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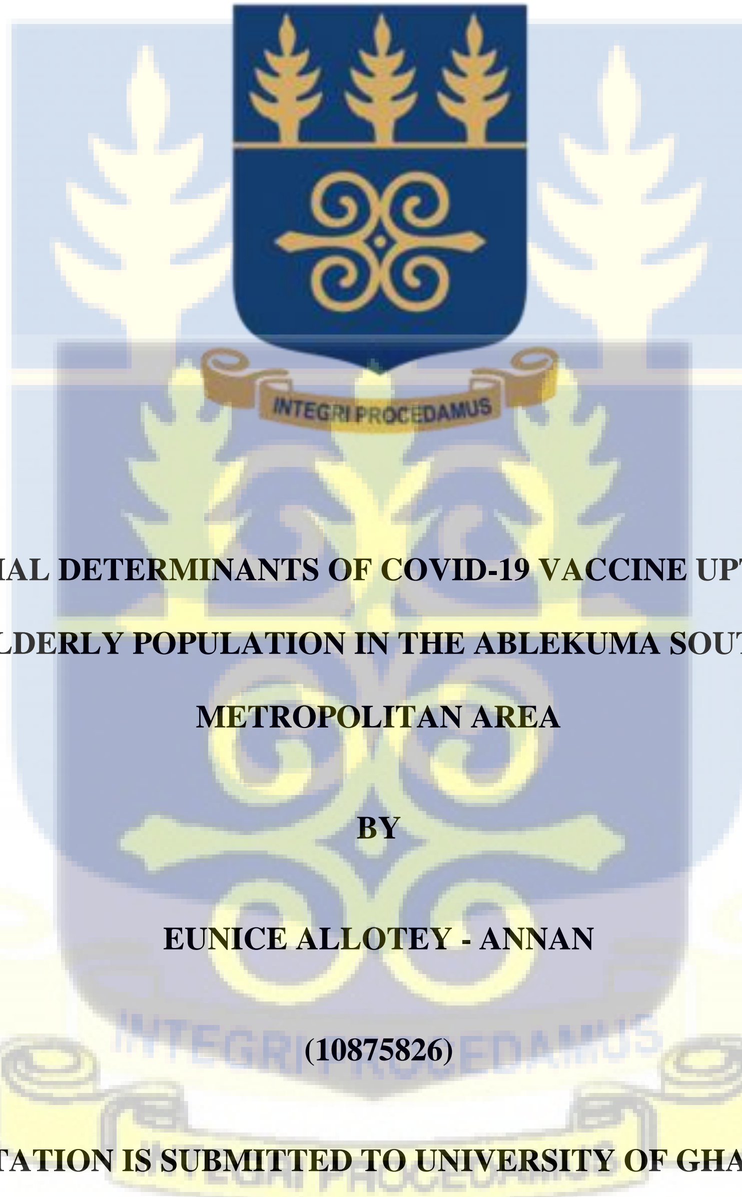

PSYCHOSOCIAL DETERMINANTS OF COVID-19 VACCINE UPTAKE AMONG THE ELDERLY POPULATION IN THE ABLEKUMA SOUTH SUB-METROPOLITAN AREA

BY

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(10875826)

THIS DISSERTATION IS SUBMITTED TO UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE

APRIL 2022

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DECLARATION

I, Eunice Allotey-Annan, declare that except for the other people's investigations which have been duly acknowledged, this work is the result of my own original research, done under the supervision of my academic supervisor, Dr. Faustina Hayford Blankson, and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.

………………………………..   07-07-2022

Eunice Allotey-Annan   Date

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Dr. Faustina Hayford Blankson   Date

(Supervisor)

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DEDICATION

This work is dedicated to all those who have lost loved ones to COVID-19.

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ACKNOWLEDGEMENT

I have been fortunate to have had the support of many wonderful people throughout the time that it took to complete this dissertation.

My deepest gratitude goes to Dr. Faustina Hayford Blankson, my extraordinary supervisor. This thesis would not have been possible without her guidance and support, not to mention her expert advice and extensive knowledge which played a very significant role in completing this work.

I am particularly grateful for the ongoing and unwavering support of my husband Dr. O. Allotey-Annan. His encouragement, interest in my research and understanding of my schedule has been priceless.

I am thankful to my children Joann and Jacob for always cheering me on, my parents Jacob and Rebecca and my mother-in-love, Beatrice for their unyielding support.

I would also like to acknowledge Dr. G. Duodu for his invaluable help, the hardworking research assistants who tirelessly sought to collect data within the specified time, and all who participated in this research and supported me in one way or the other, I am grateful.

To my head pastor and mentor, Apostle Dr. Peter Sackey and his wife, thank you for your counsel and support.

The ultimate appreciation goes to God my Father, for granting me the grace to successfully complete this dissertation.

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ABSTRACT

Background: Since the beginning of the coronavirus pandemic, the population of the elderly (those above the age of ~60 years) has been at a greater risk of serious illness, hospitalization, and death attributable to COVID-19 (Bialek et al., 2020). Currently, vaccination is the recommended preventive measure for COVID-19 pandemic making it essential to identify the psychosocial factors relating to high vaccine acceptance and uptake especially among those who have a greater risk of infectivity.

Objective: This study sought to describe the psychosocial factors that influence COVID-19 vaccine uptake among the elderly population in the Ablekuma South Sub-Metropolitan Area.

Method: A quantitative cross-sectional strategy with multistage sampling techniques was used. Data collection was done with a structured questionnaire.

Results: The COVID-19 vaccine uptake 54.1% and was associated with age, religion, marital status, employment status, educational level, alcohol consumption, previous COVID-19 health event and awareness of ongoing COVID-19 vaccination campaigns. 93.3% of the participants received health information by electronic media whiles 24.4% received information by public information vans. Knowledge about COVID-19 and vaccines was generally poor and suggestive of misinformation in the study sample. 25% of participants who were aware of the vaccination campaign received the COVID-19 vaccine. 9.6% of vaccinated persons indicated that they would not recommend the vaccine to a relation.

Conclusion: The uptake of COVID-19 vaccines within the study population was not as high as anticipated considering that elderly persons were prioritized in the vaccinations and as high as 93.3% had received information about the vaccinations. This pointed to some barriers to vaccination which were supported by the knowledge level and impact of the information campaigns on COVID-19 vaccine uptake.

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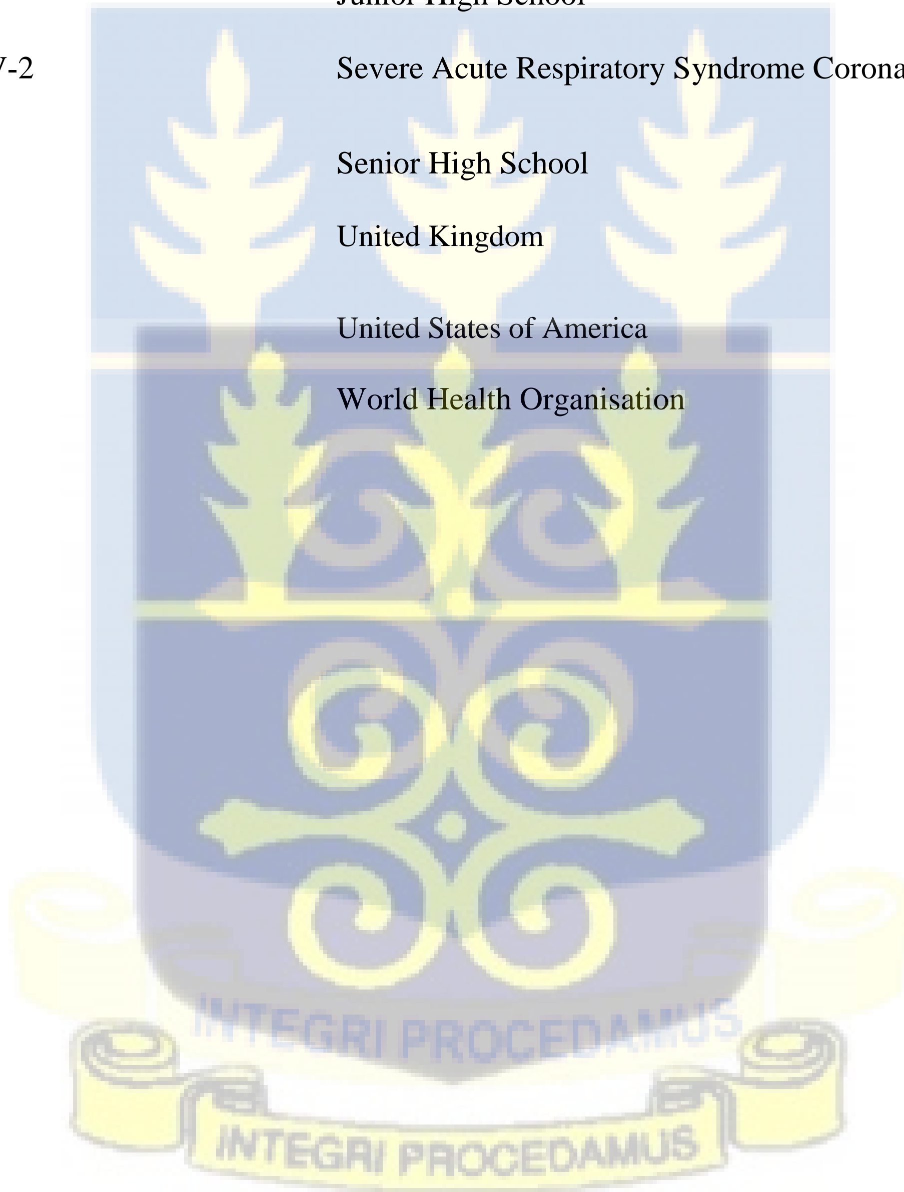

AOR	Adjusted Odds Ratio
COVID-19	Coronavirus Disease of 2019
GHS-ERC	Ghana Health Service Ethical Review Committee
JHS	Junior High School
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SHS	Senior High School
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation

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DEFNITION OF KEY CONCEPTS

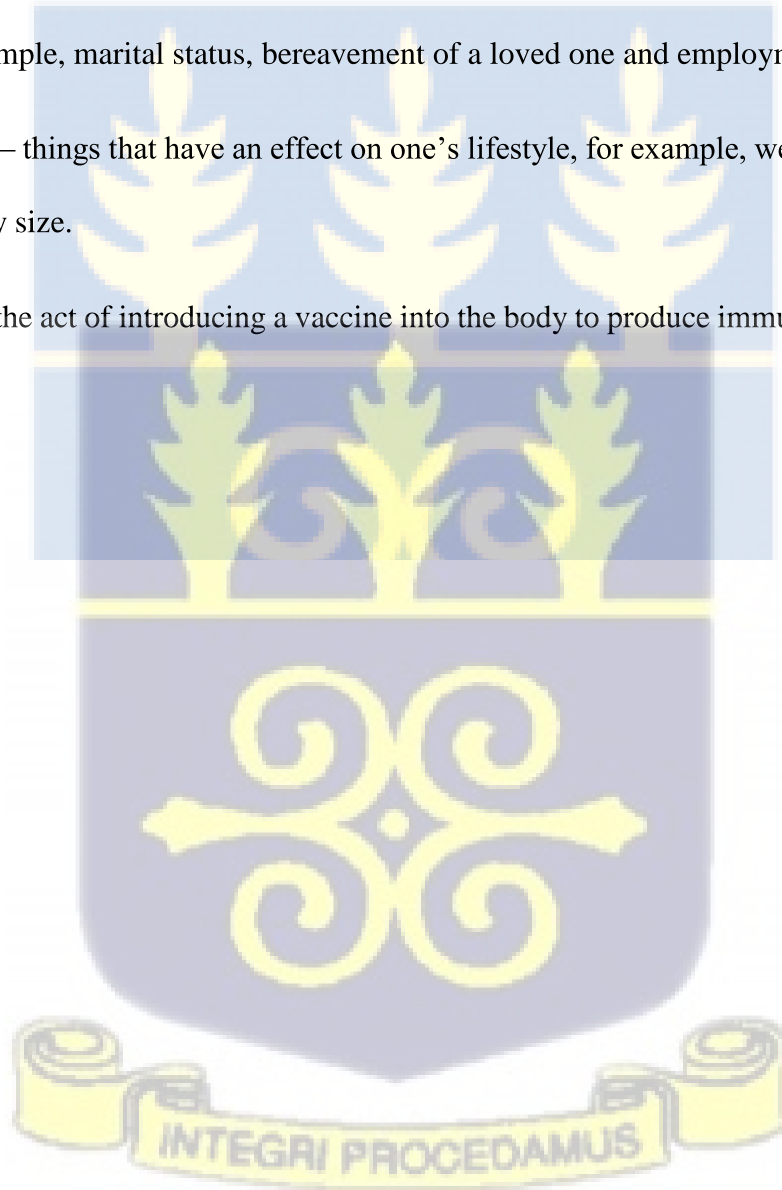
Elderly – individuals above an age of ~60 years

Health Status – an individual's "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (adapted from WHO, 1948)

Psychological Factors – dynamics that influence the workings of an individual mind or psyche, for example, marital status, bereavement of a loved one and employment history.

Social Factors – things that have an effect on one's lifestyle, for example, wealth, educational level and family size.

Vaccination – the act of introducing a vaccine into the body to produce immunity to a specific disease



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CHAPTER ONE

1.0 Introduction

1.1 Background of the Study

The SARS-CoV-2 (the virus that causes COVID-19) also known as Severe Acute Respiratory Syndrome Corona Virus 2 is a new strain of the corona group of viruses. This new strain is responsible for the global pandemic that the world is currently facing. The lack of proven facts and abundance of rumours have caused a lot of panic worldwide as reported by a poll claiming that in the age of social media, anxiety about the coronavirus spreads faster than the virus itself, resulting in public panic worldwide (Joan Muwahed, 2020). Another report further adds that hearing a lot of unverified information and news about COVID-19 has affected the public and created panic, causing people to live with anxiety (Kristie, 2020). Fortunately, with the passage of time, more light has been shed on the virus and given us a bit more accurate information to help reduce the panic.

SARS-CoV-2 is an infectious condition, which means it can be spread, directly or indirectly, from one person to another. It involves your upper respiratory tract (nose, throat, airways, lungs). It causes asymptomatic, mild, moderate, and in some cases severe respiratory disease which can be fatal. It should be noted that, though coronavirus has high infectivity it has low mortality and the risk of death is only higher in older people (above an age of ~60 years) and people with pre-existing health conditions (Heymann & Shindo, 2020).

Since its first outbreak in Wuhan, China, in December 2019, it has gradually traversed borders to involve the whole world, Ghana not excluded. MyJoyOnline reported that on the 12th of March 2020, the first two cases were confirmed in Ghana. These individuals had returned to

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Ghana from Norway and Turkey and became ill a few days later. Since then, the national Public Health team together with the government has taken several steps to curb its spread in the country including test, treat and track (Myjoyonline, 2021).

To slow the spread of SARS-CoV-2 infection and mitigate its health effects, Ghana implemented several control measures such as partial and comprehensive lockdowns, closing schools and businesses and encouraged Ghanaians to practice the hygiene protocols below:

- washing of hands and using alcohol based sanitizers
- wearing of nose masks
- enforcing social distancing protocols
- contact tracing

Fortunately, corona vaccines have been produced and approved for use to protect people from this viral disease. In February 2021, Ghana received 600,000 doses of the COVAX vaccine to begin its vaccination campaign with an additional 350,000 doses in May 2021 (Ansong et al., 2021).

Presently, in Ghana, although the elderly is classified as high risk with respect to COVI9-19, not much is documented about the acceptance of a potential COVID-19 vaccine and the psychosocial factors that influence its acceptance among them. The majority of available past research regarding vaccine uptake was conducted prior to the pandemic when vaccines against COVID-19 did not exist in Ghana. (Release et al., 2021) Furthermore, other research undertaken was also limited in its research cohort, e.g. healthcare professionals were the primary focus (Agyekum et al., 2021; Jude et al., 2021). This study fills the gap in the Ghanaian context.

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Hence, knowing the psychosocial factors associated with COVID-19 vaccine uptake among the elderly, is vital as it will aid in planning strategies to increase vaccine acceptability among the elderly now that the vaccine is available. Psychosocial factors that influence the vaccine uptake among the elderly can also inform the formulation of relevant psychosocial models that can be used to create public health strategies to improve the acceptance of the vaccine and vaccine uptake. Additionally, these models can be expanded for nationwide use and in subsequent vaccination campaigns as and when appropriate.

Finally, such knowledge will also support public health authorities and behavioural analysts with relevant information to enhance and contribute to a better understanding of improving the health and wellbeing of the elderly.

1.2 Problem Statement

The Corona vaccines have been produced and approved for use to protect people from corona virus. In February 2021, Ghana received 600,000 doses of the COVAX vaccine to begin its vaccination campaign with an additional 350,000 doses in May 2021*(First COVID-19 COVAX Vaccine Doses Administered in Africa, n.d.)*. The findings of a research conducted in Ghana before the arrival of the vaccine has shown that 6 in 10 adult Ghanaians are likely to take COVID-19 vaccine but this represents only half of the total population needed to attain 70% herd immunity (Release et al., 2021). According to studies conducted in an old people's home in Carmarthenshire, UK, when elderly persons are not given a flu vaccine, it is usually because they refused the vaccine rather than because it was not offered, however, no assessment of why they declined was performed (Gupta et al., 2000). Though the general public agrees that the elderly population, which includes all adults over 60 are part of the most vulnerable group to COVID-19 disease, not much is known about the effect of psychosocial factors on vaccine

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uptake in older persons. As a result, this study was designed to identify the factors that contribute to vaccine uptake among the elderly, as well as essential solutions for increasing and improving vaccination coverage while enabling government officials to effectively persuade the elderly to follow preventive measures.

1.3 Significance of Study

Currently, in Ghana, the studies that have been conducted with respect to the COVID -19 vaccine were carried out before the start of the vaccination campaign implying that no research has been carried out to determine the psychosocial factors influencing vaccine uptake after the vaccination program started. Furthermore, bearing that little research has been conducted with the elderly population as the study participants it is important to investigate the psychosocial factors affecting vaccine uptake among the elderly population because the risk for severe illness with COVID-19 increases with age, with older adults being the most vulnerable.

Secondly, the active participation of the elderly in the vaccination exercise will contribute to its success because older unvaccinated adults are more likely to be hospitalized or die; the elderly are known to have a high infectivity rate with serious complications.

Finally, knowledge gathered from the study can also inform health interventions targeted at improving the well-being of the aged, facilitate the construction of suitable psychosocial models that can be utilized to build public health policies to promote vaccination acceptance and vaccination uptake. These models can also be adapted for use in future vaccination campaigns.

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1.4 Research Questions

1. What are the psychosocial factors that will influence COVID-19 vaccine uptake among the elderly population?
2. What are the attitudes and perceptions of the elderly population about the corona virus, the risks associated with COVID-19 disease and the importance of the vaccine?
3. How has the current nationwide Covid-19 vaccination education campaign affected the knowledge about the Covid-19 disease and vaccine literacy among the elderly population?

1.5 Research Objectives

1.5.1 General Objectives

- To investigate the psychosocial determinants that influenced COVID-19 vaccine uptake among the elderly population in the Ablekuma South Sub- Metropolitan Area.

1.5.2 Specific Objective

- To assess knowledge, attitudes and perceptions about the Corona Virus and its vaccine among the elderly population in the Ablekuma South Sub- Metropolitan Area.

- To determine other factors which can influence COVID-19 vaccine uptake among the elderly population in the Ablekuma South Sub- Metropolitan Area.

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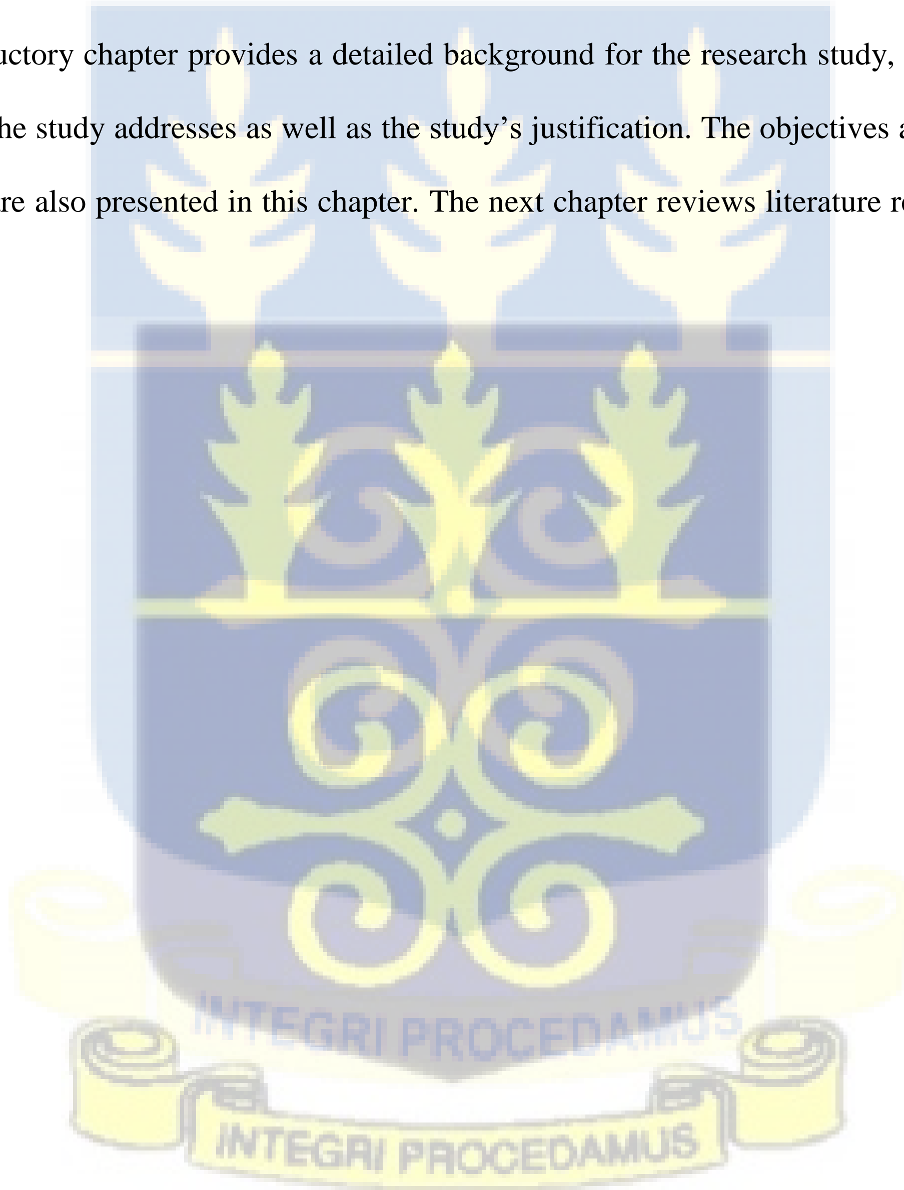
- To determine the impact of the current nationwide COVID-19 vaccination education campaign on vaccine literacy among the elderly population in the Ablekuma South Sub-Metropolitan Area.

1.6 Summary of Chapter

The introductory chapter provides a detailed background for the research study, the problem statement the study addresses as well as the study's justification. The objectives and research questions are also presented in this chapter. The next chapter reviews literature related to the study.



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CHAPTER TWO

2.0 LITERATURE REVIEW

2.1. Introduction

This chapter presents a review of existing literature on COVID-19 Vaccine and the factors influencing its uptake among the elderly. The chapter is divided into four sections. The first section examines existing literature on COVID-19 in the elderly, second section discusses the COVID-19 vaccine, the third section details the importance in prioritizing the elderly for the vaccination, while the fourth and final section concludes with the psychosocial factors that are associated with vaccine uptake.

2.2 COVID -19 in the elderly

According to data from China, older adults, especially those with serious underlying health conditions, have a higher risk of severe COVID-19–related illness and death as compared to younger people. Despite the fact that the majority of COVID-19 cases in China were mild (81%), approximately 80% of deaths occurred in adults over the age of 60 with only one (0.1%) death occurring in a person under the age of 19 (Bialek et al., 2020). This can be attributed to the fact that older adults are more likely to suffer from long-term health problems that can put them at risk. In addition, because lung tissue becomes less elastic with age, respiratory diseases such as COVID-19 are a particular concern for the elderly. During the beginning of the pandemic in Italy, 9 out of 10 deaths occurred in individuals aged 70 and over (Brown et al., 2020). Based on these happenings among the elderly globally, it can be inferred that older adults 60 years or over in Ghana also have increased rates of infection and mortality rates when compared to the general populace. This highlights the severity of COVID – 19 among the elderly.

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2.3 COVID-19 Vaccine

The CDC defines a vaccine as a "product that stimulates a person's immune system to produce immunity to a specific disease, hence protecting the person from that disease" (Basics, 2021). Although vaccines can be administered by mouth or sprayed into the nose, they are usually administered through needle injections. Thus, the act of introducing the vaccine into the body to produce immunity to a specific disease is known as vaccination. The importance of vaccination cannot be overemphasized, it is one of the most convenient and safe preventive care methods available.

The research, development and production of vaccinations to combat COVID-19 moved at a breakneck pace, with over 200 potential vaccinations in clinical trials as at December 2020. There are four different types of COVID -19 vaccines, the Whole Virus, Protein Subunit, Viral Vector and Nucleic Acid (RNA and DNA). Though they are different from each other, they all offer protection against the disease by proving an immune response to an antigen, a molecule found on the virus. In the case of COVID-19, the antigen is typically the characteristic spike protein found on the surface of the virus, which it normally uses to help it invade human cells(Gavi The Vaccine Aliance, 2020).

Safety and efficacy concerns have been raised over the rapid developments of the COVID – 19 vaccines considering the fact that vaccines usually take about 10-15 years to develop. These concerns have led to the spreading of false and inaccurate information, resulting in the creation of misconceptions and increased vaccine hesitancy especially among the misinformed. However, according to the WHO, the AZD1222 vaccine (which is what Ghana received) has an efficacy of 63.09% against symptomatic SARS-CoV-2 infection (The Oxford/AstraZeneca COVID-19 vaccine: what you need to know, n.d.). Another point to note is that researchers used new technology and that had a significant role to play in the rapid development of the COVID-19 vaccine.

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Assuredly, researchers did not cut corners in developing vaccines that were safe to use in humans and had no severe adverse events associated with it, despite the relatively shorter period involved.

2.4 Prioritizing the elderly for vaccination

On 1st March 2021, the COVID-19 vaccination began in Ghana after making headlines as the first country to receive the Oxford-AstraZeneca vaccine as part of the COVAX initiative. As of 20 April 2021, Ghana Health Service reports that more than 800,000 doses of the vaccine have been administered. The priority groups included frontline healthcare workers and security personnel, people aged over 60, those with known comorbidities, and some government officials. Due to insufficient data from vaccine studies, pregnant women and children under the age of 16 were excluded. Prioritising is very important due to the limited vaccination supply and also because risk levels of infectivity differ under varying circumstances.

According to a study conducted to highlight the importance of COVID-19 vaccine efficacy in older age groups, results showed that high rates of deployment to all age groups will be important if the overall rate of infections in the community is to be reduced. However, in order to significantly reduce mortality among persons aged 60 and higher, a vaccination must directly protect a large number of people in that age range (Sadarangani et al., 2021). In other words, to reduce mortality, the elderly must be prioritized for vaccination.

Using a mathematical model to propose suitable vaccination prioritization strategies for COVID-19 vaccine in Korea, it was found that, though low levels of social distancing made the age group with the highest transmission rates the priority and high levels of social distancing made the elderly population the priority, to reduce mortalities, vaccination priority

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for the elderly age group is the best strategy in all scenarios of levels of social distancing (Choi et al., 2021).

In the study, “COVID-19 vaccine: vaccinate the young to protect the old”, the authors argued that protecting the most vulnerable might require prioritizing vaccinating children in order to maximize the benefits of indirect immunity for the elderly and the other vulnerable groups. It's worth noting that they went on to say that the possibility that this would be the optimal strategy from a public health perspective was dependent on the vaccine and virus characteristics, both of which are currently unknown (Giubilini et al., n.d.).

Since one of the known features of COVID-19 is that the symptom, severity, and mortality of the disease differ by age, with the elderly being at a higher risk, there is the need for vaccination strategies prioritizing the elderly to effectively minimize the incidences and mortalities.

2.5 Psychosocial factors associated with vaccine uptake

A study of 119 African American and White adults suggested that for most adults, trusting a flu vaccine was linked to the existence of trust relationships with multiple entities and individuals with emphasis on two main areas of focus: confidence in pharmaceutical corporations and the healthcare industry, and faith in the government or public health institutions (Jamison et al., 2019). To increase the uptake of a vaccine, public health educational campaigns should work at gaining and boosting the confidence of the population with regards to the vaccine and the country’s healthcare system. This will help strengthen the belief that the COVID-19 vaccine will protect the health of those who take it and also facilitate the act of following the advice of health professionals regarding the effectiveness of COVID-19 vaccine.

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Willingness to take the flu vaccine also varies in relation to independent variables such as perceived risk of infection and rises when concerns about possible infection increases (Mesch & Schwirian, 2015). To raise the willingness of the target population (particularly those that are at a higher risk) there should be public health measures that are put in place to inform people of their risk status.

Another study conducted with participants in the UK and US also found that though individuals may not take a vaccine to protect themselves, they would consider getting vaccinated to protect their family, friends, or at-risk groups: 63.7% in the UK and 54.1% in the USA (Loomba et al., n.d.). This is quite an important tool to use in encouraging participation and promoting increase in COVID-19 vaccine acceptance to protect the population with a higher morbidity and mortality rates. In Ghana, most of the elderly population who do not have caretakers live with other family members and they will also be more likely to get vaccinated knowing it will protect their older relatives. The elderly can also be able to continue to enjoy meaningful relationships with their family without exposing themselves to the unnecessary risks associated with COVID -19.

Misinformation is also a factor that lowers intent to accept a COVID-19 vaccine as shown by the findings of a study conducted to measure the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. There was also evidence that some sociodemographic groups are differentially impacted by exposure to misinformation, especially one that sounds scientific, relative to factual information(Loomba et al., n.d.).

In another study on how COVID -19 misinformation influences vaccine uptake in Bradford, UK it was discovered that safety concerns, negative stories and personal knowledge were the three prominent factors that contributed to vaccine hesitancy (Lockyer et al., 2021). To help reduce misinformation in the country, the media should be encouraged to act responsibly and

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give out accurate reliable information. Public health officials should also place emphasis on the safety on the vaccine and encourage individuals to ask questions to reduce ignorance and improve their knowledge. Stakeholders in the community whose opinions are valued should also be involved to help tackle misinformation locally in a non- judgemental way.

In Bangladesh, which is a low and middle-income country, the prevalence of vaccine hesitancy was greater in the elderly population, low-educated group, people with chronic diseases , as well as those with a low confidence in the country's healthcare system.(Abedin et al., 2021). This reinforces the need to target the elderly, communities with a high number of low - educated groups in the mass vaccination campaign to improve participation.

Income level is also a factor that affects vaccine uptake with those in lower income less like to take the vaccine especially if it was not free(Abedin et al., 2021; Murphy et al., n.d.). The government of Ghana has done a commendable job ensuring that the vaccines have been procured and are being distributed at no cost eliminating the financial burden that could have fallen on its citizens. To encourage the elderly to get vaccinated, this policy must be continued since most of the elderly are currently retired from active service and might not be able to afford the vaccine if they have to pay for it.

In Germany a study conducted to investigate why older adults and individuals with underlying chronic diseases were not getting vaccinated against flu, it was revealed that underlying chronic diseases was a factor that influenced vaccine uptake. (Bödeker et al., 2015). This is consistent with other studies with results that have also shown that those with underlying health conditions are also less likely to be involved in the vaccination (Abedin et al., 2021; Murphy et al., n.d.). This is unfortunate because according to the WHO the vaccines have demonstrated a high level of efficacy across all populations. They have been found to be safe and effective in people with different underlying medical conditions linked to a greater risk of severe disease such as high

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blood pressure; diabetes; asthma; pulmonary, liver or kidney disease; and chronic infections that are stable and controlled.(Vaccines, 2021)

2.6 Conceptual Framework

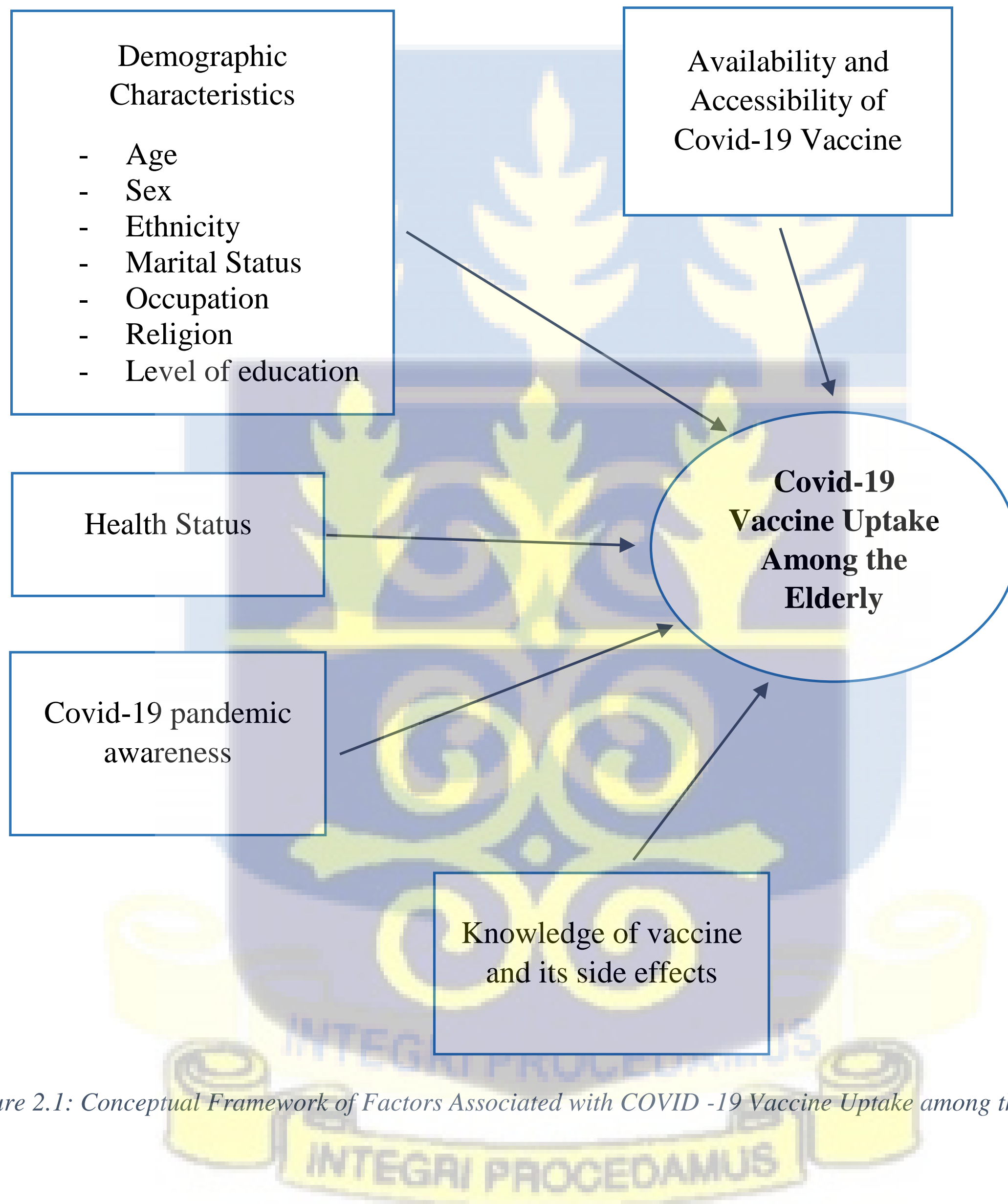

Figure 2.1: Conceptual Framework of Factors Associated with COVID -19 Vaccine Uptake among the elderly

Figure 2.1 is the conceptual framework that was developed based on the literature reviewed above. The framework gives an overview of some of the psychosocial determinants of Covid-19 vaccine uptake among the elderly population in the Ablekuma South Sub Metropolitan area

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within which the study was conducted. The framework explains that Covid -19 vaccine uptake may be influenced by factors such as the demographic characteristics, health status of the participant or their loved ones, their level of Covid-19 pandemic awareness, availability and accessibility of Covid-19 vaccine and knowledge of the vaccine and its side effects.

The demographic characteristics of the respondents indicate their general characteristics such as age, religion, educational level, occupation and marital status. In a study conducted in a community in Singapore, socio demographic characteristics such as age, single marital status, and economic inactivity have been shown to be associated with influenza vaccine uptake (Ang et al., 2022), in that, compared to individuals aged 50–64 years, those aged 65 years or more than 65 years were more likely to get vaccinated against seasonal influenza. In another study conducted in Europe (Jain et al., 2017), it was determined that unmarried individuals, which is likely to be highly correlated to living alone, also showed a lower uptake of both SIV (seasonal influenza vaccine) and PV (pneumococcal vaccine). In addition, not living alone was associated with higher SIV (39%) and PV (71%) uptake.

In a study conducted to identify the factors affecting the uptake of vaccination by the elderly in Western society, (Eilers et al., 2014), six main themes were found to influence the willingness to be vaccinated. They included the attitudes and beliefs individuals have towards vaccination, perceived risks, susceptibility and severity (from knowledge and personal experience), knowledge of the contents, side effects and effectiveness of the vaccine. In addition, advice and information from health workers, relatives and friends was also vital. Finally, accessibility and affordability of the vaccines as well as general health-related behaviour including previous vaccinations, was key in influencing an elderly individual's willingness to be vaccinated.

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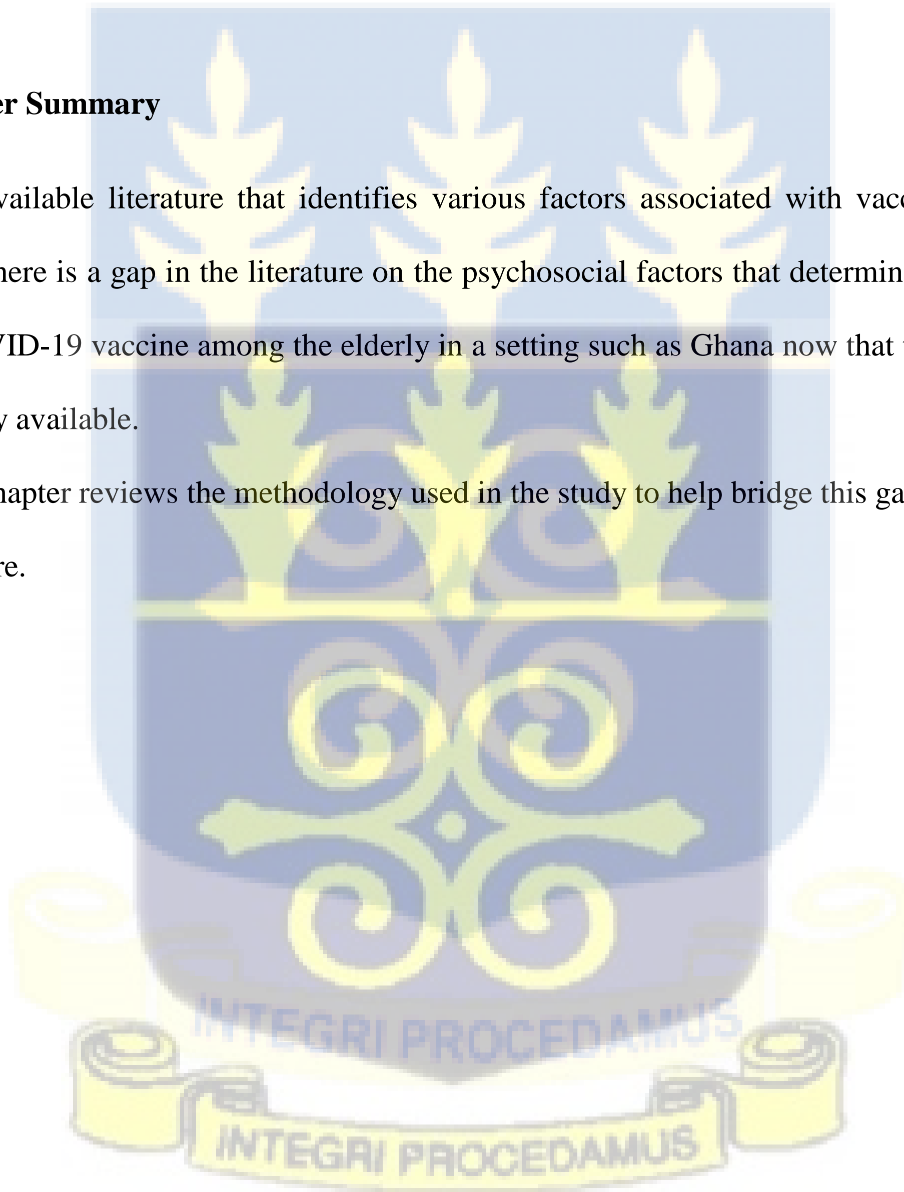
In Poland, a study on factors influencing COVID-19 vaccination uptake in the elderly, (Malesza, 2021) revealed that sharing living space with others and suffering from chronic illnesses were selected predictors of vaccine acceptance. In that same study, the findings also showed that those who opted not to be vaccinated often justified their decision as one that was based on the efficacy of the vaccine or that they were worried about side-effects.

2.6 Chapter Summary

There is available literature that identifies various factors associated with vaccine uptake, however, there is a gap in the literature on the psychosocial factors that determine the uptake of the COVID-19 vaccine among the elderly in a setting such as Ghana now that the vaccines are publicly available.

The next chapter reviews the methodology used in the study to help bridge this gap in the literature.



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CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter provides information and explains the methods used in assessing the psychosocial factors associated with COVID-19 vaccine uptake among the elderly population in the Ablekuma South Sub Metropolitan Area.

It begins by discussing the study design and the study population. After, the sampling procedure is explained and details of the sample size determination are given. The pretesting and data collection methods are then described followed by the data processing techniques and statistical data analysis that were used.

Next, the validity and threat to validity of the study are discussed and the chapter ends by detailing the ethical issues that were considered during the study.

3.2 Study Design

This survey was a descriptive and analytical cross-sectional study that was conducted in March 2022 among elderly men and women aged 60 years and above in Ablekuma South Sub Metropolitan Area, Greater Accra Region, Ghana. The multi-stage sampling technique was used to select the participants for the study.

3.3 Study Population

The Ablekuma South Sub Metropolitan District Council is one of Accra Metropolitan Assembly's three Sub Metropolitan District Councils (AMA). According to the Ghana

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Statistical Service, the overall population of the Sub Metropolitan area is 274,782, including 13,739 men and women aged 60 and up, that is, approximately 5% of the total population. It is the largest in the Metropolis, with an approximate area of 15-square-kilometer shared with Ablekuma Central, Ablekuma North Municipal Assembly, and the Ashiedu Keteke Sub Metropolitan District Council. The Ablekuma South Sub Metropolitan area has contributed significantly to Accra's economic development. The majority of the communities in the Metropolitan area are located around the shore, hence fishing and fish mongering are the most important economic activities. However, there are other thriving businesses such as supermarkets, banks, gas stations, educational institutions, and hotels that have also been established to serve the public.

The Sub- Metropolitan area has a unique blend of urban and rural living which makes it possible to interview a diverse group of older people with both formal and informal backgrounds, as well as varying social, literate and financial positions.

Sub Metropolitan Map of Ablekuma South Constituency

Figure 3.1: Map of the Ablekuma South Constituency

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3.4 Inclusion Criteria

To be included in the study, the individual had to be aged 60 years and above, residing in the Ablekuma South Sub- Metropolitan area as at the time of the survey and must consent to participate in the survey.

3.4.1 Exclusion Criteria

Individuals, both male and female who were residing in the community and were less than 60 years were not included in the study. Persons who were more than 60 years but did not sign the consent form or were unwilling to participate in the study were exempt. In addition, elderly individuals who were more than 60 years but not residents of Ablekuma South Sub Metropolitan area were also excluded from the study.

3.5 Sample Size Calculation

The minimum sample size required for this study was determined using Cochran's formula:

$$n_0 = \frac{Z^2 pq}{e^2}$$

where

n_0 is the sample size;

Z is the standard score for the confidence interval of 95% ie 1.96;

p is the estimated sample proportion of the elderly in Ablekuma South Sub Metropolitan area that have taken the vaccine; and **q = 1 - p**

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e is the allowed margin of error for p within the 95%confidence interval (error the researcher is willing to accept).

Consequently, the sample size was calculated as follows:

$$n_0 = \frac{1.96^2 (0.50)(1-0.5)}{(0.05)^2} = 384.16 \approx 385;$$

Therefore, the minimum sample size required for this study was 385.

However, the researchers interviewed 405 participants even though the study required a minimum sample size of 385, as there were so many people who expressed interest in taking part in the study and giving their perspectives. In addition, bearing in mind the ages of the participants, turning away interested participants would have been considered unacceptable and disrespectful according to Ghanaian culture.

3.6 Study Variables

Table 3.1 describes some of the key variables that were explored in the study. It shows the categories of the variables, their definition and how they were measured.

The dependent variable was the uptake of the Covid-19 Vaccine, that is, whether a respondent had already been vaccinated against COVID -19.

The independent variables were the age (age as at last birthday), sex, occupation, marital and health status of the respondent. Other independent variables were Covid-19 pandemic awareness (whether the respondent believed in the existence of Covid -19 and their knowledge of the disease), experience of Covid-19 disease (whether the respondent or their family and friends had ever been tested or diagnosed with Covid-19), knowledge of Covid-19 disease (what the respondent knew about the Covid -19 disease and the respondents source of

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information) and Covid-19 vaccine awareness (The respondents' knowledge about the vaccine, its importance and their source of information)

Table 3.1: Explanation of some key variables used in the study

VARIABLE	WORKING DEFINITION	SCALE OF MEASUREMENT
Dependent Uptake of Covid-19 Vaccine	Whether a respondent had already been vaccinated against COVID -19	Nominal: Yes, No
Independent Variable		
Age	Age as at last birthday	Discrete numerical data (ratio scale)
Sex	Sex of participant as recorded	Nominal: male; female
Occupation	Current Employment Status	Nominal: Retired, Self -employed, Employed, Unemployed
Marital Status	Whether the individual was in a relationship or not	Nominal: Married, Cohabiting, Single, Separated, Widowed
Health status	The well-being of the respondent, whether they had any chronic disease or not	Nominal: Yes, No
Covid-19 pandemic awareness	Whether the respondent believed in the existence of Covid -19 and their knowledge of the disease (as reported by the respondent)	Nominal

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Experience of Covid-19 disease	Whether the respondent or their family and friends had ever been tested or diagnosed with Covid-19	Nominal
Knowledge of Covid-19 disease	What the respondent knew about the Covid -19 disease and the respondents source of information (as reported by the respondent)	Nominal
Covid-19 vaccine awareness	The respondents' knowledge about the vaccine and its importance and their source of information (as reported by the respondent)	Nominal

3.7 Sampling Method

Multi-stage sampling technique was used in selecting participants for the study. This was done in two stages. The first stage involved the use of the modified form of the World Health Organization (WHO) cluster sampling technique in selecting the study participants. This involved the stratification of the Ablekuma South Sub Metropolitan District into nine clusters by geographical demarcations namely; Dansoman, Old Dansoman, Mamponse, Korle Gonno, Chorkor, Korle Bu, Mamprobi, Mpoase, and Gbegbeyise. Five clusters were then selected from the list of the nine clusters using simple random sampling with the help of a table of random numbers.

During the second stage, eighty-one (405/5 = 81) participants were selected from each of the five clusters selected. The housing units in the neighbourhood have numbered address systems which were used in identifying the housing units and streets. In this survey, a housing unit was defined as a regular dwelling place of a respondent where their household activities usually

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take place and where their belongings are kept. The housing units were coded numerically from 0001 sequentially. The coding of the households was done by the trained research assistants and the researcher. Where more than one household (one or more people living in the same dwelling and sharing meals together) were found in a house, the first household identified for selection of a participant was numbered as number "0001" with the others following sequentially until the minimum number of participants to be recruited from each cluster was attained.

3.8 Data Collection Techniques and Tools

The data was collected through a survey using an interviewer administered structured questionnaire method (see appendix). The questionnaires were administered one-on-one to each respondent by the researcher and her research assistants.

The questionnaire was based on variables in the conceptual framework, as this allowed the study to appropriately measure those factors that were important in answering the research objectives. The questions were all coded appropriately for data analysis.

Section A of the questionnaire captured data about socio-demographic factors such as age, sex, ethnicity, educational level completed by the individual, religion, marital status, as well as their occupation. Section B concentrated on the participant's health status while Section C asked questions relating to their awareness of the Covid – 19 Pandemic. They were also asked about personal experiences with the Covid -19 disease. Finally, Section D also captured data about their awareness of the Covid – 19 Vaccination, whether they had been vaccinated or not, and the reasons that led to their getting vaccinated or that made them opt out of the vaccination program. In addition, the respondents were asked whether they would recommend the vaccine to their family and friends.

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3.9 Pretesting of Data Collection Tool and Quality Control

The questionnaire was pretested among forty (40) individuals aged 60 years and above in Korle - Gonno to help find the suitability of the questions and fine-tune the questions for the interview to improve the quality of the data collected.

Five (5) research assistants with minimum qualification of a University Degree were trained on research ethics and the interview guides to assist with the data collection. The interview guide was translated from English to Ga and Twi and other dialects back to English where necessary for validity and accuracy.

After the pilot test, questions which were unclear were restructured and analysis of the responses obtained to enhance the interview guide. For example, in Q13, the "Other, please specify" option was added. Also for Q19, most of the pre-test participants shared that the term "PCR" was quite technical for them, therefore, the option (**a**) was re-worded from "symptoms with a positive PCR test" to "symptoms with a positive test" and option (**c**) was re-worded from "Positive PCR test after contact with infected person" to "Positive test after contact with infected person"

Also, during data collection, there was constant communication between the respective research assistants and the researcher to ensure that information is properly obtained, errors and omissions are quickly detected and corrected so that the probability of mistakes was minimized in the subsequent days.

3.10 Data Analysis

At the end of each interview, completed questionnaires were crosschecked for completeness and internal consistency. Completed and verified questionnaires were coded, entered, cleaned and the basic descriptive statistics analysed using STATA version 16. The results were

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presented using tables depicting frequencies and percentages. Bivariate analysis (chi square test of independence) was used to assess the association between the variables. Logistic regression analysis was then done to determine the strength of association between the socio-demographic predictors and COVID-19 vaccine uptake.

3.11 Validity

In conducting the study, it was necessary that efforts be made to ensure the validity of the data and results. To achieve this, standard questionnaires was adapted for the context of this study, guided by the objectives of the study and extensive literature review. The questionnaires were subjected to vetting and corrections, then further pretested among 40 prospective participants in Korle – Gonno, a suburb of Ablekuma South Sub- Metropolitan area (the study area) for analysis of the pre-test data and to serve as a guide for necessary amendments addressing ambiguities in the questionnaire. Finally, eligibility criteria were confirmed by the interviewer before a participant was enrolled.

3.12 Threat to Validity

Perhaps, the most significant threat to validity of this study was the self-reporting of the data that was collected. There was also the possibility of reporting bias attributed to the likelihood of reporting behaviours that are socially desirable. To minimise this and encourage the participants to give accurate data, the participants were assured of strict confidentiality to the data collected. Their anonymity was to be guaranteed with the exclusion of their names on the questionnaire so that the participants could be open in their responses. Participants were also informed that the research was a purely academic exercise intended to contribute towards

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improvement of healthcare interventions in the country, but not to indict individual shortcomings.

Putting in these measures to address the threat to validity of the study, it was anticipated that the results would be valid, to allow replicability of the strategy by researchers in other settings.

3.13 Ethical Considerations and Issues

The study observed all ethical guidelines in relation to the collection of data from human subjects. Ethical approval for the study was obtained from the Ethical Review Committee of the Ghana Health Service (GHS-ERC: 025/10/21). Permission was also sought from the Ablekuma South Sub-Metropolitan District Council through the Accra Metropolitan Assembly.

An informed consent form was included in the introductory section to obtain consent from the individuals participating. Participation was voluntary and entirely at the discretion of the participants. Those who agreed to participate signed or thumb printed a consent form to express their willingness to take part in the study. Except for minimal interruption of their private schedule, there was no anticipated risk of the study to the participants. The participants were not given any monetary compensation. However, they were informed that the knowledge obtained from the study might enhance the overall good of society.

There was no conflict of interest issues and the study was self-funded. All collected data was treated with confidentiality. Privacy and confidentiality of all participants was guaranteed by secure storage of the questionnaire and data throughout and beyond the study.

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3.14 Chapter Summary

The study was a quantitative study using a cross sectional study design. This study design was appropriate for achieving the objectives of the study as explained in this chapter. The study observed all ethical guidelines in relation to the collection of data from human subjects. In the next chapter the results obtained using the methods described are presented.

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CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter provides a summary of the results of the study: Psychosocial Determinants of COVID-19 Vaccine Uptake among the Elderly Population in the Ablekuma South Sub Metropolitan area are presented with the aid of tables, bar graphs and pie charts. Four hundred and five (405) participants took part in the study. The results are presented under sub themes such as demographic characteristics of participants, knowledge and perceptions about COVID-19 and vaccines, factors influencing uptake of COVID-19 vaccines, association between socio-demographic characteristics and vaccination status and the impact of COVID-19 vaccination campaign.

4.2 Demographic Characteristics of Participants

The structured questionnaire was administered to 405 elderly persons aged 60 years and above in the Ablekuma South Sub-Metropolitan area and yielded a 100% response rate. This number was made up of 23.2% (94/405) persons who did not believe that COVID-19 was real and 76.8% (311/405) who believed that COVID-19 was real.

Most of the participants (80%) were within the age range of 60 – 69 years, and 88.1% (357/405) were Christians. The ethnicities captured under *Other* included Frafra, Dagarti, Dagbani, Kokomba and Hausa, constituting 6.7% (27/405) of the participants. Majority of the participants were still in some form of employment – self-employment (34.8%), formal employment (26.7%) – while 38.5% were either retired or unemployed.

With regards to their health, 54.8% (222/405) has a known medical condition, 14.1% (57/405) had previously been diagnosed with COVID-19 infection, 25.2% (102/405) had a relation or

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friend who had been infected with COVID-19, and 7.4% (30/405) knew a relation or friend who died from COVID-19 related causes. Cigarette smokers constituted 5.9% (24/405) and consumption of alcohol was confirmed by 29.9% (121/405) of participants.

Notably, 97.0% (393/405) had heard about the ongoing national COVID-19 vaccination campaign, which suggested that they had received some form of information about the vaccines, eligible persons, and vaccination centres.

The demographic data was cross tabulated against belief in whether the participants believed that COVID-19 was real or not as illustrated by Table 4.1. Notably, it was observed that the only factors that were found to associated with belief in the existence of COVID-19 were Religion, Marital Status, Employment Status, Educational level, Cigarette Smoking status, Consumers of Alcohol, History of previous diagnosis with the COVID-19 infection, Previous infection of a relation and having heard about ongoing national COVID-19 vaccination campaigns.

Table 4.1: Socio-demographic characteristics of Study Participants (Chi-squared test of independence at 0.05% significance level)

Characteristic	Frequency (Percentage)	Believe that COVID-19 is Real		p-value
		No	**Yes**	
Number of Participants				
		94 (23.2)	311 (76.8)	
Gender				0.241
Male	150 (37.0)	30 (31.9)	120 (38.6)	
Female	255 (63.0)	64 (68.1)	191 (61.4)	
Age				0.102
60 – 64 years	195 (48.1)	46 (48.9)	149 (47.9)	
65 – 69 years	129 (31.9)	24 (25.5)	105 (33.8)	
70 – 74 years	60 (14.8)	15 (16.0)	45 (14.5)	
75+ years	21 (5.2)	9 (9.6)	12 (3.9)	
Religion				<0.0001*
Christian	357 (88.1)	73 (77.7)	284 (91.3)	
Muslim	33 (8.1)	9 (9.6)	24 (7.7)	
Traditional	15 (3.7)	12 (12.8)	3 (1.0)	
Ethnicity				0.175

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Ga	117 (28.9)	30 (31.9)	87 (28.0)	
Akan	108 (26.7)	21 (22.3)	87 (28.0)	
Ewe	105 (25.9)	31 (33.0)	74 (23.8)	
Fante	48 (11.9)	9 (9.6)	39 (12.5)	
Other	27 (6.7)	3 (3.2)	24 (7.7)	
Marital Status				<0.0001*
Single	54 (13.3)	0 (0.0)	54 (17.4)	
Married	210 (51.9)	52 (55.3)	158 (50.8)	
Cohabitation	24 (5.9)	9 (9.6)	15 (4.8)	
Separated	42 (10.4)	9 (9.6)	33 (10.6)	
Widowed	75 (18.5)	24 (25.5)	51 (16.4)	
Employment Status				0.014*
Unemployed	66 (16.3)	9 (9.6)	57 (18.3)	
Self-employed	141 (34.8)	33 (35.1)	108 (34.7)	
Employed	108 (26.7)	21 (22.3)	87 (28.0)	
Retired	9022.2)	31 (33.0)	59 (19.0)	
Educational Level				<0.0001*
Primary	69 (17.0)	15 (16.0)	54 (17.4)	
Junior High School	114 (28.1)	39 (41.5)	75 (24.1)	
Senior High School	81 (20.0)	30 (31.9)	51 (16.4)	
Tertiary	105 (25.9)	10 (10.6)	95 (30.5)	
Postgraduate	24 (5.9)	0 (0.0)	24 (7.7)	
No Formal Education	12 (3.0)	0 (0.0)	12 (3.9)	
Cigarette smoker				0.001*
Yes	24 (5.9)	12 (12.8)	12 (3.9)	
No	381 (94.1)	82 (87.2)	299 (96.1)	
Consumes Alcohol				<0.0001*
Yes	121 (29.9)	61 (64.9)	60 (19.3)	
No	284 (70.1)	33 (35.1)	251 (80.7)	
Have known chronic medical condition(s)				0.718
Yes	222 (54.8)	50 (53.2)	172 (55.3)	
No	183 (45.2)	44 (46.8)	139 (44.7)	
Previously been diagnosed with COVID-19				0.001*
Yes	57 (14.1)	3 (3.2)	54 (17.4)	
No	348 (85.9)	91 (96.8)	257 (82.6)	
Previous infection of relation/friend				<0.0001*
Yes	102 (25.2)	6 (6.4)	96 (30.9)	
No	303 (74.8)	88 (93.6)	215 (69.1)	
COVID-related death of relation/friend				0.075
Yes	30 (7.4)	3 (3.2)	27 (8.7)	
No	375 (92.6)	91 (96.8)	284 (91.3)	
Heard about National Vaccination Campaigns				<0.0001*

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	Yes	393 (97.0)	84 (89.4)	309 (99.4)	
	No	12 (3.0)	10 (10.6)	2 (0.6)	

4.3 COVID - 19 Pandemic Awareness

Of the 405 respondents, 94 (76.8%) believe that Covid-19 exists. Among those 94 participants, 41.5% believe that Covid-19 does not exist because it is not a disease for black people. 63.8% of them also believe that it is a plot to put fear in us therefore it does not exist. In addition, 67% of the 94 participants also believe that it is something engineered by some people to put fear in us and 3.2% of them believe that it does not exist because God will not allow it.

When asked the symptoms of Covid -19 disease, more than 65% chose fever, cough, ear pain, diarrhoea and loss of taste and smell as a symptom 13.3% of the respondents did not know any of the Covid-19 symptoms (13.3%).

With respect to main source of information on Covid-19 for the participants, 93.3% selected Media and 53.3% chose family and friends. 0.7% stated Church as their main source of information.

With respect to how Covid-19 is transmitted, 85.2% chose Inhaling Respiratory droplets from infected persons and 0.7% of the participants also stated that it cannot be transmitted.

Regarding preventative measures to take against Covid-19 infection, 96.3% respondents selected wearing nose masks, 90.4%selected regular handwashing and 377 also selected Social distancing. 219 participants chose using detergents (54.1%) and 177 participants also selected drinking herbal preparations (43.7%) as preventative measures that can be taken. 210 respondents selected consuming vitamin C (51.9%), 153 selected taking in Zinc supplements (37.8%) and 279 participants also selected avoiding touching face, mouth, eyes and nose

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(68.9%) as preventative measures that can be taken. None of the participants suggested any other preventative measures that can be adopted.

When asked whether they believed there was a cure for Covid-19, 141 participants selected yes (34.8%) and 210 selected no (51.9%). 54 of the participants chose not answer that question (13.3%).

Table 4.2 shows the Awareness of Covid-19 Pandemic of the 405 participants that took part in the study.

Table 4.2: Participants' Awareness of Covid-19 Pandemic

Characteristics	**n (%)**	
	Yes	No
Believe in the existence of Covid 19 disease? (N=405)	311 (76)	94 (23.2)
Believe it is not a disease of black people (N=94)	39 (41.5)	
Believe it is a plot to put fear in us (N=94)	60 (63.8)	
Believe it is something engineered by some people for personal reasons (N=94)	63 (67)	
Believe God will not allow it (N=94)	3 (3.2)	
Symptoms of Covid- 19 (N=405)		
Fever	318 (78.5)	
Cough	324 (80)	
Ear pain	60 (14.8)	
Diarrhea	123 (30.4)	
Loss of taste and smell	279 (68.9)	
Don't know any Covid-19 Symptoms	54 (13.3)	
Transmission of Covid-19 (N=405)		
Believe Covid 19 is transmitted through drinking contaminated water	57 (14.1)	
Believe Covid 19 is transmitted through eating poorly cooked food	78 (19.3)	
Believe Covid 19 is transmitted through sexual contact	69 (17)	
Believe Covid 19 is transmitted through inhaling Respiratory droplets from infected persons	345 (85.2)	
Believe Covid 19 is transmitted through eating or touching wild animals	93 (23)	
Believe Covid 19 cannot be transmitted	3 (0.7)	
Don't know how Covid 19 is transmitted	6 (1.5)	
Preventative measures that can be taken against Covid-19 infection (N=405)		
Wearing nose masks	390 (96.3)	
Regular handwashing	366 (90.4)	
Using detergents	219 (54.1)	
Social distancing	312 (77)	
Consuming vitamin C	210 (51.9)	

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Drinking herbal preparations	177 (43.7)	
Taking in Zinc supplements	153 (37.8)	
Avoiding touching face/mouth/eyes and nose	279 (68.9)	
Believe there is a cure for Covid-19 disease? (N=405)		
Yes	141 (34.8)	
No	210 (51.9)	
Don't know	54 (13.3)	

4.4 Knowledge and Perceptions about COVID-19 and Vaccines

All the participants had heard something about COVID-19 from various source with electronic media being the main source of information for up to 93.3% (378/405) of participants. Information from family and friends accounted for 53.3% (216/405), and the public information vans reached only 24.2% (99/405) of participants.

Participants held various views about COVID-19 which showed gaps in the basic knowledge of some of the participants (Table 4.3). On average 63.7% (258/405) had the correct knowledge about availability of a cure for COVID-19, potential fatality of the disease, risk of complications and death among the elderly from COVID-19 infection. An average of 9.5% (40/405) were not sure about the availability of a cure for COVID-19, potential fatality of the disease, risk of complications and death among the elderly from COVID-19 infection.

Furthermore, an average of 51.2% (207/405) participants did not believe the reported number of COVID-19 cases and deaths while 13.7% (55/405) were unsure about the reported number of COVID-19 cases and deaths.

Pertaining to knowledge about COVID-19 vaccines, 46.7% (189/405) knew that the vaccine was not a cure to the disease, 57.8% (234/405) knew that vaccines reduced death rate from the disease. Over 68% of participants thought that the vaccines prevented the spread of infection.

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Table 4.3: Knowledge and Perceptions of Participants about COVID-19 Vaccination Campaigns

Characteristic	**Participant Responses**			
	Yes	**No**	**Unsure**	**Total**
Source of Information about COVID-19				
Media	378 (93.3)	27 (6.7)	NA	405
Family and friends	216 (53.3)	189 (46.7)	NA	405
Personal Experience	66 (16.3)	339 (83.7)	NA	405
Public Information Vans	99 (24.4)	306 (75.6)	NA	405
Perceptions about COVID-19	**Yes**	**No**	**Unsure**	**Total**
Believe COVID-19 has a Cure	141 (34.8)	264 (65.2)	0	405
Believe COVID-19 Potentially Kills Victims	237 (58.5)	105 (25.9)	63 (15.6)	405
Believe Reported COVID-19 Cases	147 (36.3)	204 (50.4)	54 (13.3)	405
Believe Reported COVID-19 Deaths	138 (34.1)	210 (51.9)	57 (14.1)	405
Believe Elderly are at Higher Risk of Complications	276 (68.2)	84 (20.7)	45 (11.1)	405
Believe Elderly are at Higher Risk of Death	255 (63.0)	99 (24.4)	51 (12.6)	405
Knowledge about COVID-19 Vaccines	**Yes**	**No**	**Unsure**	**Total**
Vaccines are cure to the disease	120 (29.6)	189 (46.7)	96 (23.7)	405
Vaccines prevent spread of the disease	276 (68.2)	66 (16.3)	63 (15.6)	405
Vaccines reduce death rate from the disease	234 (57.8)	93 (23.0)	78 (19.2)	405
Vaccines are not effective	96 (23.7)	192 (47.1)	117 (28.9)	405

4.5 Factors Influencing Uptake of COVID-19 Vaccines

Table 4.4 seeks to establish the social demographic factors that were associated with the uptake of COVID -19 vaccines among the study population. The factors that were found to be associated with vaccination status were age, religion, marital status, employment status, educational level, alcohol consumption status, previous history of COVID-19 diagnosis, previous infection status of relation/friend, COVID-related death of a relation/friend, and awareness of ongoing COVID-19 vaccination campaigns.

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The findings of the study also revealed that gender, ethnicity, smoking (a risky health behaviour) and having a chronic medical condition were not factors that influence the uptake of the vaccine among the study population. It is important to note that, some of these factors mentioned (gender and having a chronic medical condition) were discovered to be associated with COVID-19 vaccine uptake in findings from other studies. For example, the results of a study conducted in Nigeria, (Id et al., 2022) identified gender and having a chronic medical condition to be associated with COVID-19 vaccine uptake.

Table 4.4: Social demographic characteristics influencing uptake of COVID-19 vaccine.

Characteristic	Frequency (Percentage)	Vaccination Status		p-value
		Not Vaccinated	Vaccinated	
Number of Participants		186	219	
Gender				0.224
Male	150 (37.0)	63 (33.9)	87 (39.7)	
Female	255 (63.0)	123 (66.1)	132 (60.3)	
Age				<0.0001*
60 – 64	195 (48.1)	72 (38.7)	123(56.2)	
65 – 69	129 (31.9)	69 (37.1)	60 (27.4)	
70 – 74	60 (14.8)	27 (14.5)	33 (15.1)	
75+	21 (5.2)	18 (9.7)	3 (1.4)	
Religion				<0.0001*
Christian	357 (88.1)	150 (80.6)	207 (94.5)	
Muslim	33 (8.1)	24 (12.9)	9 (4.1)	
Traditional	15 (3.7)	12 (6.5)	3 (1.4)	
Ethnicity				0.064
Ga	117 (28.9)	542 (29.0)	63 (28.8)	
Akan	108 (26.7)	42 (22.6)	66 (30.1)	
Ewe	105 (25.9)	45 (24.2)	60 (27.4)	
Fante	48 (11.9)	30 (16.1)	18 (8.2)	
Other	27 (6.7)	15 (8.1)	12 (5.5)	
Marital Status				<0.0001*
Single	54 (13.3)	6 (3.2)	48 (21.9)	
Married	210 (51.9)	111 (59.7)	99 (45.2)	
Cohabitation	24 (5.9)	15 (8.1)	9 (4.1)	
Separated	42 (10.4)	24 (12.9)	18 (8.2)	
Widowed	75 (18.5)	30 (16.1)	45 (20.5)	

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Employment Status				<0.0001*
Unemployed	66 (16.3)	24 (12.9)	42 (19.2)	
Self-employed	141 (34.8)	90 (48.4)	51 (23.3)	
Employed	108 (26.7)	39 (21.0)	69 (31.5)	
Retired	9022.2)	33 (17.7)	57 (26.0)	
Educational Level				<0.0001*
Primary	69 (17.0)	39 (21.0)	30 (13.7)	
Junior High School	114 (28.1)	69 (37.1)	45 (20.5)	
Senior High School	81 (20.0)	42 (22.6)	39 (17.8)	
Tertiary	105 (25.9)	27 (14.5)	78 (35.6)	
Postgraduate	24 (5.9)	6 (3.2)	18 (8.2)	
No Formal Education	12 (3.0)	3 (1.6)	9 (4.1)	
Cigarette smoker				0.393
Yes	24 (5.9)	9 (4.8)	15 (6.8)	
No	381 (94.1)	177 (95.2)	204 (93.2)	
Consumes Alcohol				<0.0001*
Yes	121 (29.9)	78 (41.9)	43 (19.6)	
No	284 (70.1)	108 (58.1)	176 (80.4)	
Have known chronic medical condition				0.554
Yes	222 (54.8)	99 (53.2)	123 (56.2)	
No	183 (45.2)	87 (46.8)	96 (43.8)	
Previously been diagnosed with COVID-19				<0.0001*
Yes	102 (25.2)	9 (4.8)	48 (21.9)	
No	303 (74.8)	177 (95.2)	171 (78.1)	
Previous infection of relation / friend				<0.0001*
Yes	102 (25.2)	21 (11.3)	81 (37.0)	
No	303 (74.8)	165 (88.7)	138 (63.0)	
COVID-related death of relation / friend				<0.0001*
Yes	30 (7.4)	3 (1.6)	27 (12.3)	
No	375 (92.6)	183 (98.4)	192 (87.7)	
Heard about National Vaccination Campaigns				0.040*
Yes	393 (97.0)	177 (95.2)	216 (98.6)	
No	12 (3.0)	9 (4.8)	3 (1.4)	

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4.6 Association between Socio-demographic characteristics and vaccination status

The strength of association between these socio-demographic characteristics are provided in Table 4.5 below. The odds of getting vaccinated reduced with increasing age. There was however no clear trend for religion, marital status, employment status and educational level. The odds of being vaccinated was higher among persons who did not consume alcohol as compared to those who consumed alcohol.

Participants who had experienced some COVID-19 related event of personal infection, infection of a relation or death of a relation had the highest odds ratios.

Table 4.5: Association between socio-demographic characteristics and COVID-19 vaccine uptake.

Characteristic	Odds Ratio	Standard Error	95% Confidence Interval	
Age				
60 – 64 (Reference)	1.00			
65 - 69	0.97	0.49	0.36	2.63
70 - 74	0.40	0.32	0.08	1.09
75+	0.02	0.02	0.00	0.13
Religion				
Christian (Reference)	1.00			
Muslim	0.27	0.11	0.12	0.60
Traditional	0.18	0.11	0.05	0.65
Marital Status				
Single (Reference)	1.00			
Married	0.11	0.05	0.05	0.27
Cohabitation	0.08	0.05	0.02	0.25
Separated	0.09	0.05	0.03	0.27
Widowed	0.19	0.09	0.07	0.49
Employment Status				
Unemployed (Reference)	1.00			
Self-employed	0.32	0.10	0.18	0.59
Employed	1.01	0.33	0.53	1.91
Retired	0.99	0.33	0.51	1.90
Educational Level				
No formal education (Reference)	1.00			
Primary	0.26	0.18	0.06	1.03
Junior High School	0.22	0.15	0.06	0.85
Senior High School	0.31	0.22	0.08	1.23
Tertiary	0.96	0.68	0.24	3.82
Postgraduate	1.00	0.82	0.20	4.95

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Consumes Alcohol					
	No (Reference)	1.00			
	Yes	0.34	0.08	0.22	0.53
Previously been diagnosed with COVID-19					
	No (Reference)	1.00			
	Yes	5.52	2.09	2.62	11.60
Previous infection of relation/friend					
	No (Reference)	1.00			
	Yes	4.61	1.25	2.71	7.84
COVID-related death of relation/friend					
	No (Reference)	1.00			
	Yes	8.58	5.3	2.56	28.76
Awareness of Vaccination Campaign					
	No (Reference)	1.00			
	Yes	3.66	2.47	0.98	13.73

4.7 Impact of COVID-19 Vaccination Campaign

The pie chart below shows the proportions of participants who had received various dosages of COVID-19 vaccines with 45.9% having received no vaccine at the time of the study. Among the participants who were aware of ongoing COVID-19 vaccination campaign, 54.9% (216/393) were vaccinated and 25% (3/12) of those who were not aware of the vaccination campaign were vaccinated, which finding was not due to chance as shown in Table 4.5 above. Furthermore, among the vaccinated participants, 9.6% (21/219) said they would not recommend the vaccine to a friend or family relation, while 35.5% (66/186) of the participants who had not been vaccinated said they would recommend the vaccine to a friend or family relation with a p-value of <0.0001 at 0.05% significance level.

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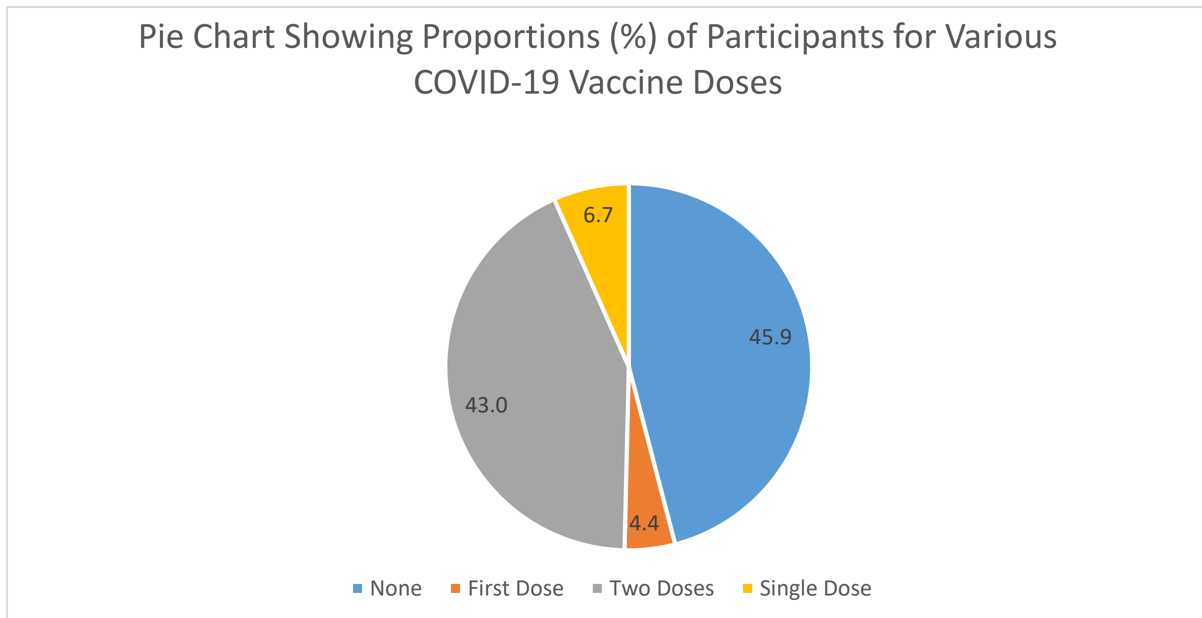

Figure 4.1: Proportions of participants who had received various dosages of COVID-19 vaccines

4.6 Chapter Summary

This chapter shows the results from the data collected. As shown by the findings, though, 97.0% had heard about the ongoing national COVID-19 vaccination campaign, 23.2% did not believe that COVID-19 was real.

The factors that found to be associated with vaccination status (vaccine uptake) were age, marital status, employment status, educational level, consumption of alcohol, previous health events associated with COVID-19, and awareness of COVID-19 vaccination campaigns.

The next chapter discusses the relevance of the findings in relation to current literature.

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CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This chapter discusses the key findings of the study which was conducted among elderly men and women aged 60 years and above in Ablekuma South Sub Metropolitan area. The study sought to identify psychosocial determinants of COVID-19 vaccine uptake among 405 elderly men and women who were randomly selected and interviewed with the aid of a structured questionnaire.

5.2 Factors associated with COVID-19 vaccine uptake

The study describes the factors that influence COVID-19 vaccination among elderly population of the Ablekuma South Sub- Metropolitan area. The socio-demographic factors that were found to be associated with belief in the reality of the COVID-19 pandemic were religion, marital status, employment status, educational level, cigarette smoking status, alcohol consumption status, previous diagnosis with COVID-19, previous infection of a relation with COVID-19, and awareness of ongoing COVID-19 vaccination campaigns. As high as 23.2% (94/405) of the participants did not believe in the reality of the pandemic which reflects on the level of misinformation about COVID-19.

The details of the perceptions about COVID-19 provide some insight into the misinformation in the elderly population of interest in this study. A similar study conducted in Nigeria (Yusuf et al., 2021) identified reasons accounting for the doubt of the population about the information disseminated about COVID-19 which are likely to be present in the incident study population. These included perception of COVID-19 as a political fraud for making money, exaggerated

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information about the pandemic, belief that the information is fake, belief that it is a business venture and intended for causing fear among the population.

Among the sources of information about the pandemic, as much as 93.3% (378/405) of participants received their information about the pandemic from electronic media (which included television and radio). According to the study by Adu-Gyamfi & Asante (2022) in the Gbawe-Mallam municipal assembly in the Greater Accra Region of Ghana, sources of information among the elderly aged 60+years were the radio (87.9%), television (77.6%), social media (3.4%), friends/family/church (86.2%) and public information vans (1.7%). The difference observed in the findings of the two populations could be due to demographic differences between them as well as the aggregation of the electronic media together in this study. The higher proportion that received information from public information vans (24.4%) in this study as compared to 1.7% in the Gbawe-Mallam Municipal Assembly is a reflection in the variability of access to various information services as part of the national COVID-19 information campaign.

The proportion of participants with correct elicited knowledge about COVID-19 and vaccines (46.7% - the vaccine not a cure to the disease, 57.8% - vaccines reduced death rate from the disease) and over 68% of participants having the impression that the vaccines prevented the spread of infection sheds light on the gap in knowledge of the population of interest. Chen et al. (2022) found fake news to be as high as 39.3% in Taiwan which was significantly related to the number of persons in the population who were vaccinated, and the number of vaccines received. Age was particularly found to be significantly associated with misinformation in a study conducted in the UK and Brazil (Vijaykumar et al., 2021). Belief in the focal subject of misinformation was found to be higher in younger adults aged 18-54 years than adults aged

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55+ years. This was attributed to the low credibility that the younger adult group attributed to information shared about the pandemic. This study, however, found no significant association between the different age categories from 60 to 75+ years, which could be attributable to they all perceiving their risks to the disease to be high.

The findings of the study revealed that many participants were vaccinated as a measure of the uptake of COVID-19 vaccines. This was found to be 54.1% (219/405). This proportion may be simply due to a mixture of factors such as the health seeking behavior, acceptance of the vaccine (based on knowledge and perceptions) and socio-demographic characteristics of the participants. A study by Yusuf et al., (2021) in Bangladesh found higher health seeking behavior among persons aged 50+ years. Awuviry-Newton & Abekah-Carter, (2021) in their qualitative study in Ghana found that though many elderly persons sought care in health facilities during the COVID-19 pandemic some felt discouraged on account of the mistreatment they received from the healthcare workers. Limitation in functional mobility could also have contributed to the recorded percentage though the elderly were prioritized (Awuviry-Newton et al., 2022).

The factors found to be associated with vaccination status (vaccine uptake) were age, marital status, employment status, educational level, consumption of alcohol, previous health events associated with COVID-19, and awareness of COVID-19 vaccination campaign. This was corroborated by similar studies done in Nigeria, Poland and Hong Kong (Id et al., 2022; Malesza, 2021; Wong et al., 2022). The Nigerian study however also found gender and having a chronic medical condition to be associated with COVID-19 vaccine uptake.

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Looking further at the strength of association it was found that only previous health events associated with COVID-19 (previous diagnosis with COVID-19, previous infection of a relation, COVID-related death of a relation) and awareness of ongoing vaccination campaign had a positive association with uptake of COVID-19 vaccines. This could be due to the level of misinformation in the population which were countered by the experience of a COVID-19 health event or by the vaccination campaigns. It could also have been influenced by vaccine mandates which restricted what people could do if they were not vaccinated.

The COVID-19 education and vaccination campaigns were expected to make an impact on the uptake of the vaccines. In this study 54.9% of those who were aware of the vaccination campaign got vaccinated while 25% of those who were not aware of the campaign got vaccinated. The 25% could thus be considered as the impact of the campaigns on the vaccine uptake. This is quite a low impact that could be attributed to unaddressed vaccine hesitancy concerns and vaccine misinformation in the population. Furthermore, the fact that only 9.6% of the vaccinated persons would recommend it to a relation highlights a challenge in the vaccination campaign that could be attributed to unmet needs of the vaccinated population such as education on side effects which were reported by a number of persons (Serwaa et al., 2021).

5.3 Strengths and Limitations of the study

The findings from this study serve as a strong basis for identifying the psychosocial determinants of COVID 19 vaccine among the elderly population in Ablekuma South Sub-Metropolitan area. However, the study was limited to only the elderly population, hence the results may not be representative of all who are at a higher risk of infection in Ghana. It will be useful to expand this work to involve all who are at a higher risk of getting infected including medical practitioners and people with underlying medical conditions in Ghana.

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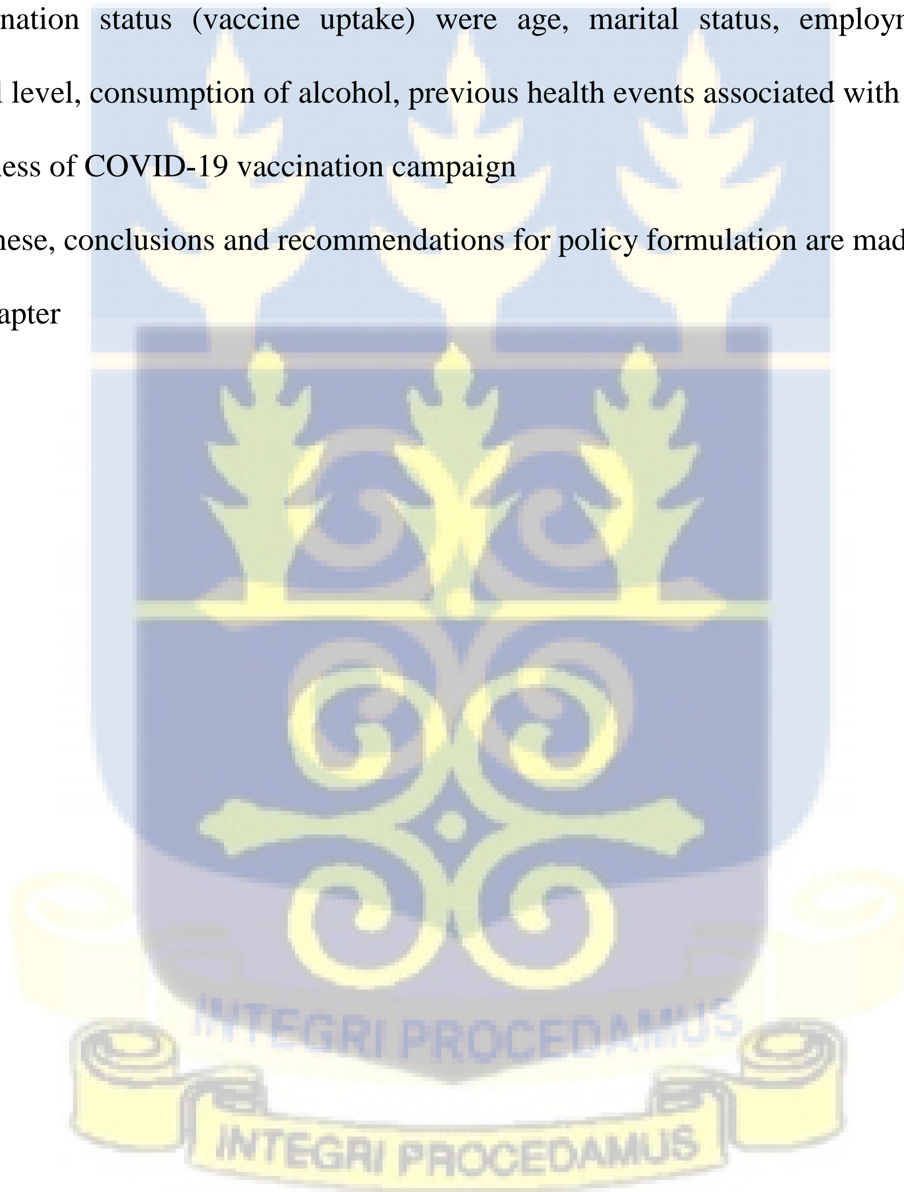
In addition, the reliance on only quantitative method may have denied the researcher the opportunity to get detailed understanding on some findings as well as selection bias.

5.4 Chapter Summary

This chapter has discussed the results of the study. The factors that were found to be associated with vaccination status (vaccine uptake) were age, marital status, employment status, educational level, consumption of alcohol, previous health events associated with COVID-19, and awareness of COVID-19 vaccination campaign

Based on these, conclusions and recommendations for policy formulation are made in the next chapter



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CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

COVID-19 vaccine uptake in the elderly population in Ablekuma South Sub- Metropolitan area was above average and was associated with age, religion, marital status, employment status, educational level, alcohol consumption, previous COVID-19 health event and awareness of ongoing COVID-19 vaccination campaigns. Electronic media reached most of the participants (93.3%) whiles education campaigns by the public information vans reached only 24.4% which reflected a disproportionate use of this information-communication medium. The basic knowledge about COVID-19 and vaccines was generally poor and reflected on the level of misinformation in the study sample. The COVID-19 education and vaccination campaigns made a sub-average impact (25%) on the uptake of the vaccines with 9.6% of vaccinated persons not willing to recommend the vaccination to a relation.

6.2 Recommendations

In view of the findings of the study, the following recommendations are made.

Ghana Health Service

- The Ghana Health Service must intensify the COVID-19 education and vaccination campaign to increase the vaccine uptake among the elderly high-risk population with particular emphasis on addressing the misinformation in the population. The intensification must take advantage of the high access to electronic media while expanding the communication with public information vans to reach more of the target population.

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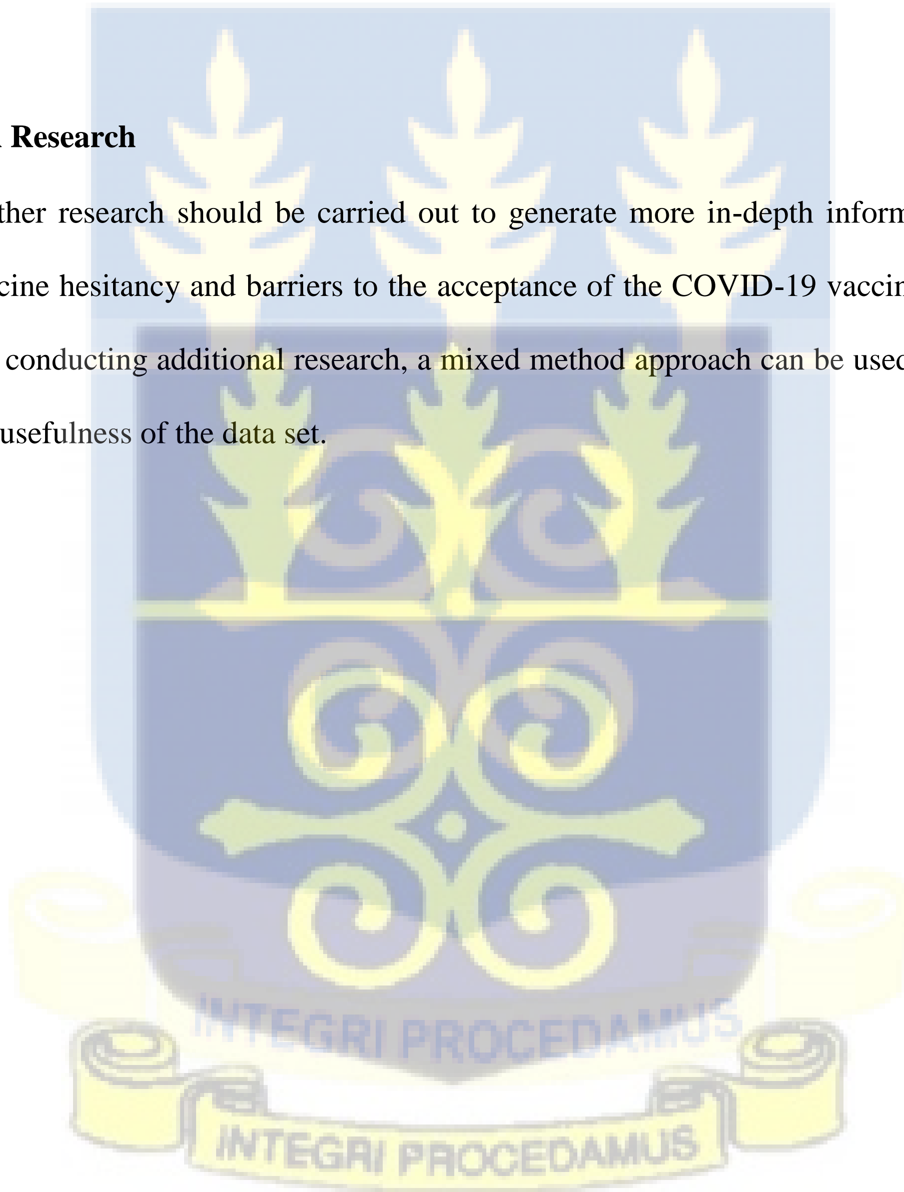
- The Ghana Health Service needs to provide the vaccinated population with adequate information about the vaccines and their side effects. Health workers at the various health facilities must be trained to treat the elderly warmly to encourage them to report to the facilities with complaints and enquiries to deter them from discouraging others from getting vaccinated.



Additional Research

- Further research should be carried out to generate more in-depth information about vaccine hesitancy and barriers to the acceptance of the COVID-19 vaccine in Ghana. In conducting additional research, a mixed method approach can be used to increase the usefulness of the data set.

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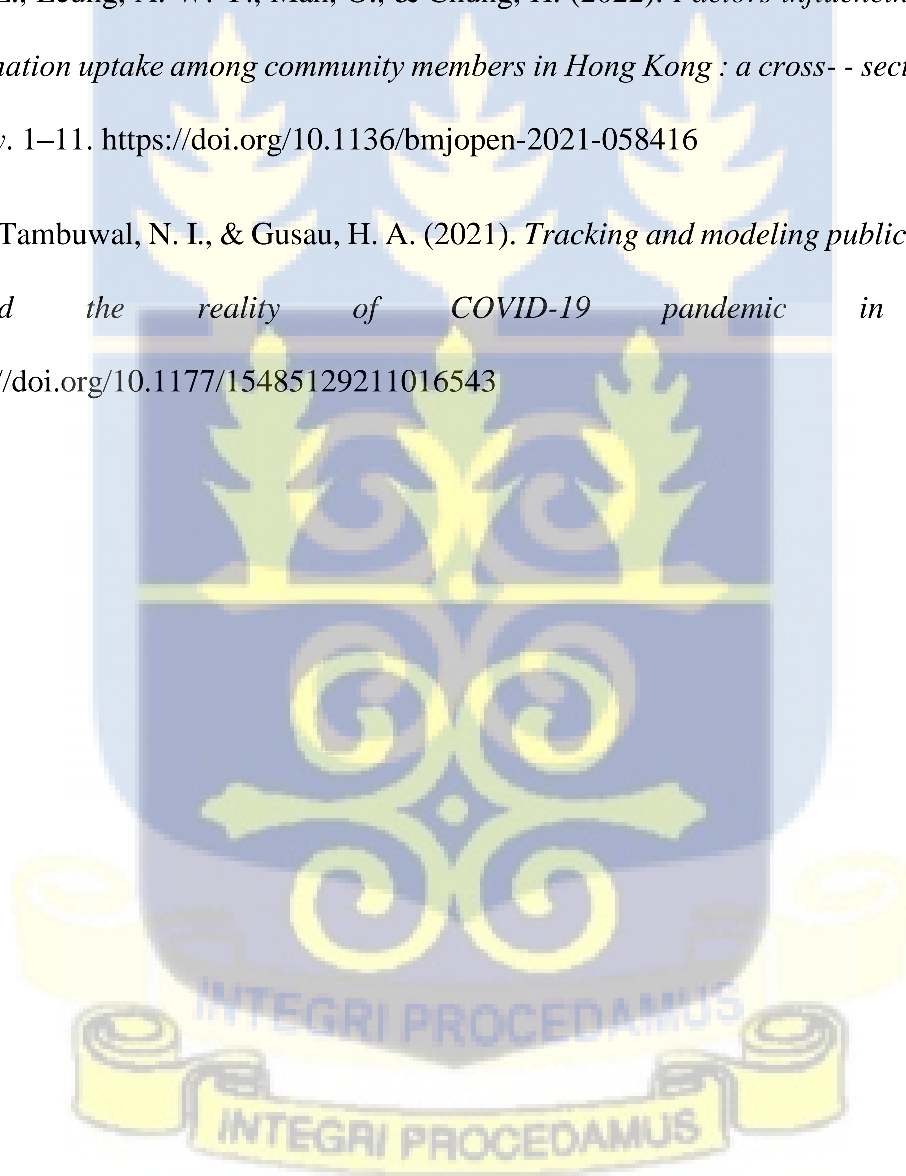

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APPENDICES

APPENDIX 1: PARTICIPANT'S INFORMATION SHEET

TITLE: Psychosocial Factors That Influence COVID-19 Vaccination Uptake Among The Elderly In The Ablekuma South Sub Metropolitan area

PRINCIPAL INVESTIGATOR: Eunice Allotey-Annan

ADDRESS: School of Public Health

Department of Social and Behavioural Sciences

University of Ghana, Legon

EMAIL: euniceaannan@gmail.com **PHONE NUMBER:** 0245977443

Purpose of this research

Dear participant, my name is Eunice Allotey-Annan, a student of University of Ghana, School of Public Health, Legon. I am undertaking a study on the above topic. The purpose of this study is to assess the psychosocial factors influencing COVID-19 vaccine uptake among the elderly population in order to promote vaccine acceptability among the elderly and improve their health and wellbeing.

Nature of research

This study involves individuals aged 60 years and above, residing in the Ablekuma South Sub-Metropolitan area as at the time of the survey. It aims to investigate the psychosocial determinants that influenced COVID-19 vaccine uptake among the elderly population in the Ablekuma South Sub- Metropolitan area. 405 people will take part in this research

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Length of research

We expect this research to last for 4 weeks. However, you will be required to provide information just this once. It will take approximately 15 minutes to complete this questionnaire.

Expectations for this research

If you take part in this research, you will be expected to complete the following. You will sign a consent form after which you will be guided to complete a questionnaire which will provide us with some relevant information about you.

Participant Responsibilities

- To provide accurate answers to the questionnaire
- To cooperate with the investigator and research assistants

Potential Risks

There is no risk or discomfort in participating in this study.

Benefits from being in this research study

There are no direct benefits for you from this study. However, your participation would strengthen efforts of our public health institutions in achieving maximum vaccine coverage and also national policy formulation targeted towards older adults.

Cost

There will be no cost involved on the part of the participant. Participants do not have make payments in order to take part in this study.

Compensation for this research study

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There will not be any compensation for participating in this study

Confidentiality

All information provided by participants in this study will be treated with strict confidentiality. All the questionnaire responses will be anonymous and cannot linked to any person or family. Furthermore, IDs or codes will be separating the individual questionnaires and will not have any resemblance to any of the participant's actual identity in any study publications.

The questionnaires and other data collected will also be kept under lock and key and password provided on the softcopies of all study data.

Voluntary participation/withdrawal

Taking part in this research is voluntary. If you decide not to take part in this study, you may leave/stop the study at any time. Refusal to participate or stopping your participation will not jeopardize your healthcare and there will be no punishment or penalty attached to such decisions. If you would like to stop participating in this research kindly let us know.

Feedback to participant

No feedback will be given to participants involved in the study.

Funding Information

There are no sponsors available for this study hence all costs involved is financed by the Principal Investigator.

Sharing of Participants Information

All information or data from the study is the sole property of the Principal Investigator.

Provision of Information and Consent for Participants

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A copy of this participant information sheet will be given to you, the participant to keep after you have signed or thumb printed.

Contacts

The principal Investigator of this study is Eunice Allotey-Annan. You may contact her in person at the School of Public Health, Social and Behavioural Sciences Department or on Phone: 0245977443.

Other contacts include: Dr. Faustina Hayford Blankson - 0506564221 (Supervisor)

- If you have questions, concerns, or complaints,
- If you would like to talk to the research team,
- If you think the research has hurt you, or
- If you wish to withdraw from the study.

Also, for any further clarification or ethical concerns please contact the Administrator of the Ghana Health Service Ethics Review Committee, Nana Abena Apatu on phone, 0503539896, and via e-mail ethics.reseach@ghsmail.org

Or in person at

GHS-Ethical Review Committee

Research and Development Division

Adabraka Polyclinic Hospital

Cathedral Square, Castle Road, Accra-Ghana.

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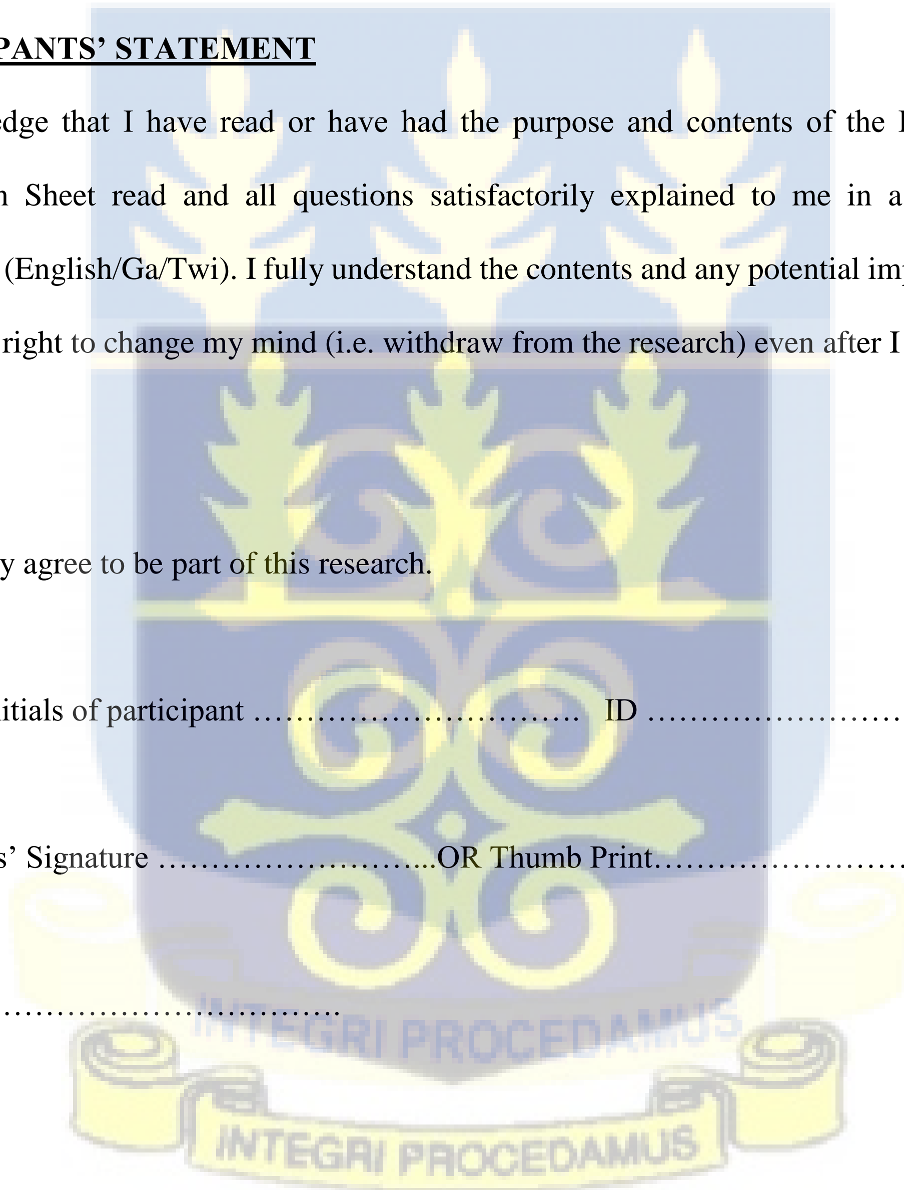
CONSENT FORM

STUDY TITLE: Psychosocial Determinants of COVID-19 Vaccine Uptake Among The Elderly Population In The Ablekuma South Sub Metropolitan area



PARTICIPANTS' STATEMENT

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions satisfactorily explained to me in a language I understand (English/Ga/Twi). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of participant ………………………… ID ………………………

Participants' Signature ……………………...OR Thumb Print……………………………

Date…………………………………..

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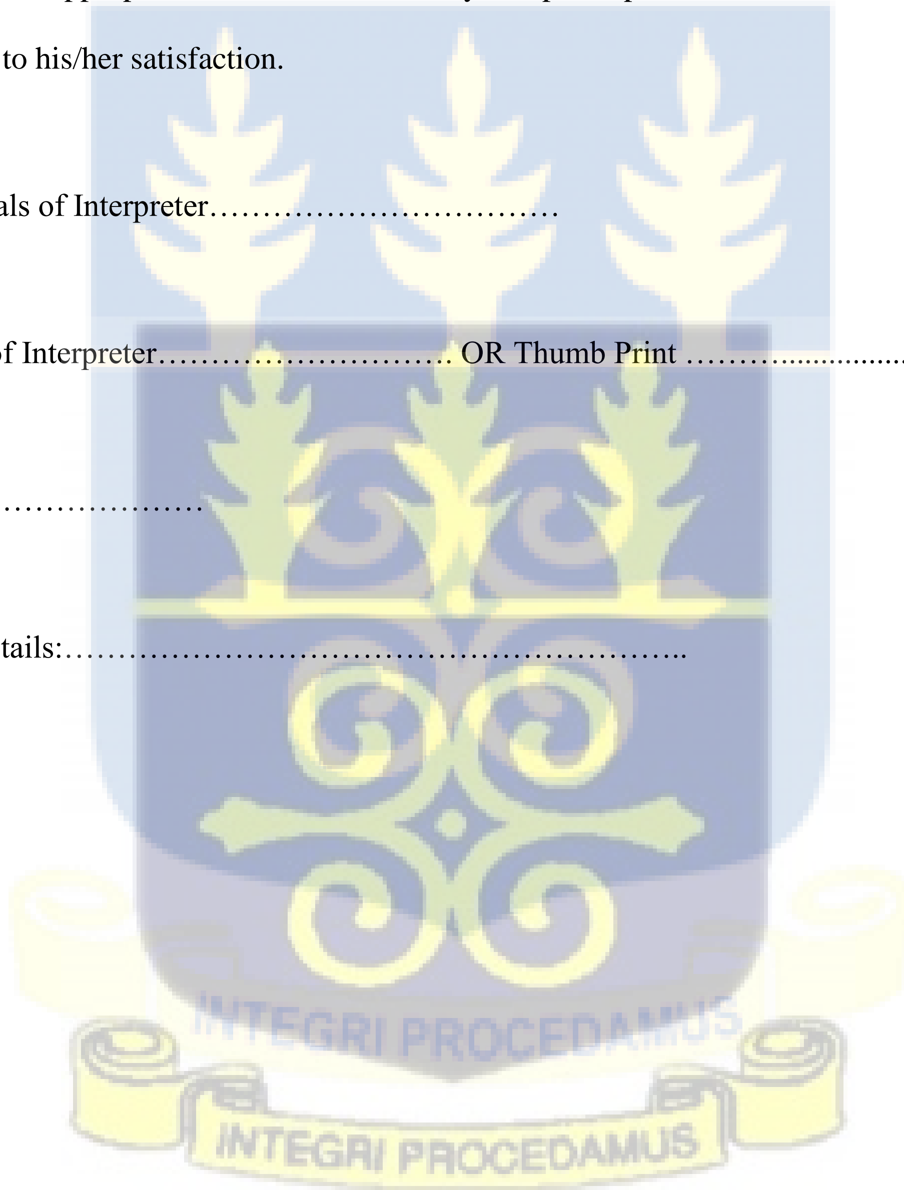
INTERPRETERS' STATEMENT

I interpreted the purpose and contents of the Participants' Information Sheet to the afore named participant to the best of my ability in the Ga/Twi language to his/her proper understanding.

All questions, appropriate clarifications sort by the participant and answers were also duly interpreted to his/her satisfaction.



Name/Initials of Interpreter……………………………

Signature of Interpreter………………………. OR Thumb Print ……...............................

Date………………………

Contact Details:……………………………………………….

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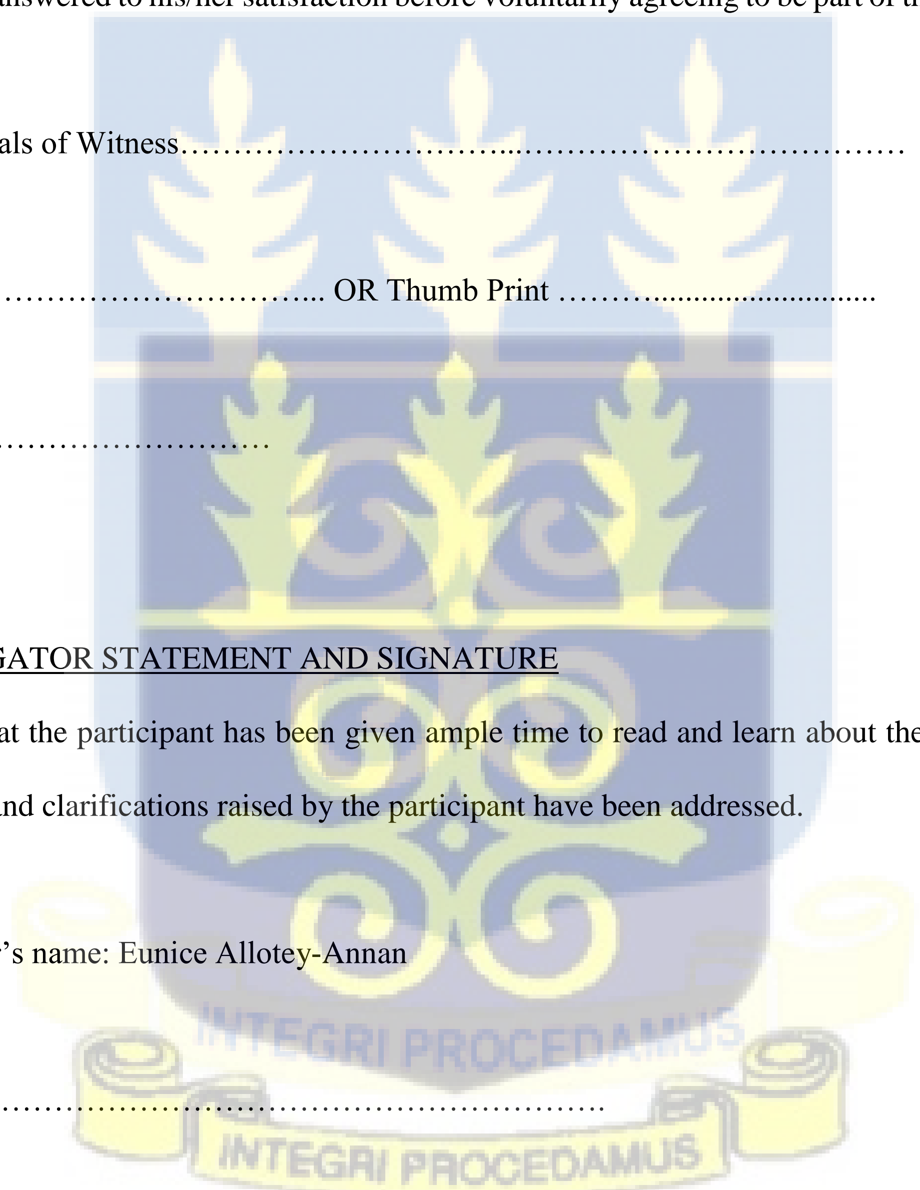
STATEMENT OF WITNESS

I was present when the purpose and contents of the Participant Information Sheet was read and explained satisfactorily to the participant in the language he/she understood (English/Ga/Twi)

I confirm that he/she was given the opportunity to ask questions/seek clarifications and same were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.



Name/Initials of Witness…………………………..………………………………

Signature………………………….... OR Thumb Print ……….........................

Date……………………………

INVESTIGATOR STATEMENT AND SIGNATURE

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name: Eunice Allotey-Annan

Signature ……………………………………………………

Date……………………………………………………….

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APPENDIX 2: QUESTIONNAIRE

PSYCHOSOCIAL FACTORS THAT INFLUENCE COVID-19 VACCINATION UPTAKE AMONG THE ELDERLY IN THE ABLEKUMA SOUTH SUB-METROPOLITAN AREA

Kindly tick (✓) the bracket space next to the answer you want to select and write on the dotted line in areas that require a write up in response

PART A: SOCIO-DEMOGRAPHIC DETAILS						
1.	Age (years)					………………
2.	Sex				Male ( )	Female ( )
3.	Ethnicity	Akan ( )	Ga ( )	Fante ( )	Ewe ( )	Other …………
4.	Educational level	Primary ( )	JHS ( )	SHS ( )	Tertiary ( )	Post Graduate ( )
5.	Religion	Christian ( )	Muslim ( )		Traditional ( )	Other …………
6.	Marital status	Married ( )	Cohabiting ( )	Single ( )	Separated ( )	Widowed ( )
7.	Occupation	Retired ( )	Self Employed ( )		Employed ( )	Unemployed ( )
8.	Who do you stay with?	Alone ( )	Spouse / Partner ( )		Child(ren) ( )	Other …………

PARTB: PARTICIPANTS HEALTH STATUS			
9.	Do you have any chronic Disease conditions?	Yes ( )	No ( )
If Yes, please specify ………………………………………………………………………………			
10.	Are you taking medications?	Yes ( )	No ( )
11.	Do you Drink Alcohol?	Yes ( )	No ( )
12.	Do you smoke?	Yes ( )	No ( )
PART C: COVID 19 PANDEMIC AWARENESS			
13.	Do you believe in the existence of covid 19 disease?	Yes ( )	No ( )
If No, *please tick as applicable*		Yes	No
a.	It is not a disease of black people		
b.	It is a plot to put fear in us		
c.	It is something engineered by some people for personal reasons		
d.	Other, please specify ………………………………………………………………………		
14.	What are the symptoms of Covid- 19 virus disease? *(please tick as applicable)*	Yes	No
a.	Fever		
b.	Cough		
c.	Ear pain		
d.	Diarrhoea		
e.	Loss of taste and smell		
f.	I don't know any Covid-19 Symptoms		

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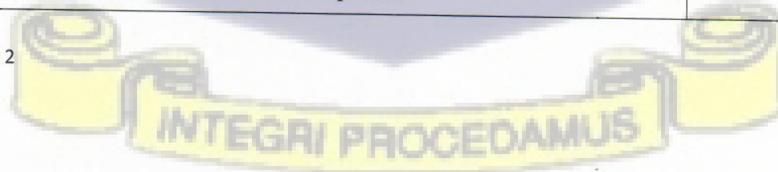
15.	What is the source of your information on Covid-19? *(please tick as applicable)*	Yes	No
a.	Media		
b.	Family/ Friends		
c.	Personal Experience		
d.	Information Vans		
e.	Others please state …………………………………………………………………………		
16.	How is Covid-19 transmitted? *(please tick as applicable)*	Yes	No
a.	Drinking contaminated water		
b.	Eating poorly cooked food		
c.	Sexual contact		
d.	Inhaling Respiratory droplets from infected persons		
e.	Eating or touching wild animals		
f.	Others please state …………………………………………………………………………		
17.	What are some of the preventative measures against covid-19 infection? *(please tick as applicable)*	Yes	No
a.	Wearing nose masks		
b.	Regular handwashing		
c.	Using detergents		
d.	Social distancing		
e.	Consuming vitamin C		
f.	Drinking herbal preparations		
g.	Taking in Zinc supplements		
h.	Avoiding touching face/mouth/eyes and nose		
i.	Others please state …………………………………………………………………………		
18.	Do you believe there is a cure for covid-19 disease?		
	PART D: EXPERIENCE AND KNOWLEDGE OF COVID 19 DISEASE		
19.	**Have you ever been diagnosed with Covid-19 disease?**	Yes ( )	No ( )
If yes, was it by: *(please tick as applicable)*		Yes	No
a.	**Symptoms with a Positive test**		
b.	By symptoms alone		
c.	**Positive test after contact with infected person**		



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20.	Have you ever been tested for Covid-19 disease?	Yes ( )	No ( )
If No, *please tick as applicable*		Yes	No
a.	I have never had symptoms		
b.	I don't believe Covid-19 exists		
21.	Have you ever tested positive for Covid-19 disease?	Yes ( )	No ( )
If yes, what did you do after you received the results? *(please tick as applicable)*		Yes	No
a.	I was in self-isolation at home alone		
b.	I was in self-isolation at home and given medications		
c.	I was admitted at the hospital and later discharged		
d.	I went on with my life normally		
22.	Do you have a close relative / friend who has or has had Covid-19 disease?		
23.	Do you have a close relative / friend who has died from Covid-19 disease?		
24.	Do you believe Covid-19 kills people?		
25.	Do you believe the **number of cases** reported by the government authorities?		
26.	Do you believe the **number of deaths** reported by the government authorities?		
27.	Do you believe that Elderly people are at a higher risk from **infection and complications** from the Covid-19 disease?		
28.	Do you believe that Elderly people are at a higher risk of **dying** from the Covid-19 disease?		
	PART E: COVID 19 VACCINATION AWARENESS		
29.	Have you heard of the Covid-19 vaccination program?	Yes ( )	No ( )
If yes, how did you hear? *(please tick as applicable)*		Yes	No
a.	Through the Media		
b.	From information Vans		
c.	From a relative/friend		
d.	Read about it		
30.	What do you know about the Covid-19 vaccine? *(please tick as applicable)*	Yes	No
a.	It is to cure the disease		
b.	It is to prevent the spread of the disease		
c.	It is to reduce the death rate associated with the disease		
d.	It is not effective		

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31.	In your opinion which group of people should be given preference based on availability of the vaccine? *(please tick as applicable)*	Yes	No
a.	Children		
b.	Youth		
c.	Adults		
d.	Elderly		
e.	Health care workers		
f.	People with underlying health conditions		
32.	Have you received Covid-19 vaccination?	Yes ( )	No ( )
	If No, why? *(please tick as applicable)*	Yes	No
a.	I was ill at the time of the vaccination		
b.	I react to vaccinations		
c.	I don't believe Covid-19 exists		
d.	I know someone who had adverse reactions after taking it so I decided not to		
e.	I have never had symptoms		
33.	If Yes, how many doses have you received? First ( )	Both ( )	Single ( )
34.	Will you take the vaccine that is being freely offered by the government?	Yes ( )	No ( )
	If No, why? .... tick as many as apply		
a.	Vaccination is for children NOT adults		
b.	I have natural immunity against the virus		
c.	My local herbal preparations are preventive enough		
d.	I don't think the vaccines are effective		
e.	It is against my religious beliefs		
f.	I am concerned about the safety and side effects of the vaccine		
g.	I have had the infection already and I have recovered so I don't need the vaccine		
h.	I heard the vaccines are dangerous and they will be used to control us		
35.	Will you recommend a friend or family member to take the vaccine that is being freely offered by the government?	Yes ( )	No ( )

Thank you for your time

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APPENDIX 3: ETHICS APPROVAL LETTER

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
23rd February, 2022

My Ref. GHS/RDD/ERC/Admin/App 22/059
Your Ref. No.

Allotey-Annan Eunice
P. O. Box AN 6786 Accra – North, Ghana

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

GHS-ERC Number	**GHS-ERC: 025/10/21**
Study Title	Psychosocial Determinants of Covid-19 Vaccine Intake Among the Elderly Population in the Ablekuma South Sub Metro
Approval Date	23rd February, 2022
Expiry Date	22nd 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

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