (Reuben et al., 2021). In a similar study, it was found that majority of respondents were willing to adhere to COVID-19 safety protocols (Aldeen et al., 2020).

In this study gym users reported that they followed strictly the various protocols aimed at preventing COVID-19 infections, especially ones that were specific to gym instrument cleaning. However, upon further questioning, it was obvious that certain measures such as physical distancing inside the gym facilities were not being adhered to. This may be due to the fact that many of the gyms were not putting in measures to enforce social distancing protocols or at least, remind gym users of these protocols as seen in the first part of this study, which was the observational survey.

In the survey, 17 gyms had no visible communication or messages on physical distancing displayed in their gyms. In 16 of gyms assessed, there were no infrastructural modifications or changes in arrangement such as increasing the spaces between exercise instruments to help gym users adhere to physical distancing protocols and in 17 of gyms, there were no observable efforts by staff to ensure physical distancing. It was therefore, observed that in 19 of the gyms, no observable action by gym users to ensure physical distancing was observed.

According to the theory of planned behaviour, one of the three major factors that influences intentions of individuals to behave in a particular way is the subjective norms, which includes influences from their environment encouraging or discouraging that particular behaviour (Ajzen, 1985). Visible communications on social distancing, infrastructural changes or efforts by gym

staff to maintain appropriate social distancing could have gone a long way to help gym users adhere to the protocols since they could all produce positive subjective norms in gym users (Alexandris et al., 2021).

5.4. Perceptions of COVID-19 safety and prevention protocols (behavioural attitudes/ subjective norms)

In this study, majority of gym users appreciated that they were at risk of COVID-19 infection and considered COVID-19 as a serious disease. This is considered as a positive perception as it may help in the adherence to safety protocols by gym users. A similar view emerged in a scoping review of some 28 studies on COVID-19 in sub-Saharan Africa, which determined that majority of respondents in six of the studies perceived that they were at risk of being infected with COVID-19 (Nwagbara et al., 2021).

With regards to the safety protocols themselves, interviewees in this study mainly viewed them as necessary and protective. This finding agrees with a 2020 epidemiological survey on COVID-19 in which majority of the respondents (79.5%) were determined to have had a positive attitude toward adherence to COVID-19 safety and preventive protocols (Reuben et al., 2021). Nonetheless, an opposite theme that emerged from relatively minor number of interviewees from this study was that, the safety protocols were not necessary. Such opinions could be as a result of misinformation about COVID-19 prevalent in the media (Tabong & Segtub, 2021).

It was also noticed in this study that, when it came to COVID-19 vaccinations, gym users were of the opinion that they were necessary and protective. This opinion was found to be a good predictor for willingness to take the COVID-19 vaccine (Cordina et al., 2021). However, a concern was expressed about the vaccines to the effect that anyone who accepts to get vaccinated may be serving as a "guinea pig" for pharmaceutical companies. This idea was likely due to the lack of adequate education on the safety of vaccines and similar sentiments were found where 26.1% of respondents in a study expressed vaccine hesitancy and among all those expressing such hesitancy, more than 70% felt that the vaccines were not safe, had undesirable side effects or it was experimental (Neumann-Böhme et al., 2020).

As explained by the theory of planned behaviour, such perceptions are likely to produce negative behavioural attitudes towards vaccinations. It may also cause negative subjective norms since these same individuals may discourage friends and family from vaccinations. All these will together produce weak intentions towards COVID-19 vaccinations, thereby reducing the possibilities that individuals will get vaccinated (Alexandris et al., 2021).

5.5. Chapter summary

This chapter has presented a discussion of findings from both the observational compliance survey of gyms and the in-depth interviews with gym users. Overall, adherence to certain specific protocols such as the wearing of masks and hand hygiene practices were fairly adhered to although there was room for a lot of improvement. On the other hand, social distancing protocols were poorly adhered to. Gym users also generally, had good knowledge of COVID-19 and its safety protocols. Perceptions of and attitudes of gym users towards COVID-19 were

fairly positive, but a lot more education was needed to help some gym users appreciate the importance of COVID-19 safety protocols, including vaccination. The next chapter presents the conclusions and recommendations made based on the findings of this study.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0. Introduction

This chapter contains the summary, conclusions and recommendations drawn from the study. The chapter is divided into six sections namely; summary of the study, conclusions of the study, contribution to knowledge, recommendations of the study, limitations to the study and future research. The conclusions are further divided into four major parts with each part corresponding to the objectives set out for this study.

6.1. Summary of the study

Generally, this study was aimed at assessing factors influencing adherence to COVID -19 safety protocols among gym users in the Greater Accra Region. Adherence to protocols by gyms was done using a hygiene assessment checklist whilst knowledge, attitudes and perceptions of gym users of the safety protocols were explored through in-depth interviews. The study was a cross-sectional study. Gyms in the Greater Accra Region were purposively selected and assessed using a checklist to ascertain if they were compliant with various COVID-19 protocols. Simple descriptive analysis was then conducted on the data collected from various gym facilities. Transcribed data from in-depth interviews were explored to find common themes that could explain whether gym users adhered to COVID-19 protocols or not. It was observed from the study that various gyms had put in place safety protocols, especially those related to hand washing and the use of sanitisers. However, gyms need to work harder in adhering to COVID-19

safety protocols, related to physical distancing and facemask measures. Generally, gym users had satisfactory knowledge of COVID-19 and its safety protocols. However, some gym users appeared to lack appreciation of the importance of such protocols and therefore, did not have the right attitudes towards it.

6.2. Conclusions of the study

In this section, various conclusions drawn on adherence to COVID-19 and its safety protocols, knowledge of, attitudes towards and perceptions of gym users concerning the COVID-19 safety and preventive protocols have been presented.

6.2.1. Adherence to COVID-19 safety and preventive protocols

The descriptive and observational compliance survey revealed that when it comes to the adherence to COVID-19 safety and preventive protocols by gyms and fitness centres in the Greater Accra Region, more work needs to be done. Communication of reminders on handwashing was absent in 12 gyms. Reminders on correct handwashing technique was absent in all gyms visited and 17 gyms didn't have reminders on proper coughing and sneezing etiquette. In 15 gyms, users only practised such hand washing infrequently. Additionally, the maintenance of appropriate physical distancing in various gyms was not well practised. In 19 out of 20 gyms, users were not observed making any effort to maintain the required physical distance between themselves and also with their instructors.

This study also concludes that all the gyms assessed had done well by having facilities for handwashing and also making alcohol-based sanitisers available to users. Additionally, in 14 out

of 20 gyms observed, gym users also ensured they wore protective masks. Considering that other studies had also found lapses in the compliance of respondents with the various COVID-19 safety protocols (Alshammari et al., 2021; Dzisi & Dei, 2020; Willis, 2021), it may be important to ensure continuous monitoring and evaluation of the protocols in order to encourage adherence.

6.2.2. Knowledge of COVID-19 safety and preventive protocols

The study concludes that most gym users had adequate knowledge of what COVID-19 was, the signs and symptoms associated with it and the safety protocols available to protect themselves from being infected. Although there were a few users who had some misconceptions of these topics, generally, gym users had adequate knowledge. Reuben et al. (2021) found similar results where 99.5% of respondents were determined to have had good knowledge of COVID-19 protocols. In one study where only 30% of respondents were observed to have had good knowledge of COVID-19 and its safety protocols, it was also noticed that the respondents seldom practiced handwashing, wearing of nose masks or social distancing (Kuhangana et al., 2020). Therefore, it could be seen that appropriate knowledge of COVID-19 is important if individuals will adhere to the various safety protocols and the responsible institutions such as the Ministry of Health/Ghana Health Service and Ministry of Education should ensure that misinformation and disinformation concerning such issues as the COVID-19 will be reduced to the minimum.

6.2.3. Attitudes toward COVID-19 safety and preventive protocols

This study concludes that generally, gym users had a positive attitude towards COVID-19 and its safety protocols. A positive attitude, in this case, means they sought the necessary medical help when they suspected that they were infected, and they also agreed to practice or adhered to the protocols. However, the study also concludes that work still needs to be done in this area since there were some gym users who believed that a healthy diet, regular exercise and the use of herbal preparations were enough to protect individuals from COVID-19 infections even if such individuals did not adhere to the COVID-19 safety and preventive protocols. Mandaah et al. (2020) found that there was a significant improvement in the attitudes of respondents towards COVID-19 safety protocols within a period of 2 months and concluded that one of the reasons for this improvement in attitude may have been due to governments and stakeholders implementing preventive measures. Continuous sensitisation of members of the public is, therefore, important to achieving maximum adherence to protocols.

6.2.4. Perceptions of COVID-19 safety and preventive protocols

This study concludes that gym users correctly perceived that COVID-19 was a serious disease and were at risk of getting infected. Most gym users were also of the opinion that the safety and preventive protocols, including COVID-19 vaccinations were necessary and protective. There were some gym users, although in the minority, who did not appreciate the need for various safety and preventive protocols. Ogolodom et al. (2020) drew similar conclusions where they found that 61% of respondents felt that there was a real risk of being infected and hence, saw COVID-19 as a serious disease.

6.3. Contribution to knowledge

This section presents the contribution of this study to knowledge in the areas of policy and practice, theory, and methodology as presented below.

6.3.1. Contribution to policy and practice

Gyms and fitness centres do not currently have a governing body in Ghana. Therefore, policies and standards of practice are not clearly and uniformly mapped out. However, this research has helped to establish certain considerations that need to be looked at when such policies are being drawn up in the future. When it comes to infection prevention and control, this study has helped to identify areas that need much strengthening. Future policies, for instance, will need to ensure that infrastructural changes that help to reduce spread of communicable infections are inculcated in the setup of gyms and fitness centres. Also, policy-making stakeholders in the fitness industry, including the Ministry of Health and Ministry of Youth and Sports, in establishing a governing body for fitness centres and gyms should ensure that personal hygiene measures that were being adhered to are not discontinued when the COVID-19 pandemic resolves. It is hoped that the various protocols discussed in this study form the basis for future infection prevention and control policies for the fitness industry.

6.3.2. Contribution to theory

This study has made important contributions to the theoretical application of the theory of planned behaviour (Ajzen, 1985). This theory, which helps to explain the behaviour of people towards an intervention was used in this study to explain the intentions of gym users towards the COVID-19 safety and preventive protocols. The theory of planned behaviour helped to determine that certain factors such as clear communication of remainders, the availability of

hand washing stations and appropriate infrastructural changes to ensure adequate spacing were necessary for adherence to COVID-19 safety and preventive protocols. It must also be noted that although the theory of planned behaviour might have been applied in studies conducted elsewhere, this study may be one of few studies that seems to have applied it in a study on adherence to COVID-19 safety and preventive protocols in the Greater Accra Region.

6.3.3. Contribution to methodology

This study also makes significant contributions to research methodology. Various studies may have applied qualitative methods, quantitative methods or both to conduct similar studies (Bonful et al., 2020; Willis, 2021; Zipprich et al., 2020). However, this was one of few studies that seems to have applied qualitative methods of observational survey and in-depth interviews among gym users in the Greater Accra Region. Therefore, this being a qualitative study was able to use quantitative analysis of the observational survey to help quantify the data collected and support the qualitative method of analysis. This ensured a methodological triangulation in the data collected and analysed to derive the main themes and findings of the study.

6.4. Recommendations of the study

Recommendations made by this study have been presented in this section. The first part is where recommendations have been made for gym centres. The second part is where recommendations have been directed towards policy change and policy makers such as government institutions responsible for health and wellness. The third part is where recommendations have been made for gym users.

6.4.1. Management of gyms centres

In order to improve adherence to COVID-19 safety protocols, gyms and fitness centres should;

1. Ensure reminders on personal hygiene practices are well communicated to gym users. Such communication could be in the form of posters at vantage points such as doors, waiting areas and exercising areas of the gym. Gym receptionists should also remind all who enter the facility to use alcohol-based sanitisers before proceeding into exercise areas.

2. All gyms should ensure that users maintain at least, 2 meters (6 feet) distance between each other (Stephenson, 2021). This could be achieved by arranging gym equipment to allow for such spacing.

3. To discourage overcrowding and make it easier to ensure physical distancing, gyms should pre-book their clients for time slots, which will help them to control the number of gym users present at every point in time.

6.4.2. Gym users

The following recommendation(s) have been made for gym users;

1. Gym users should make sure that they wear a mask, especially when interacting with other people in the gym in order to minimise the risk of transmitting any infection. Gym users should note that even while exercising (especially in low intensity exercises) masks will be worn and if this becomes difficult they need to ensure appropriate distancing between them and other users (United Nations , 2020).

2. Gym users just like all other citizens should ensure that their sources of information, especially concerning important issues like COVID-19 and vaccination should be from credible sources such as government official websites and official sources of the various health regulating bodies in the country.

6.4.3. Ministry of Health/Ghana Health Service/Ministry of Youth and Sports

Recommendations for policy and policymakers made by this study are as follows;

1. Under the supervision of the Ministry of Health and the Ministry of Youth and Sports, a regulatory body for various gyms and fitness centres in the country should be formed. Such a regulatory body would be responsible for ensuring that all of these facilities adhere to various regulations and protocols for COVID-19 prevention.
2. To ensure places like gyms enforce various COVID-19 protocols, frequent inspections of facilities should be carried out by the COVID-19 task force. Such inspections should target problem areas such as physical distancing, the use of protective masks and the proper handwashing and personal hygiene etiquette in the gyms.
3. Apart from educating the general public, the government through the Ministry of Health and other health-related agencies such as the health promotion departments of various public health units should also embark on targeted education towards high-risk institutions like gyms and fitness centres.

6.5. Limitations to the study

The study had limitations just like all other studies.

1. First and foremost, the study could not be extended to majority of the gyms in Greater Accra Region due to constraints of resources and time and therefore, had a small sample size. Also, not all gyms granted access to their clients for the in-depth interviews, which prevented the researcher from reaching the target of 20 in-depth interviews.
2. Secondly, the research was limited in its ability to make generalisations. This would have been possible if quantitative methods were applied. Such a quantitative method could have provided quantitative or statistical analysis for generalisations.
3. Lastly, due to the ongoing COVID-19 pandemic, various gyms although were operational were not running at full capacity and therefore, reduced the usual sample from which the participants were selected.

6.6. Future Research

This study recommends that, future studies should seek to increase the sample size of gym users, number of gyms used and regions to enhance understanding of the issues and obtain a holistic picture of the various issues related to gym users' adherence to public health emergencies. Future studies can also focus on the use of quantitative research methods, which will help to quantify and generalise findings.

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APPENDICES

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Appendix A – Participant information sheet

Title of Study: **Factors Influencing Adherence to COVID-19 Prevention Protocols in Selected Gyms in The Greater Accra Region of Ghana**

Introduction

My name is Mishael Yankey from the University of Ghana. I am a master's student at the School of Public Health.

Background and Purpose of Research/Study

I am kindly requesting you to participate in this research which seeks to explore factors contributing to adherence of gyms and gym users to COVID-19 safety and preventive protocols in the greater Accra region of Ghana. Your opinion and views will be useful in answering questions aimed at understanding why gym attendees decide to adhere to COVID-19 safety protocols or not.

Procedure

I will be conducting a survey by using a checklist to determine which safety protocols are adhered to by the gym facility.

I will also be conducting in-depth interviews and the conservation will be audio-recorded and notes taken by my assistant. This interview will take 30 minutes of your time. We will record

your bio-data with the exception of your name and other personal information. Codes will be used to identify participants. You have the right to:

1. To agree or disagree to the recording of conversation.
2. To ask further explanation on questions for better clarification.
3. To ask what and how your information will be used.
4. Choice of language for better expression of yourself.

Possible Benefit

There is no direct benefit to you for taking part in this study. We however hope that what we learn from you will add to the knowledge about adherence to COVID-19 safety protocols.

Possible Risks and Discomforts

In completing the interview questions, you will be using time that could have been used for something else.

Confidentiality

The information and data collected from you will not be showed to anyone except the study team. Information on computers will be password protected. Hard copies will be stored in locked cabinets.

Privacy

Privacy will be assured by interviewing you at a convenient place.

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Appendix B - Informed Consent Form

Title of Study: Factors Influencing Adherence to COVID-19 Prevention Protocols in Selected Gyms in The Greater Accra Region of Ghana

Researcher/Student: Mishael Yankey.

Institution: School of Public Health, College of Health Sciences, University of Ghana-Legon.

General Information about Research

Since the onset of COVID-19 there has been several outbreaks in various gyms around the world. To ensure safety of gyms attendees, facilities need to adhere to the various safety protocols set out by public health experts. Gym attendees will also need to adhere to these protocols. This research seeks to find out the level of compliance to the safety protocols by gyms and also explore the knowledge, attitudes and perceptions of gym attendees towards safety protocols.

If you agree to take part in this study, an interview will be conducted with you which will take about 30 minutes.

Possible Risks and Discomforts

We do not expect any negative consequences from participation in this research either to the facility or to individuals who will be interviewed, although they will need to spend time answering questions.

Possible Benefits

Facilities involved in this study may see areas they need to improve when it comes to adherence to safety protocols and this may go a long way to improve their services and the health of their workers and clients.

Confidentiality

The information and data collected from you will not be shown to anyone except the study team. Information on computers will be password protected. Hard copies will be stored in locked cabinets.

Voluntary Participation and Right to Leave the Research

Taking part in this study is your choice. You can choose to be in the study, or you can decline. If you choose to be in the study, you still can change your mind at any time. You may withdraw from the study at any time.

Provision of Information and Consent for Participants

If you agree to participate in the study, you will sign/thumbprint a paper copy of this form. You will be provided with a copy of this information form for your records. The research team will keep a copy for its records.

Benefits for Additional Information

Please feel free to ask about anything you don't understand. If you have questions later, you can call the Researcher.

VOLUNTEER AGREEMENT

The above document describing the benefits, risk and procedure for the research title: Factors Influencing Adherence to COVID-19 Prevention Protocols in Selected Gyms in The Greater Accra Region of Ghana, has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

---------- ----------

Date Signature or thumbprint of volunteer

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

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

---------- ----------

Date Signature of witness

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

_____ _____

Date Signature of person who obtained consent

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Appendix C: Semi-structured Interview guide for exploring factors associated with adherence to COVID-19 protocols among gym users in the Greater Accra Region

Participant ID_____

A. General Questions

1. How old are you?
2. Are you married?
3. What is your religion?
4. What is your education level?
5. Where do you work?
6. How regularly do you exercise?

B. Knowledge of COVID-19 safety protocols

1. Where did you first hear of COVID-19?
2. What do you know about COVID-19?
    i. Cause, symptoms, transmission and treatment?
    ii. Where did you get this information?
3. What can you do to protect yourself from COVID-19?
4. Do you know of the COVID-19 safety protocols?
5. What do you know about the vaccination?

C. Perceptions towards COVID-19 safety protocols

1. Do you think you are at risk of COVID-19?
2. In your opinion do you think it's a serious disease?
3. In your opinion do you think the COVID-19 preventive measures are necessary? (why?)
4. Do you think all of these measures can protect you from COVID-19?

5. Do you think vaccination can protect you?

D. Attitudes towards COVID-19 safety protocols

1. What will you do if you suspect you have COVID-19?
2. Do you practice any measure generally to protect yourself from COVID-19?
    i. *ask specifically about facemask, handwashing, sanitiser use and physical distancing if the participant doesn't mention it and whether or not they practice it*
3. What measures do you take whiles exercising to protect yourself?
    i. *Ask participants about wiping equipment with disinfectants before use and distancing themselves from other gym users*

E. Additional questions

1. Have you been vaccinated (if not why)?
2. What do you think about open space exercise in gyms? Is it better than the traditional gym setting (i.e. enclosed spaces)?
3. Do you think more should be done to make increase protections in gyms?
4. Do you have any questions to ask? Or is there anything else you want to say?

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Appendix D: Checklist for Assessing adherence to COVID-19 protocols among gyms in the Greater Accra Region

GYM/FITNESS CENTRE HYGIENE AND SOCIAL DISTANCING ASSESSMENT TOOL

Name of Gym/fitness centre	……
Type of gym	Outdoor gym [ ] Indoor gym [ ] ……..... [ ]
Gym location (Municipality/District)	…….
Name of person assessing the station	…….....
Date of Assessment	……

Expected Observation Times	**8am-10am** **3pm-5pm**
Minimum Expected Observation Time at the gym	**30 minutes**
Start time:	
End time:	

SECTION A. PERSONAL HYGIENE REMINDERS/ANNOUNCEMENT			
NO.	**Observational Question**	**Response** [tick only one]	**Score**
1	Are posters with information on hand hygiene or locally produced equivalent with similar content displayed in the gym?	Not displayed [ ]	0
		Displayed in some areas [ ]	5
		Displayed in most areas [ ]	10
		Displayed in all areas. [ ]	15
2	Are there posters showing/explaining the correct hand washing techniques?	Not displayed [ ]	0
		Displayed in some areas [ ]	5
		Displayed in most areas [ ]	10
		Displayed in all areas. [ ]	15
3	Are other hygiene reminders (e.g. coughing or sneezing into tissue paper/elbow) available?	Not displayed [ ]	0
		Displayed in some areas [ ]	5
		Displayed in most areas [ ]	10
		Displayed in all areas. [ ]	15
4	Are there announcements about hand/personal hygiene at gym?	No announcement at all [ ]	0
		Announcement made only once [ ]	5
		Announcement made severally [ ]	10
		Announcement made all the time [ ]	15
SECTION B. AVAILABILITY OF HYGIENE FACILITIES			
5	Is there a place for hand washing at the gym?	Yes [ ]	10
		No[ ]	0
6	If there is a place for handwashing, how	Only 1 [ ]	5

	many?	More than 1 [ ]	10
7	Nature of hand washing place?	Sink only[ ]	10
		Veronica Bucket only [ ]	10
		Sink and Veronica bucket	20
		Other [ ] Please specify……..	10
8	Is/are there handwashing place(s) available to all at gym?	Yes [ ]	10
		No[ ]	0
SECTION C. AVAILABILITY OF WATER			
9	Is water available for hand washing?	Yes [ ]	20
		No[ ]	0
10	If water is available, is it running tap water, Veronica Bucket or water stored in a container?	Running tap water[ ] Veronica Bucket[ ] Water Stored in a container[ ]	5 5 5
11	If water is available, is it visibly clean?	Yes [ ]	5
		No[ ]	0
SECTION D. AVAILABILITY OF DETERGENTS			
12	Is soap (liquid/solid) available at the hand washing place?	Yes [ ]	10
		No [ ]	0
13	Is alcohol-based hand sanitizer available at the gym?	Not available at all [ ] Available at only one point [ ] Available at more than one points [ ]	0 5 10

SECTION E. USE OF HAND WASHING FACILITIES& HAND SANITIZER			
14	Are the handwashing facilities being used frequently, infrequently or not at all?	Frequently used[ ]	10
		Infrequently used[ ]	5
		Not used at all [ ]	0
15	Are there people in a queue waiting to wash hands?	Yes [ ]	5
		No[ ]	0
16	Are people using soap when they wash hands?	Yes [ ]	10
		No[ ]	0
17	Are people using alcohol-based hand sanitizer when they enter the gyms or during the their exercise sessions?	Yes [ ]	10
		No[ ]	0
SECTION F. SOCIAL DISTANCING			
18	Any visible/recognizable communication/messages on social distancing, *eg poster/audio message,etc*	Yes [ ]	5
		No[ ]	0
19	Any infrastructural or spatial changes to ensure social distancing *eg spacing of gym equipment, etc*	Yes [ ]	5
		No[ ]	0
20	Any arrangements by the gyms to	Yes [ ]	5

	promote social distancing *eg seating arrangements*	No[ ]	0
21	Any observable actions by gym users to observe social distancing from other users at the gym? *Eg deliberate individual attempts to maintain social distancing*	Yes [ ]	5
		No[ ]	0
22	Any observable actions by other persons at the gym (instructors, security men, cleaners etc) to observe social distance when interacting with gym attendees? *Eg attempts to maintain a distance with passengers or their goods*	Yes [ ]	5
		No[ ]	0
23	Wearing of protective clothing/equipment (PPE's), *eg nose mask or other similar PPE's*	Not worn at all [ ] Worn by a few[ ] Worn by many[ ] Work by all [ ]	0 5 10 15
24	Are gym attendees making an effort not to touch surfaces that can lead to spread of the virus eg doors, chairs, etc?	Yes [ ]	5
		No[ ]	0
25	Are gym users seen making an effort to keep social distance from other	Yes [ ]	5
		No[ ]	0

	attendees?		
26	Are gym users seen making an effort to keep social distance from instructors?	Yes [ ]	5
		No[ ]	0

SECTION G- OTHER IMPORTANT QUESTIONS (GYM MANAGERS/INSTRUCTORS)

1. Are workers required to be fully vaccinated? YES/NO
    a. Is this confirmed with a vaccination card? YES/NO
    b. How many workers are fully vaccinated?.....
2. Are gym users required to be fully vaccinated? YES/NO
    a. Is this confirmed with a vaccination card? YES/NO
    b. Do you turn away non vaccinated users? YES/NO

ANY OTHER OBSERVATIONS (Please, provide as much detail as possible)

……

……

……

……

……

……

Appendix E: Ghana Health Service Ethical Clearance Form

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
Email: ethics.research@ghsmail.org

My Ref. GHS/RDD/ERC/Admin/App | 22 | 056
Your Ref. No.

28th February, 2022

Mishael Yankey
P.O. Box KS 74, Kasoa

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

GHS-ERC Number	**GHS-ERC: 020/02/22**
Study Title	Factors Influencing Adherence to COVID-19 Prevention Protocols in Selected Gyms in the Greater Accra Region of Ghana
Approval Date	28th February, 2022
Expiry Date	27th February, 2023
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