

**EFFECTS OF COVID-19 ON UPTAKE OF ANTENATAL CARE SERVICES BY
PREGNANT MOTHERS IN BUKEDEA HEALTH CENTER IV, BUKEDEA
DISTRICT**

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**A DISSERTATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, NURSING AND
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DECLARATION

I, Namutebi Zuena, hereby declare that this dissertation entitled, 'Effect of Covid-19 and Underlying Factors Affecting Uptake of Antenatal Care Services by Pregnant Mothers in Bukedea Health Center IV, Bukedea District' is truly my original work and has never been submitted to any other University or Institution for any award of degree or any other qualification.

Signature:  _____

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Date: 22ND / APRIL / 2024

APPROVAL

I certify that this dissertation entitled, 'Effect of Covid-19 and Underlying Factors Affecting Uptake of Antenatal Care Services by Pregnant Mothers in Bukedea Health Center IV, Bukedea District' has been under my supervision and is now ready for submission to the School of postgraduate for external examination.

Signature:  _____

DR. JENNIFER WANYANA (SUPERVISOR)

Date: 22nd April, 2024

DEDICATION

I would like to dedicate this research to my parents and entire family for their endless support and prayers in every walk of life not forgetting my beloved brothers and sisters for their help. I cannot proceed without special dedications to all my friends and well-wishers who were always there for me in times of need.

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ABSTRACT

The study aimed at assessing the effect of the Covid -19 pandemic and underlying factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District. Study objectives included: to examine the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic; to assess the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic; and to examine the perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic. A cross-sectional analytical research design was employed using both qualitative and quantitative approaches. The sample comprised of 120 pregnant women accessing ANC, ten (10) ANC health practitioners at Bukedea Health Center IV and six (6) district health stakeholders (comprising 1 District Health Officer, 1 Chief Administrative Officer, 1 Chairperson LC V, 2 District Health Inspectors and 1 RDC). Simple random selection of the pregnant women and purposive sampling of the rest of the respondents (listed above) were carried out. Data was collected through questionnaires and interviews. Quantitative data was analyzed through the SPSS and thematic content analysis was used to analyze qualitative data.

Study findings revealed that there was a significant relationship between Covid-19 pandemic and uptake of ANC services among pregnant women in Bukedea Health Centre IV ((Adjusted R square =0.6851). This implies that during Covid-19 pandemic, fear of contracting Covid-19; travel restrictions; the increased transport prices; and closure of ANC clinic limited pregnant women uptake to ANC services to the health facility.

The findings also revealed that there was a significant relationship between government initiatives and uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV (Adjusted R squared =.203). This implies that ensuring adherence to government initiatives would lead to improvement in uptake of ANC services among pregnant mothers during the Covid -19

pandemic in Bukedea Health Centre IV. In other words, the existing institutional and legal framework,
political

will, government budget allocation, donor funding and stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers.

The findings further revealed that there is a significant relationship between perceived quality of health care and uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV (Adjusted R square = .464). This implies that in perceived quality of health care, attitude of health workers, time spent or long queues, the structure of the health facility, existence of women departments at the health facilities and payment for health care provided in health facilities influence pregnant women uptake of ANC services in health facility.

Basing on the above findings, it is concluded that there is significant relationship between the Covid -19 pandemic, its underlying factors, and the uptake of ANC services by pregnant women at Bukedea Health Center IV. The study recommended that the government of Uganda to allow ANC outreach services so as to reach to the pregnant women who cannot access health facility during Covid-19 pandemic. More funding by the government and other development partners should focus on enhance outreach ANC services. The government to recruit more health workers, provide free mosquito nets and provide home-based health care.

ACRONYMS AND ABBREVIATIONS

ANC	Antenatal Care Services
COVID-19	Coronavirus disease 2019
DV	Dependent Variable
IV	Independent Variable
LMICs	Low-Income and Middle- Income Countries
KNRH	Kawempe National Referral Hospital
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
SSA	Sub-Saharan Africa
SPSS	Statistical Package for Social Scientists
PMTCT	Prevention of Mother-to-Child Transmission
RDC	Resident District Commissioner
TBAs	Traditional Birth Attendants
UCU	Uganda Christian University
UPE	Universal Primary Education
USE	Universal Secondary Education
WHO	World Health Organization

DEFINITIONS OF KEY TERMS

Covid-19: The novel coronavirus, which causes coronavirus disease (COVID-19), has spread rapidly since emerging in late 2019 (Riley *et al.*, 2020); and the World Health Organization (WHO) declared the disease a global pandemic on March 11, 2020 (More than 49,373,235 confirmed cases and 1,243,083 deaths were reported globally as of October, 2020 (World meter, 2020).

Antenatal healthcare: Antenatal healthcare is defined by the WHO as the “care a pregnant mother receives before birth”, and involves education, screening, counselling, treatment of minor ailment, and immunization services (Akowuah *et al.*, 2018).

Research Design: According to Cohen (2011), research design can be defined as a general plan that gives an outline on how data will be collected and data analysis procedures.

Data Sources: According to Creswell (2014), “data sources refer to the existing recognized literature whether published or unpublished as long as it has been accepted by the academic for any organization of good reputation”.

Purposive Sampling: Kakooza (2002) defines purposive sampling as the selection of a convenient sample in the study.

Validity: According to Sekaran (2003), validity is the extent to which the instrument gives the correct answer. It is the degree of congruence between the explanations of the phenomena and the realities of the world.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Uganda, as with many nations in the WHO Africa region, has largely avoided the considerable infection rate and death toll from Covid-19 that other nations saw during the first wave, with 84,116 confirmed cases and 1,966 deaths reported as of 6th July 2021 (Burt. *et al.*, 2021). While this is like under-representative of the true morbidity and mortality, Uganda successfully minimized the spread and direct impact of Covid-19 within its borders through its early, rapid and severe response. However, antenatal, and other reproductive health services were severely impacted by these measures during the height of the lockdown. Governments, in order to control the spread of Covid-19, implemented various measures such as social distancing and lockdowns. These lockdowns could affect individuals and families in terms of their ability to access the services.

On the other hand, health care systems lost resources to sustain the uninterrupted provision of services especially Antenatal care (McKee & Stuckler, 2020). Preparation and readiness measures against Covid-19 in Uganda began between January and March 2020, focusing on health systems strengthening and capacity building, aided by early allocation of WHO funding. From 2 March, the public were informed of the threat of Covid-19, with education and training subsequently disseminated (WHO, 2020). Testing focused on contacts of identified cases and those returning from travel, with population-wide lockdown measures imposed quickly after the first case in Uganda was reported on 21 March 2020. This included border closures, port-of-entry screenings and quarantines for travelers.

By 25 March, this escalated to a ban on group gatherings and non-essential internal travel, recommendation to work from home and close schools. The travel restrictions included the

cessation of all public transport and a ban on the use of private vehicles without explicit permission to travel. At a local level, non-essential visits to Kawempe National Referral Hospital (KNRH) were prohibited for a short time (from 23 March 2020 to 21 April 2020), which included the closure of ANC and childhood immunization clinics. The Ugandan Ministry of Health (MoH) implemented PCR-based screening for symptomatic patients and any patient who was PCR positive was admitted to a dedicated ward (Burt. *et al.*, 2021).

The study aims to examine the influence of COVID-19 pandemic and underlying factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District. This chapter contains the background of the problem, the problem statement, study objectives, and research questions. It also highlighted the scope of the study, justification and significance of the study, and conceptual framework.

1.1 Background to the Study

Globally, 303,000 maternal deaths occur due to pregnancy and childbirth-related complications each year, with 99% of them occurring in SSA (Sub-Saharan Africa) and Southern Asia (Ayalew & Nigatu, 2018). Antenatal care helps to reduce the occurrence of maternal morbidity and mortality by providing information about danger signs, health promotion, birth preparedness, and care for pregnancy complications. Even though the WHO recommends at-least six-eight ANC visit a for pregnant women, the maternal mortality during pregnancy or within 42 days of termination of pregnancy still remains high in Sub-Saharan Africa, including Uganda (Ayalew & Nigatu, 2018). According to Alkema., Chou, Hogan, Zhang, Moller, & Gemmill (2016), even though the health of mothers is mostly regarded as the health of the society, and estimated 303,000 maternal deaths occurred worldwide in 2015; which is a decline of 43 percent from 1990. Maternal mortality as a result of antenatal complications remains unacceptably high across much of the developing world especially Sub-Saharan Africa (SSA) and South Asia accounting

for 87% of maternal death. Indeed, majority of maternal and antenatal complications occur during antenatal period and childbirth. The estimated ratio (MMR) declined across all MDG regions between 1990 and 2017, although the magnitude of reduction varies substantially between couples and religions (WHO, 2020).

Coronavirus disease 2019 (COVID-19) pandemic affected the health and lives of people across the globe. This has also affected the health care services for maternal and child health (Kirmani & Saleem, 2021). Due to the COVID-19 pandemic, a large proportion of health care resources have been diverted from routine care delivery to the pandemic response. This diversion of resources may lead to the disruption of other essential care services (Sinha., Bennett & Taylor-Robinson, 2020). This can affect the continuum of care, i.e., follow-up visits and medication supplies. Furthermore, service utilization by the population may also decline due to unavailability, fear of infection and constrained access (Hailemariam., gegnehu & Derese, 2021). All these factors can adversely affect the most vulnerable segment of the population, i.e., pregnant women. More factors ranging from individual, socio-economic, cultural and institutional factors have an influence of pregnant women attitude towards accessing ANC services. Regrettably, all these have hitherto remained mere allegation without systematic answers to the predicament. This prompted the current researcher to consider the path of the research study.

Antenatal Care and services are aimed at reducing the complications of child birth among pregnant mothers. This has been ensured at the global arena by the World Health Organization through the 2016 ANC guidelines (Alkema., Chou, Hogan, Zhang, Moller, & Gemmill, 2016). These guidelines have been utilized in both the developed and the developing world in which the number of complications experienced by pregnant mothers have significantly reduced. However, during the spread of the Covid-19 pandemic, the number of complications for pregnant mothers

increased in Uganda (Burt *et al.*, 2021). This raises debates about the influence of the Covid-19 disease on the ANC programs in Uganda and the underlying factors affecting ANC uptake during this period. Timely and comprehensive antenatal care (ANC) is critical for the health of women and their newborns, allowing for the early detection and management of pre-existing conditions and pregnancy-related complications and reducing the risk of maternal and infant morbidity and mortality (Islam & Tabassum, 2021). Interestingly, no single factor can be pointed to, to be responsible for this paucity something that this research study delve in.

WHO recommends a minimum of eight ANC visits during a woman's pregnancy, with the first visit occurring during the first trimester of gestation (WHO 2020); however, significant barriers continue to exist for adequate ANC. In Kenya, site of the present study, only 58% of women reported attending at least four ANC visits in the most recent Demographic and Health Survey conducted in 2014 (KNBS, 2015). The Covid-19 pandemic has been extremely disruptive to health systems and services worldwide. Early data indicate that the pandemic has decreased women's use of ANC (Townsend *et al.*, 2021); including in low-income and middle-income countries (LMICs) (Burt *et al.*, 2021). The Covid-19 pandemic has also worsened maternal and perinatal outcomes, particularly for vulnerable groups in LMICs (Chmielewska *et al.*, 2021); but more information is needed about changes in care-seeking patterns during this period. The government of Uganda Government through the Ministry of Health and other development partners attempted to address the reproductive health gap to improve the uptake of ANC by pregnant mothers during Covid-19 pandemic but these efforts appear to have failed to yield to positive results in Bukedea district.

Like any other country, Uganda was also prone to negative consequences of the Covid-19 pandemic in terms of provision of routine Antenatal care besides the Covid-19 response. In order to curb the spread of infection in the country, a number of measures were taken such as mass

media campaigns about Covid-19 infection and preventive strategies, promotion of social distancing, closure of educational institutions, travel restrictions and complete lockdown (McKee & Stuckler, 2020); and this was investigated, especially scrutinizing the frequently effects of Covid-19 and underlying factors affecting uptake of ANC by pregnant mothers.

Besides these, a number of changes were also made in the health care system which included the establishment of treatment and isolation facilities for cases, the establishment of screening centers in primary care. These facilities were established by converting existing centers into special entities dealing with patients and suspected cases (Nakkazi, 2021). Some of the antenatal care centers also faced closure due to a shortage of staff. Appointments of routine essential primary and acute care in these facilities were cancelled and patients were diverted to other nearby functioning health centres (McKee & Stuckler, 2020). Despite their efforts to increase accessibility to ANC, Bukedea District in Uganda, a resource-poor district with significant geographic and socio-cultural diversity, also exhibits a similar problem of inaccessibility to ANC during the lockdowns. There is ample evidence to show that the usage of essential health services, especially antenatal care, is significantly impacted by severe and escalating economic inequality. To this purpose, the district registered a total of 1,024 pregnant mothers between the ages of 13 and 34 years during the two Covid-19 state-wide lockdowns (Nakkazi, 2021), however around 160 mothers in the district were reported to have passed away as a result of delays in getting antenatal care (Poote & McKenzie-McHarg, 2019). In light of this, the researcher aimed at closing the knowledge gap.

1.2 Statement of the Problem

Ideally, antenatal care is aimed at reducing complications before, and during child-birth among pregnant women (Gudayu *et al.*, 2014; Kisuule *et al.*, 2013). Government of Uganda in-conjunction with Ministry of Health and other development partners has ensured that more

pregnant women access ANC services at different health facilities in the country thereby ensuring that over 94% of have reported having attended ANC (Atuhaire & Mugisha, 2020). However, the numbers of pregnant mothers accessing the ANC services significantly reduced during the Covid-19 pandemic to 37% which was attributed to the strict implementation of the Standard Operating Procedures which were not supposed to be violated, which further resulted in increased childbirth complications as well as mortality rates in the health facility (Burt *et al.*, 2021). The district registered a total of 1,024 pregnant mothers between the ages of 13 and 34 years during the two Covid-19 state-wide lockdowns (Nakkazi, 2021), however around 160 mothers in the district were reported to have passed away as a result of delays in getting antenatal care.

Subsequently, Bukedea District Local Government put up measures to address the issue of ANC uptake by pregnant women by strengthening inspection of health facilities, VHT, in addition to the Ministry of Health involvement in publicity. This has been done with an intention of improving the uptake of ANC services among pregnant women (Nakkazi, 2021). Despite these interventions in place, the uptake of ANC among pregnant women at Bukedea HC IV remained low. It's in this light that the research calls for more studies geared towards exploring the influence of Covid-19 and underlying factors affecting uptake of ANC services by pregnant mothers at Bukedea Health Center IV, Bukedea District.

Antenatal care (ANC) is a critical intervention aimed at reducing maternal and neonatal complications by ensuring timely healthcare for pregnant women (Gudayu et al., 2014; Kisuule et al., 2013). In Uganda, the government, in collaboration with the Ministry of Health and development partners, has made significant efforts to enhance ANC access, leading to an impressive 94% attendance rate before the COVID-19 pandemic (Atuhaire & Mugisha, 2020). However, during the pandemic, ANC attendance at health facilities dropped drastically to 37%,

largely due to the enforcement of strict Standard Operating Procedures (SOPs), which limited access to essential maternal healthcare. This decline contributed to increased childbirth complications and maternal mortality (Burt et al., 2021). In Bukedea District, during the two COVID-19 lockdowns, 1,024 pregnant women were registered, yet approximately 160 maternal deaths were reported due to delays in accessing ANC services (Nakkazi, 2021).

To address this issue, the Bukedea District Local Government implemented measures such as strengthening health facility inspections, enhancing the role of Village Health Teams (VHTs), and collaborating with the Ministry of Health to promote ANC service uptake (Nakkazi, 2021). Despite these interventions, ANC attendance at Bukedea Health Center IV remained low.

While existing studies have examined the general impact of COVID-19 on healthcare services, there is limited research specifically investigating the factors that specifically affected ANC uptake at the district level, particularly in Bukedea Health Center IV. The knowledge gap lies in understanding the specific challenges pregnant women faced in accessing ANC services post-COVID-19.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the study was to determine the influence of the Covid -19 pandemic and underlying factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District.

1.3.2 Specific Objectives

The following study objectives were used:

1. To examine the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV.
2. To assess the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV.
3. To examine the perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV.

1.4 Research Questions

The study research questions included:

1. What is the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV?
2. What is the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV?
3. What is the perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV?

1.5. Scope of the Study

The scope of the study comprised of the content scope, geographical scope and time scope as follows: -

1.5.1 Content Scope

The study concentrated on the influence of Covid -19 and underlying factors affecting uptake of Antenatal Care Services by pregnant mothers. Specifically, it was based on examining the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic, assessing the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic, and examining the perceived quality of health care on uptake of ANC services among pregnant women during the Covid-19 pandemic. The subject of the study was based on such objectives in discussing and presenting the study findings of the entire report. The factors were conceptualized under the different government initiatives and directives to curb the spread of Covid -19, as well as the perceived quality of health care the hospitals. Besides, ANC uptake of mothers was measured in terms of accessibility to the services, social support and aid.

1.5.2 Geographical Scope

The study was carried out in Bukedea Health Centre IV, which is an Anglican Church founded hospital located in Corner ward, Corner Cell, Bukedea Town Council in the western outskirts of Bukedea District. It is the only health Centre IV in the district and owned by government, serving a total population of about 220,000 people (Bukedea LG, 2022). Bukedea Health Centre IV intentionally was selected as a study site by considering the health status of women in the Town Council, and lack of previous researches related to antenatal health care services.

1.5.3 Time Scope

The study entailed literature review between 2019 and 2023. This is because this was the period in which the Covid -19 pandemic spread all over the world, which warrants the use of the literature. During the same period, Bukedea District experienced high maternal mortality and low antenatal care attendance (Bukedea LG, 2022). It was the time when seeking of antenatal care have gradually

continued to deteriorate and the rise in the antenatal related complications was observed (Bukedea LG, 2022). Additionally, this period was selected to enable the researcher come up with coherent and updated information that was based on to make recommendations and conclusions for this study. Secondly, the research considered the time frame from 2022 to 2023 so as to enable the researcher complete other educational assignments as per the university calendar.

1.6 Justification of the Study

A number of studies have been carried out concerning the influence of Covid -19 in a number of countries, Uganda inclusive. These studies have majorly been concerned with the effects of Covid -19 on health care in the urban setting (for instance Burt *et al.*, 2021; Plotkin *et al.*, 2022; Tumwesigye *et al.*, 2021). However, there are no studies that have been carried out in the rural setting of both the health centres as well as the rural communities, justifying the reason for this study as policies that are enacted concerning the country's health care generalize the country's health minus considering the differences in the health setting in rural areas and health centres in rural areas. Therefore, Bukedea district was viewed as a case for representation of the effects of Covid -19 and government initiatives in other rural areas. The study also explored the factors that affected ANC uptake during Covid-19, from the perspective of mothers and from the perspective of the ANC service delivery, for which solutions were identified

1.7 Significance of the Study

It is hoped that the study findings will be beneficial to the health service providers, health supplies, service delivery set up, and policy and regulatory makers as follows:

The study may act as a guiding reference to the public and health services providers in highlighting the effects of Covid-19 on ANC uptake, and the underlying reasons for poor uptake of ANC. In case they are preventable, the public and service providers may be able to prepare for them and

avert them in the future, in the event of the occurrence of a situation similar to the Covid-19 pandemic.

The study may also benefit the medical personnel to realize the importance of extending and providing antenatal care services to pregnant mothers during pandemics as they shall be able to recognize how to extend the ANC programs to the pregnant mothers in such times. The study findings may also benefit pregnant women to understand the importance of attending ANC and where to access them. This is expected to be achieved by using the study's conclusions and recommendations as a case of reference necessary in identifying the potential gaps.

The research findings to be gathered are expected to be useful to the policy makers in health to understand the effect of Covid -19 and underlying factors affecting uptake of antenatal care services by pregnant mothers in Bukedea District, Uganda like structural, individual and socio-demographical factors; thus it may therefore be upon this study that more forward policies could be designed and formulated.

The study findings are expected to be useful to the district health officers to base on in assessing the achievement of the objectives and goals of antenatal care services; and this may create a basis to adopt new guidelines, legislations and programs shall be drafted and adopted to promote the uptake of antenatal care services by pregnant mothers. Therefore, it is expected to be upon this research that more forward policies could be designed and formulated to attain the objective of uptake of antenatal care services by pregnant mothers together.

To serve as a source of reference to library users, students, scholars and researchers interested in the effect of Covid -19 and underlying factors affecting uptake of antenatal care services by pregnant mothers. It may also help other researchers in making more analysis and critic the problem in future so as to fill the gaps. This study creates and adds more knowledge to the already

existing body of knowledge for further researchers who might like to carry on further studies related to the current research and can now act as source of reference.

1.8 Conceptual Framework

The conceptual framework shows the factors arrayed under Covid-19 and their effect on ANC uptake forming the independent variable. These included the different influences of Covid- 19, the government initiatives, and perceived health care quality. On the other hand, antenatal care uptake during the Covid-19 pandemic was measured in terms of accessibility to the service, as well as the social support and aid that was provided during the pandemic as presented in Figure 1.1.

CONCEPTUAL FRAMEWORK

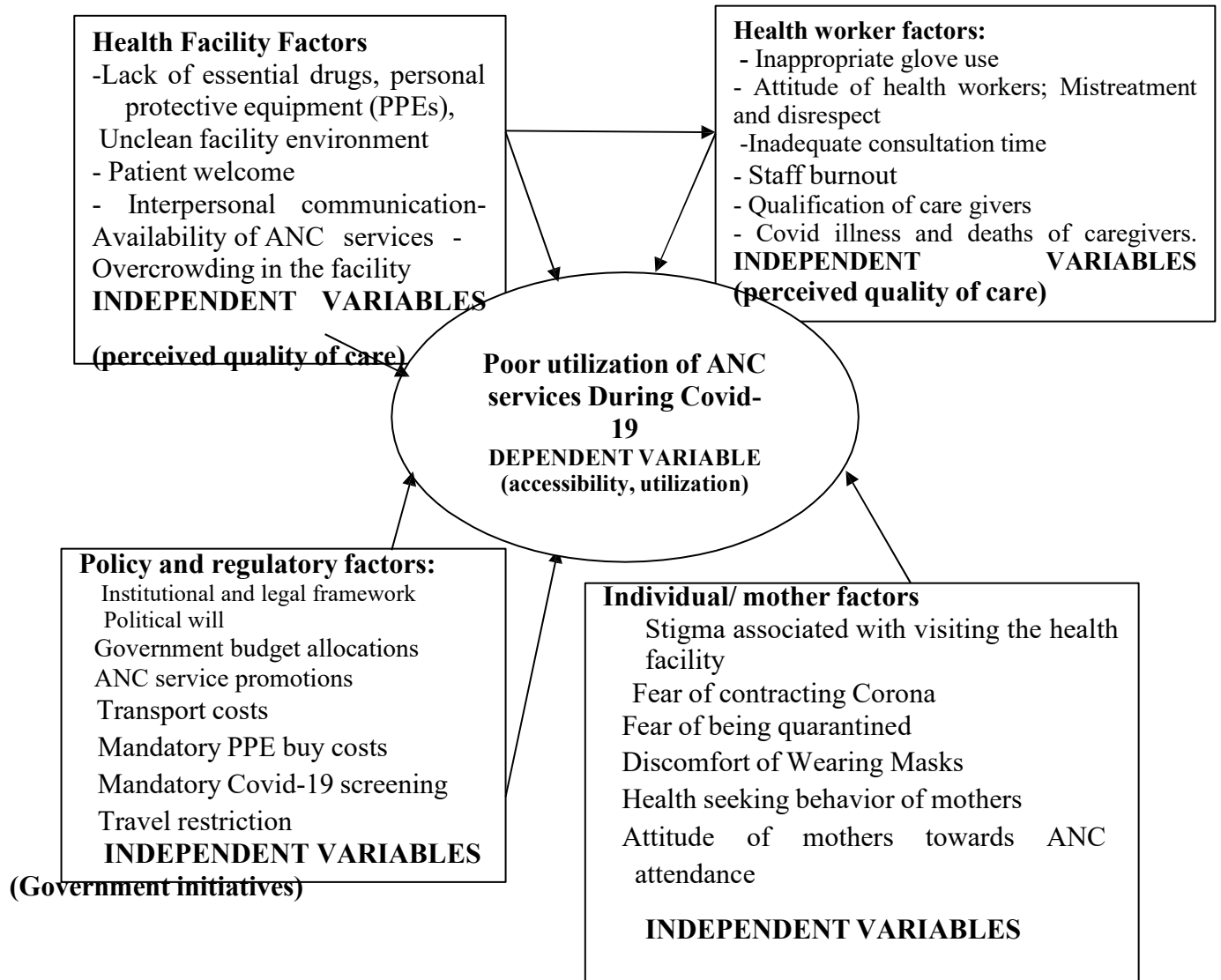


Figure 1: Conceptual Framework

Source: *Adopted from Shewangizaw et al., (2021) and modified by the researcher*

In the figure above, the Independent Variables such as the health facility factors, health worker factors, individual or mother factors, policy and regulatory factors have underlying factors which interconnect with the effects of Covid-19 (Dependent Variable) such as poor utilization of ANC and reduced uptake of ANC among pregnant mothers. All these are captured in the conceptual framework above.

CHAPTER TWO:

LITERATURE REVIEW

In this chapter the researcher reviews the relevant literature with regard to the effect of covid-19 and underlying factors which affected uptake of antenatal care services by pregnant mothers. Journals, textbooks, websites, seminar papers, official documents and unpublished thesis were reviewed. The literature involved opinions and views of other scholars and researchers that were related to the topic in study. Such information had been given basing on the research objectives set. It was guided under the following study themes: the influence of Covid-19 on uptake of ANC services among pregnant mothers during the Covid-19 pandemic, the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic, the perceived quality of health care on uptake of ANC services among pregnant women during the Covid-19 pandemic, and summary of literature review.

2.1 Influence of COVID-19 on Uptake of ANC Services among Pregnant Mothers during the COVID-19 Pandemic

This area entails findings, studies and reports on the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV.

2.1.1 Policy and Regulation Factors

According to Burt., Ouma., Lubyayi., Amone., Lorna., Nakabembe., Musa., Nakimuli., Mboizi., Kyohere., Asma & Kirsty (2021), all ANC services ceased in lockdown for several months in Uganda. During the Covid-19 lockdown, the number of antenatal attendances significantly decreased and remained below pre-Covid levels across the districts in Uganda. Covid -19 impacted global maternal, neonatal, antenatal and child health outcomes. It is stated that between 1 July 2019 and 31 December 2022, there were 14,401 antenatal clinic, 33,499 deliveries, 111,658 child services and 57, 174 sexual health attendances; but all antenatal and vaccination services ceased in

lockdown for months in Uganda. During the several months of lockdown, the number of antenatal attendances significantly decreased and remains below pre- Covid -19 levels (370 fewer/month). Attendances for prevention of mother-to-child transmission of HIV dropped. Besides, Kumari., Mehta., & Choudhary (2020) further argued out that the Ugandan response to Covid-19 negatively impacted antenatal care service accessibility, with an increase seen in pregnancy complications and fetal and infant outcomes, likely as a result of delayed care-seeking behavior. The findings and suggestions of the studies above are varied but were carried from urban communities in Uganda unlike this one focusing on Bukedea district; thus a justification for this study to close this gap.

Plotkin *et al.*, (2022) argued out that the outbreak of Covid-19 pandemic disrupted the access of antenatal care services. There was total lockdown where there was restricted movement of vehicles and people. People could not be allowed to move from one district to another to access antenatal health services. There was along bureaucracy to be allowed to move one district to another by getting recommendation letter from RDCs, and this could in most cases take long time, leading to rising health complications among pregnant mothers (Nakkazi, 2021). Although, Uganda has been less affected directly by Covid-19 infections, the indirect impacts are far-reaching and shall have future influences on population health. Antenatal attendances decreased dramatically as a result of Covid-19 lockdown, followed by increased numbers of low birth weight infants and neonatal deaths (Burt., *et al.*, 2021). Additional disruptions to family planning services including access to safe abortions and contraception result in an additional rise in maternal deaths, abortion related complications and a large unmet need for contraceptives. These impacts have been reported in some low resource settings globally, particularly with reduced antenatal attendances, linked to transportation restrictions, fear of transmission and lack of antenatal education. Indeed, outbreak of Covid-19 pandemic negatively affected uptake of antenatal health care services among pregnant

women worldwide and in developed countries, and one wonders whether it is the same case in Bukedea district.

Nakkazi (2021) asserted that travel restrictions included the cessation of all public transport and a ban on the use of private vehicles without explicit permission to travel in Uganda. More so, Bert et al., (2021) argued out that the proportion of pregnant women receiving HIV testing in ANC declined by a rate of 4% (96%CI 1.5% to 6.5% decline; $p=0.01$) during lockdown but increased to baseline at the end of restrictions. The median number of women attending prevention of mother- to-child transmission (PMTCT) of HIV services before lockdown was 113 (IQR 56-146) in Kawempe National Referral Hospital. Following the first month of lockdown, during which time the clinic closed, the number of attendances increased slowly with a jump of 85 more visits/month (95%CI 31.6 to 138.4; $p=0.009$) in the month that lockdown was lifted. It is thus not clear on the level of pregnant women uptake of antenatal care services in Bukedea Health Centre IV, a concern that this study tried to ascertain.

2.1.2 Perceived Quality of Care

Nakkazi (2021) asserts that during Covid-19, pregnant mothers feared getting in contact with unclean or contaminated environment which influenced the uptake of ANC services. Personal protective equipment (PPEs) especially gloves and masks were too expensive. The prices for PPEs were tripped during Covid-19 pandemic; and pregnant mothers who could not afford them were not allowed to enter the health facilities for ANC services. It was mandatory at the ANC facility for every individual to wear mask, yet some of the pregnant mothers could not afford them. On the other hand, Mbabazi., Yahaya & Awichi (2020) argued that overcrowding in the ANC facility also scared away some pregnant mothers. Overcrowding has a number of consequences, including getting exposure to Covid-19 easily, longer hospital stays and inadequate treatment; as a result, close contact may lead to the wide spread of pandemic to the already weak pregnant

mothers. However, above authors concentrated on descriptive survey design, unlike this study which is based on a cross-sectional survey design.

More so, Kirmani & Saleem (2021) asserts that attitude of the health workers influences the uptake of ANC services among pregnant mothers during the Covid-19 pandemic. Health workers were commonly rude, whining and yelling to pregnant mothers without PPEs. Behaviors especially mistreatment, disrespect and negative attitude of the health workers undermine a culture of safety within ANC health facility threatening overall wellbeing of health professionals as well as patient outcomes. On the other hand, Hailemariam., Agegnehu & Derese (2021) asserts that health worker burden exists, evidenced by the psychological and emotional consequences of negative behaviors for the healthcare workers, including depression, decreased self-esteem and passion for the profession in fear of getting exposed to Covid-19 pandemic, and feelings of powerlessness. Such negative behaviors in the healthcare work environment increase patient burden of care in the form of increased medication errors, delays in treatment, increased pregnant mother falls, explaining the need for the study in Bukedea Health Centre IV during Covid-19 pandemic.

Tumwesigye *et al.*, (2021) asserts that lack of healthcare staff, fear of infection, disruption of services due to Covid-19, lockdown orders restricting movement and the increased transport prices influenced pregnant women access to antenatal health care services. Besides, Islam & Tabassum (2021) argued out that the Covid-19 restrictions including quarantines for travelers and banning of group gatherings and non-essential travel limited pregnant women access to antenatal health services. For instance, at local level, non-essential visits to Kawempe National Referral Hospital were prohibited for a short time (from 23rd March 2020 to 21 April 2020), which included the closure of ANC and child immunization clinic. The proportion of pregnant women receiving iron supplementation, tetanus vaccination and blood pressure monitoring remained unchanged after the initial closure of services at lockdown, despite few pregnant women attending ANC. However, due

to stock outs of intermittent antimalarial prophylaxis and folic acid supplementation prior to lockdown, there was an increase in the proportion of pregnant women receiving medication during lockdown. The study took descriptive, analytical and normative approaches to explore the practices of a representative sample of health practitioners while identifying a number of distinctive intervention strategies that existing theoretical models only limit; however, this study was conducted in Bukedea Health Centre IV applied a mixed method.

2.1.3 Individual/Mother Factors

Mbabazi., Yahaya & Awichi (2020) further asserts that the number of women attending ANC visits in central Uganda during Covid-19 lockdown remained below 50%, although the majority of pregnant women in Kampala still deliver in hospital (94%). This implies that ANC and hospital delivery are not seen as a continuum of care in our setting and could account for the phenomenon of increased deliveries despite fewer ANC visits. Alternatively, fear of contracting Covid-19 in the community may have greatly influenced the decisions for pregnant women to access ANC in such hospital environment. The rise in neonatal deaths, low birth-weight babies and NICU admissions increased as a result of the lack of ANC during Covid-19 lockdown. Sudden sharp changes in low uptake of ANC and neonatal outcomes have been reported in South Africa, where an increase in neonatal mortality was linked to the disruption of services and diversion of resources due to Covid-19 necessities (Kirmani & Saleem, 2021). Conversely, there was an increase in malnutrition attendances likely due to the societal impacts of Covid-19 restrictions on ANC. The lack of therapeutic food available may have been affected by border closures and trade restrictions, in a similar manner to medication availability in ANC health facilities. The study took one method research design (quantitative); the use of questionnaires collected data. Unlike this study, data was analyzed by percentages, mean scores, standard deviation, and tables that used both quantitative and qualitative approaches.

Hailemariam., Agegnehu & Derese (2021) revealed that ANC services are a prime focus of the developed countries as well as a key pillar's in promoting maternal and child health. However, the onset of the Covid-19 pandemic and the national-wide lockdown in many developed and developing countries impacted women's access to institutional antenatal care services. There was stigma associated with visiting the health facility, fear of contracting Corona, as well as fear of being quarantined. During the first wave of the Covid-19 pandemic, pregnant women, most of whom belonged to poor and marginalized groups, were left with limited access to health centres. According to the Kirmani & Saleem (2021), the respondents from the study area of rural Jharkhand, Madhya Pradesh and Uttar in China extensively reported concerns stemming from the lockdown that influenced their decision to access ANC services. These included anxieties around meeting their families' daily needs due to a loss of livelihood (particularly food insecurity) as a result of Covid-19, inability to access healthcare, and a sense of mistrust in public health systems and functionaries. More so, in India, official guidance for pregnant women recommends a minimum of four ANC contacts during pregnancy, at specified intervals. However, during the Covid-19 pandemic, pregnant women were advised not to visits sites of ANC check-ups for several months (Chmielewska *et al.*, 2021). All these, coupled with the real threat to health posed by Covid-19, disrupted their plans for pregnancy and delivery, further compounding the risk to their health and well-being. Thus need for this study to ascertain the situation in Bukedea Health Centre IV.

Ayalew & Nigatu (2018) asserted that lockdowns in developing countries aggravated women's perinatal anxiety, fear of contracting Corona or being quarantined, discomfort of wearing masks, and they felt low confidence getting pregnant or giving birth during the Covid-19 pandemic. They were no longer able to avail of healthcare services as per the planned cadence of ANC check-ups, and often had to forego attending them as a result of lack of reliable means of transport, familial

pressure to self-isolate, low value perception of ANC in the eyes of key family members, fear of contracting virus, vulnerability to complications in pregnancy, and risk of transmitting Covid-19 to the fetus, if they contracted the illness. Due to the uncertainty around the wellbeing of their families, and the proliferation of unreliable sources of information, pregnant women were left anxious and impaired in their capacity to prepare for childbirth, which further exacerbated their distress. Besides, Muhwezi (2021) asserted that given the outcomes of the situation arising from the lockdown in developed and developing countries, Uganda inclusive in the first and second Covid-19 phase, both at the systemic level and at the personal level, it is understood that the decisions around accessing non Covid-19 health services were highly biased. This had a significant impact on the access and utilization of key services such as ANC. With regards to the effect of Covid-19 pandemic in question, the researcher developed a sense of concern in achieving knowledge on the extent to which the Covid-19 influence on uptake of ANC services among pregnant mothers during the Covid-19 pandemic in Bukedea Health Centre IV.

2.2.2 Influence of Government Initiatives on Uptake of ANC Services among Pregnant Mothers during the COVID-19 Pandemic

This area entails findings, studies and reports on the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid-19 pandemic in Bukedea Health Centre IV.

2.2.1 Policy and Regulation Factors

According to Kirmani & Saleem (2021), governments consider ANC as potentially valuable platforms for integrated delivery of additional health services for pregnant women-services that are vital to reduce the persistently high rates of maternal and neonatal mortality on low and middle income countries. ANC serve as an effective platform for a broad range of health interventions, including for the provision of services for conditions that increase the risk of complications during

pregnancy. Integrating ANC with malaria, HIV/AIDS, STIs, and TB services can also expand the reach of these programs to a broader population (Muhwezi, 2021). The WHO has identified integration of ANC with other health services, including PNC, as a key strategy for reducing missed opportunities for patient contact and for effectively and comprehensively addressing the health and social needs of pregnant women, thereby improving maternal health as per Millennium Development Goals. However, while there was considerable progress toward the Millennium Development Goals 4 (to reduce child mortality) and 5 (to improve maternal health), maternal and neonatal mortality from preventable pregnancy and birth related complications remain high particularly in low and middle income countries. In this sense, achieving sustainable development goals (SDGs) requires alleviating gender based inequalities as well as improving female partner participation in the antenatal health care system.

Additionally, Kirmani & Saleem (2021) asserted that integration of health system in form of establishing joint systems for organization, financing management, planning and evaluation of health programs at different levels of the health system (from health facilities to ministry of health level) to improve the efficiency and effectiveness of health systems. Integrated care has also been considered by WHO as ‘bringing together inputs, delivery, management and organizations of services related to diagnosis, treatment, care, rehabilitation and health promotion’ in order to improve services in relation to access, quality, user satisfaction and efficiency. The rationale for integrating health services is to improve user access to health services across the care continuum to meet users’ health needs over time, and to create positive synergies among investments in health programmes (Nakkazi, 2021). However, Townsend *et al.*, (2021) argued out that injudicious integration may also have harmful consequences for already constrained health systems. For instance, provision of multiple services during a single point of contact requires that health care providers be sufficiently well trained in all aspects of the services concerned to ensure high quality

care. But in this resource constrained systems training can take away health staff from frontline services. Furthermore, provision of multiple services could stretch the already limited capacity, thus leading to long waiting times and hindering access for pregnant women who have to travel far to reach health facilities.

The 2015 World Health Organization recommendation on maternal and newborn health promotion interventions included active involvement of couples during pregnancy, child birth and post-partum period as an effective intervention to improve ANC care as well as newborn health outcomes. However, male involvement is recommended provided only that women's autonomy in making their own decisions is respected. Hence, a careful engagement of male partners in the antenatal health care service in such communities may be an effective strategy to improve antenatal health service utilization and reduce maternal morbidity as well as mortality (Mazengiya, 2018). It is essential to assess women's current level of awareness and involvement in the antenatal health care system in order to plan an effective intervention strategy to improve their involvement. Indeed, health promotion is needed to empower pregnant women with essential information for meaningful involvement in antenatal care services. It is thus not clear where there are government initiatives on uptake of ANC services among pregnant mothers during the Covid-19 pandemic in Bukedea Health Centre IV, a concern that this study tries to ascertain.

Basudde (2018) asserted that the government of Uganda has encouraged, trained and equipped skilled birth attendants and traditional birth attendants (TBAs) to handle antenatal care services. One of the strategies for improvement in the survival and health of pregnant women and their newborn is to ensure deliveries are conducted by skilled birth attendants. Besides, Chmielewska *et al.*, (2021) noted that a study in rural local government area in Ogu State, Nigeria, identified that pregnant women preferred TBAs for various reasons which included: cheap easily accessible, cultural acceptable services and more compassionate care than orthodox health workers, and for

some it was the only maternity they know. In many countries, TBAs are an important source of social and cultural support to women during childbirth and due to economic constraints, and the difficulty in posting trained professionals to rural areas; many women continue to deliver with TBAs.

More to the above, Brown & Lumley (2018) asserted that government of India has several initiatives to provide financial and medical support to all pregnant women including to economically weaker sections during their pregnancy and delivery in government health facility. These include: Janani Suraksha Yojana, a demand promotion and conditional cash transfer scheme for promoting institutional delivery. Janani Shihu Suraksha Karyakaren entitles every pregnant woman to free delivery, including caesarean section, in public health institutions along with the provision of free transport, diagnostics, medicines, other consumables, diet and blood. More still, Limenih., Endale & Dachew (2016) noted that the government of India has taken various steps to ensure assured availability of all facilities to pregnant women near their homes, especially at the time of delivery in the remote areas of the country. However, this study was conducted in developed countries, unlike this research that was conducted in Uganda to ascertain the situation at the ground.

2.2.2 Perceived Quality of Care

Tweheyo., Konde-Lule., Tumwesigye & Sekandi (2020) noted that health promotion is needed to empower pregnant women with essential information for meaningful involvement in antenatal care services. Government initiatives through community programs, publicity and use of mass media platforms to extend information related ANC available services, accessibility and availability encourage pregnant women to seek for such services. Besides, Brown & Lumley (2018) added that the government has promoted ANC services accessibility through extending community outreach, mobilization, and mass media campaigns, including radio and television messages,

billboards, widespread educational materials and public events which greatly improve on pregnant women's involvement in antenatal health care. Public health interventions focused more on designing messages to diffuse existing socio-cultural perceptions and health care provider attitudes which influence pregnant women involvement in accessing antenatal health care services.

Byamugisha., Tumwine. Semiyaga & Tylleskar (2020) indicated that unavailability of ANC services offered to women at health units as another factor influencing uptake of ANC services among pregnant mothers during the Covid-19 pandemic in health facilities. Government have failed to provide essential drugs, and personal protective equipment (PPEs). The public ANC facility tends to be unclean to attract pregnant mothers. They further noted that Government health facilities lack required medical services specifically for pregnant women like family planning, abort services and fertility clinics due to inadequate medical equipment and staff to handle such delicate ANC health services. In line with the above, James., John & Angelina (2015) noted that in 2014, public and private health sectors were compared in health care for pregnant female out-patients in South-Central India. Some of the ANC facility tends to be congested or overcrowded. There is limited publicity, which undermine pregnant mothers' access to ANC information as well as accessibility to ANC services. It was found that pregnant women get better care in the private health sector. They felt that the quality of care was much better in the private sector both in terms of thoroughness of examination and communication between doctor and patient. With regards to the effect of government initiatives in question, the researcher developed a sense of concern in achieving knowledge on the extent to which the government initiatives influence on uptake of ANC services among pregnant mothers during the Covid-19 pandemic in Bukedea Health Centre IV.

2.2.3 Individual/Mother Factors

Kirmani & Saleem (2021) asserted that distance to health facilities is one of the major factors influencing pregnant women's health seeking behavior for ANC in government health facilities. One of the challenges facing women's health seeking behavior in Uganda is poor physical access to health units providing standard health services. However, according to the health sector strategic plan (HSSP2015-2019), it is noted that the physical access to primary health care services is at 72% of the population within 5km to the health facilities in most rural parts of Uganda. Furthermore, Atuhaire & Mugisha (2020) argued that the households that are 5kms and more from the nearest health facility are 27.8% meaning that accessibility to health facilities is really a problem. Besides, Burt *et al.*, (2021) argued that in Uganda, the health infrastructure has been increased to match the population expansion and access to at least 72% of the population living within 5km of health facilities, but still pregnant women seek ANC health services beyond 5Km, which undermine their health seeking behavior from the government health facilities.

More so, Hailemariam., Agegnehu & Derese (2021) asserted that governments in developing countries, Uganda inclusive have emphasized free education for all. There is equality in accessing education through Universal Primary Education (UPE) and Universal Secondary Education (USE), and these have equipped many school going children with knowledge and information concerning ANC. Pregnant mothers' level of education influence the use of ANC for which pregnant women with primary educational level were more likely to attend ANC than women who are unable to read and write. In other words, James., John & Angelina (2015) asserted that women's education and attitude, knowledge and awareness play important roles in female access and involvement in reproductive health. There is documented evidence on factors that influence pregnant women's participation in antenatal care services at individual, family, community and health facility levels (Kirmani & Saleem, 2021). It is noted that gender inequalities play a major role in maternal health

as well access to ANC. These inequalities are reflected in communities in regard to segregated gender roles, as well as at health facilities in the feminization of programs. The government and its agencies have initiated the programs targeting equal rights in education, legal access and employment status. Occupation of men tends to influence their involvement in escorting their wives to seek antenatal care services. Those women who are always busy and work for long hours tend to have less free hours and they usually leave their workplace when exhausted, not to get involved in any other extra work/duty, up-taking ANC from nearby health facility inclusive (Basudde, 2018). Thus need for the study to ascertain the situation in Bukedea Health Centre IV.

2.2.3 Effect of Perceived Quality of Health Care on Uptake of ANC Services among Pregnant Women during the Covid-19 Pandemic

This area entails findings, studies and reports on the effect of perceived quality of health care on uptake of ANC services among pregnant women during the Covid-19 pandemic in Bukedea Health Centre IV.

2.1.1 Policy and Regulation Factors

According to Basudde (2018), because high-quality ANC care has a big impact on pregnant women uptake to ANC health services. When pregnant women are treated by top doctors and get care at great facilities, they benefit from; better health outcomes such as faster recovery times, lower risk of ANC complications and mortality, and improved long-term health. More so, Sinha., Bennett & Taylor-Robinson (2020) argued out that existence of clinic-based interventions, including introduction or scale up of female reproductive health services, individual or couples counseling, and provider education about pregnant women's reproductive needs has an influence of uptake of ANC services by pregnant women. The existence of such programs on effective implementation of pregnant women involvement in reproductive health initiatives has greatly addressed the barriers and challenges to pregnant women's involvement in ANC health initiatives.

More still, James., John & Angelina (2015) noted that lack of women departments at the health facilities as a factor influencing pregnant women's uptake to ANC health seeking behaviour. In most government health facilities for instance, pregnant women lack privacy as they don't have private sections there. Pregnant women fear of going there to access some of the medical services like safe abortion, family planning services as well as fertility services in fear of being criticized by the female counterparts. More so, Mazengiya (2018) argued that culture and other traditional practices influence uptake of ANC by pregnant women. Most illiterate pregnant women prefer to seek ANC health care outside the government health facilities because they cater for this. Indeed, ensuring adequate ANC services to all mothers will reduce their MMR and mobility rates. The struggle is not to prevent the ANC complications only but also overall impact on the health status of the families, communities and the country at large. The poor ANC health services in Uganda could also be attributed to ineffective communication between couples. Married men or women predominantly use indirect forms of communication with their spouses (Plotkin *et al.*, 2022).

2.1.2 Perceived Quality of Care

According to Atuhaire & Mugisha (2020), several factors influence Ugandan pregnant women ANC seeking behavior which included: perceived high cost of ANC services (conducting a delivery and treatment), and perceived inadequacy of services provided by the formal health system. Kirmani & Saleem (2021) also noted that payment for health care provided in health facilities especially for the poor is one of the hindering factors that prevent pregnant women from seeking ANC attention. Even where exemptions exist, there are a lot of informal payments in form of cash or in kind to health workers. These payments are sought by some health workers who claim to earn minor salaries and intend to survive on these payments, which in turn discourage pregnant women to seek ANC health services from such facilities.

Tumwesigye *et al.*, (2021) indicated that pregnant women in Sub-Saharan Africa complained of prolonged stay during seeking for ANC health services from the government health facilities disrupting daily activities. There was mention of the distance between provider and user; it was also observed that pregnant women complained of harsh treatment by hospital staff as well as unnecessary medical interventions. Besides, Sinha., Bennett & Taylor-Robinson (2020) conducted a study in Sri-lanka and looked at the treatment seeking behavior of two poor urban communities for eight months that was the private and public sectors were considered for ANC health care. It was noted that there was unsatisfactory interpersonal care in the public sector necessitating the pregnant women to seek services of the private providers who at times would be expensive but perceived to be offering superior services with better customer care. It is thus not clear whether attitude of health practitioners influence women's ANC health seeking behavior in health facilities in Bukedea district, a concern that this study tried to ascertain.

2.1.3 Individual/Mother Factors.

Riley *et al.*, (2020) further argued that distance to the health facility as another factor influencing pregnant women uptake of ANC services. Besides, Islam & Tabassum (2021) noted that place of residence is also a well-recognized factor that can influence pregnant women use and uptake of ANC health care service. Living in urban areas increases the probability of pregnant women to access health services from public health facilities. A systematic review of inequalities in the access and use of ANC health care in developing countries stated that urban women were more likely to seek ANC health services from private health facilities than rural men. Similarly, a study in Rwanda suggested that the access of ANC health services by pregnant women from public health facilities is higher among urban women compared to rural women (Hailemariam., Agegnehu & Derese, 2021). Although, traditionally women have not been involved in antenatal health care of their partners, the shortcomings in the health care service livery system such as poor

attitudes of healthcare providers and ineffective programs have equally discouraged their participation. An earlier reported showed that 42% of pregnant women in Dodoma Region reported that lack of money for transport was a barrier for timely access of ANC health care services (Mazengiya, 2018). The delay in reaching a health care facility may be associated with a lack of money for transport as well as other health care related costs in which pregnant women depend on a male partner.

Townsend *et al.*, (2021) stated that attitude of health workers also contributes to pregnant women uptake of ANC services in health facility. The perception and attitudes of women to ANC health services in health facilities provided, strongly determine whether these pregnant women seek them or not. A baseline research conducted by Skilled Care Initiative (2020) in Tamil Nadu-Bangladeshi about reproductive health services revealed that a number of community members raised concerns about the interpersonal communication skills of health care providers and the way that patients (pregnant women) were treated at health centers. The skilled attendants were described as physically and emotionally abusive; neglectful at best. The nurses were described as cruel, impatient, unsympathetic and insulting. The study therefore noted that, provider attitudes and behavior towards clients heavily weigh on pregnant women's decision to seek ANC health services from private practitioners who at least treat patient with humanity and care. With regards to perceived quality of health care in question, the researcher developed a sense of concern in achieving knowledge on the extent to which the perceived quality of health care influence on uptake of ANC services among pregnant mothers during the Covid-19 pandemic in Bukedea Health Centre IV.

2.3 Summary of Literature Review

This chapter presents the review of literature relating to the influence of Covid-19 and underlying factors affecting uptake of antenatal care services by pregnant mothers. The researcher presented

Evolutionary Theory and Motivation-Facilitation Theories that inform the area of study. The study focused on: influence of Covid-19, government initiatives and perceived quality of health care. The overall utilization of ANC health service in Uganda is low. Mothers' education, monthly income, last pregnancy birth outcome, wantedness of the pregnancy and place of delivery were significantly associated with ANC service utilization (Byamugisha., Tumwine. Semiyaga & Tylleskar, 2020). There is still work to be done on the influence of pregnant women uptake of ANC health care services in Bukedea Health Centre IV, Bukedea district. It also used to form a basis upon which the study findings were compared in order to ensure validity and reliability of the research findings. More still, the above scholars suggest direct solutions to the identified factors influencing pregnant women's ANC health seeking behavior in health facilities which is another gap and this work provided some recommendations.

CHAPTER THREE

METHODOLOGY

This chapter presents the methodology of research, which covers research design, area of the study, selection criteria, information sources, population and sampling techniques, variables and indicators, measurements levels, procedure for data collection, methods of data collection, data collection instruments, quality/error control, data processing, analysis and interpretation; and ethical consideration and approvals; dissemination of findings, and methodological constraints.

3.1 Research Design

The study used cross sectional analytical research design with qualitative and quantitative methods. This was used because it helped to assess in depth the sample of selected participants accessing antenatal care from Bukedea Health Center IV. Analytical research design according to Kothari (2013) as cited in Tumuhimbise (2017) is the type of research design used out of fact and analysed to make critical evaluation out of it.

This type of design was used because it enabled the researcher to collect data at once from only the sample population to generalize the study findings on the entire target population within a shorter time and at a lower cost. The analytical survey was handy in this study since it accommodates a variety of data collection methods that facilitates a quantitative understanding of the study phenomenon (Nyenje & Nkata, 2016). It therefore enabled the application of both qualitative and quantitative methods of data collection and analysis. The quantitative data was collected through the use of questionnaires; whereas the qualitative used interview guide to cover areas where some variables cannot be easily quantified. This design was selected because different categories of respondents were studied at one point in time.

3.2 Area of the Study

The study was carried out in Bukedea Health Centre IV, which is an Anglican Church founded Health facility located in Corner ward, Corner Cell, Bukedea Town Council in the western outskirts of Bukedea District. It is the only health Centre IV in the district and owned by government, serving a total population of about 220,000 people (Bukedea LG, 2022). Bukedea Health Centre IV intentionally was selected as a study site by considering the health status of women in the Town Council, and lack of previous researches related to antenatal health care services.

3.3 Selection Criteria

This included inclusion and exclusion criteria.

3.3.1 Inclusion Criteria

Pregnant women attending antenatal health care services at the study site that consented to the study.

The pregnant women in reproductive age group(15-45years) at the study area were included.

Pregnant women who accessed ANC services during covid 19 period and were pregnant during time of study

3.3.2 Exclusion Criteria

Pregnant women who were too sick to participate in the study, and those pregnant women who did not consent to participate in this study. Those who are below 15 or above 60 years shall not be included in this study. Pregnant mothers who did not seek services during covid 19 period.

3.4 Sources of Information

The researcher used both primary and secondary information sources. Sekaran (2003) stated that, “primary data is data obtained from the field by the researcher on the variables of interest for the specific purpose of study”. Primary sources of information are those which were original in nature

and were got for the first time. Data was collected by the use of questionnaires and interview guide. Questionnaires were designed using likert scale. They were distributed to target participants

in order to get their views about the study variables. On the other hand, Kothari (2013) point that, “secondary data is the data which was collected and analyzed by someone else”. A range of documents were gathered for analysis including; government health policy documents, ANC attendance records, health reports including health management information system (HMIS) reporting tools; textbooks, journals, magazines, research reports and internet sources which the researcher made best use of it.

3.5 Population and Sampling Techniques

3.5.1 Population

The population of study included pregnant women accessing ANC and ANC health practitioners at Bukedea Health Center IV, and district health stakeholders (including, District Health Officer, Chief Administrative Officer, Chairperson LC V, District Health Inspectors and RDC); in accordance with the Bukedea LG (2022). District health stakeholders were interviewed to get variety of views to make the study findings more reliable and comprehensive for the benefit of this society. On the other hand, ANC health practitioners were selected in order to obtain reliable and valid information required for this study. Pregnant women accessing ANC were considered to give the researcher valuable views about the study problem at hand which made the findings more credible; and probably give the best solutions to the key findings. These were contacted for the information required for success of the study. The choice was made in order to enable the researcher get adequate representation of the whole population.

3.5.2 Sample Size Determination

The ever-increasing need for a representative statistical sample in empirical research has created the demand for an effective method of determining sample size. According to Katamba & Nsubuga (2014) sample size is the portion or subset of the total population. To address the existing gap, the study sample was selected following the recommendations of Morgan and Krejcie (1970) table in

determining sample size to represent a cross section of people in this study. In this regard, out of 210 target population, 136 sample size were considered (Morgan and Krejcie Table 2 below). These included; 120 pregnant women accessing ANC, ten (10) ANC health practitioners at Bukedea Health Center IV, and six (6) district health stakeholders (including, 1 District Health Officer, 1 Chief Administrative Officer, 1 Chairperson LC V, 2 District Health Inspectors and 1 RDC). This enabled the researcher to get a variety of views and unbiased response which made the study a reality. Such participants helped the researcher to get variety of views so as to make the study findings more reliable and comprehensive for the benefit of this society.

Table 1: Sample Size and Selection

Category of Respondents	Target population	Sample size	Sample Technique
Pregnant women accessing ANC	192	120	Simple random sampling
District health stakeholders	6	6	Purposive sampling
ANC health practitioners at Bukedea Health Center IV	12	10	Purposive sampling
Total	210	136	

Source: Self Constructed Basing on Krejcie & Morgan (1970) table

Table 2: Sample Size Determination Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1300	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1400	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2300	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3300	346
85	70	440	205	4000	351
90	73	460	210	4300	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note — *N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.5.3 Sampling Procedures

The study was based on systematic sampling key informants. Health practitioners and district health stakeholders were purposively selected for this study. These officials were interviewed from their place of work, and they were selected and used in order to obtain reliable and valid information. Such sampling technique was used because it was quick and helped the researcher to collect the first-hand information. The researcher used systematic sampling when they want to access a particular subset of people, as all participants of a study are selected because they fit a particular profile. Purposive sampling is a non-random sampling technique where respondents were selected because of some characteristic.

Purposive sampling is popular in qualitative research, and those respondents were chosen purposively and interviewed to provide qualitative data.

On the other hand, pregnant women accessing ANC health services were selected by proportionate representation using the systematic sampling method to ensure that all of them were equally represented without bias. Systematic sampling technique was used to select the pregnant women to avoid bias whereby when the researcher visits the HC VI; she requested for an attendance list of all the pregnant women seeking ANC services and selected the first mother on the list, skipped the second, selected the third and so on. In statistics, a systematic sampling is selection of sample by choosing every n th member of population after random starting point. Each individual was chosen starting random point and fixed interval. This was done by first determining the population size(N) and desired sample size(n) then calculated the sampling interval 'K'. Divided the population size(N) by the desired sample(n). chose a random starting point which was number one. Continuously selected random number after 1, selecting every K th member from the population.

3.6 Measurement Levels

There are four types of measurement levels namely, ordinal, nominal, ratio and interval. The ordinal scale refers to ranking of the measure in order of importance. Nominal scale measures only terms of names or designation of discrete units or categories (Kothari, 2013). Ordinal scale measures in terms of such value as more or less or larger or smaller but without specifying the size of the intervals. Interval scale measures in terms of equal intervals or degrees of different, but with an arbitrary established zero point from one item to another. Ratio scales measures in terms of equal intervals and an absolute zero point. Category coding, open ended questions and a Likert

scale was used when responding to a questionnaire. This helped to categorize, understand perception and individual expression. A Likert scale helped respondents specify their level of agreement or disagreement to a statement. Here, they were asked to indicate their strength of feeling about a particular issue on a 5-1 rating scale. In this five-point scale which included the following kinds of answers were used; 5 = Strongly Agree, 4= Agree 3=Undecided/neutral, 2=Disagree and 1= Strongly Disagree, the respondents were also asked open ended questions in order to understand their views about a concern. The measurement levels were considered multi- variable levels. Multivariable analysis (MVA) was based on the statistical principle of multivariable statistics, which was involved observation and analysis of more than one statistical outcome variable in the study.

3.7 Data Collection Methods

The following data collection methods were of great importance in obtaining data from the field of study. They comprised of the following.

3.7.1 Questionnaire Method

Questionnaire provides the most speedy and simple technique of gathering data about groups of individuals scattered in a wide and extended field. In this method, a questionnaire form is sent usually by post to the persons concerned, with a request to answer the questions and return the questionnaire. Fundamentally, the questionnaire is a set of stimuli to which illiterate people are exposed in order to observe their verbal behavior under these stimuli.

3.7.2 Interviews

Interviewing is a method of collecting data in which the selected participants were asked questions in order to obtain information on issue(s) of interest and can take a structured, or unstructured

(open ended) form (Kakooza, 2002). Structured interviews are those which were conducted when it's known at the outset what information was needed and of a list of predetermined questions asked of everybody in the same manner with the aid of a formal interview schedule.

3.8 Data Collection Tools

The study was guided by the following research instruments: -

3.8.1 The Questionnaire

The questionnaire tools were designed and used to collect data from pregnant women so as to ensure confidentiality. The design constituted closed-ended questions covering 5 items on the respondent's background in Section A, 10 items on objective one for Section B, 10 items for objective two in section C, and 10 items on objective three in section D. All items on section: B, C, and D, were measured on a 5- Liker scale stating: strongly agree (5), Agree (4), Not sure (3), Disagree (2), strongly disagree (1). The instrument for this study was a like scale questionnaire. The questionnaire was initially pre-tested among few participants who ensured correction of ambiguous and inconsistent questions before it was administered for the actual data collection. The questionnaires were used to collect quantitative data on the effect of covid-19 and factors affecting uptake of antenatal care services by pregnant mothers in Bukedea Health Center IV. The questionnaires were structured following the pertinent study objectives and thus, they had sections with headings that reflect the study objectives which provided quantitative data. Questionnaire gave respondents' freedom to elicit some information in details, due to the open- ended nature of some of the items it consisted of. These were used because they permit anonymity that results were more in honest responses and they were the best instruments for quantitative response. The questionnaires were used because they permit anonymity that results in more honest responses and they were the best instruments for quantitative research.

3.8.2 The Interview Guide

ANC health practitioners at Bukedea Health Center IV, and district health stakeholders were interviewed. An interview guide made it possible to get required data to meet the study objectives. It therefore provided in-depths data that was not got using questionnaire and was conducted with the sampled health professionals and by use of oral structured questions in order to provide a more probing insight to the study variables. Interviews helped the researcher to get first hand data since the respondents were answering for themselves compared to the questionnaire method. It also involved meeting respondents face-to-face and collecting information from the selected respondents. The interview method is preferred because it was more natural and qualitative, thus (Amin, 2005).

3.9 Procedure for Data Collection

Prior approval for this study, the researcher first got clearance from Faculty of Nursing and Public Health. Such a letter of permission was obtained in order for the researcher to carry out the study. Participation was voluntary and participants were allowed to withdraw from the research at any stage if they wish to, without having to give a reason. In addition, the purpose and methods for the study was well explained to the potential participants, who provided consent prior to participating. Additionally, this letter was always handed over to the head of Bukedea Health Center IV and individuals (respondents) who were visited for this study to allow the researcher access their staff and pregnant women for interviewing. Ethically, the researcher ensured that the principle of confidentiality throughout the research was preserved given the fact that the topic being handled was very sensitive. The researcher administered the questionnaires to pregnant women, interview health professionals and district health officials. This data was collected in the year 2023 using questionnaires, and oral interview guides.

The researcher also assured respondents that the study was strictly academic and that utmost confidentiality was observed. The data used in this study was anonymously coded and cannot therefore be traced back to individual respondents.

3.10 Quality/Error Control

The study was guided by the validity and reliability of instruments: -

3.10.1 Validity of Instruments

The validity of the questionnaires was determined by pre-testing the instruments. Pretesting was done by administering to respondents within the study population but outside the sample. Questionnaires were also scrutinized question by question and those deemed irrelevant was dropped in the real data collection tool. Results from the field and opinion of the researcher helped to identify gaps and made modifications to the instruments. To ensure validity of the mentioned instrument, the researcher ensured that questions or items in it conform to the study's objectives. Pre-testing helped to estimate the time it took to fill the questionnaires, relevancy of the questions, and accuracy of the questions in measuring the subject under study.

$$CVI = \frac{\text{No.Item}}{\text{Total No. Item}}$$

Total No. Item

Where by' CVI= Content Validity Index

The researcher first enumerated the number of items considered relevant for the study and divided them by the number of items in the instruments. Ten questionnaires were pilot-tested to the participants that did not participate in the study. Each questionnaire had 35 items. Hence;

$$\text{Total items} = 40 \times 20 = 800$$

Invalid items = 75

Relevant items = $800 - 75 = 725$

CVI = $725/800 = 0.91$

The instrument was said to be valid since the CVI was 0.91 which was far above 0.7 the recommended value for validity (Townsend *et al.*, 2021); this implied that the questionnaire is valid for data collection. Results from the field helped to identify gaps and made modifications to the instrument where it was necessary.

Similarly, the interview items were constructed such that they were related to the questions in order to ensure that the research questions were well covered. The validity of the interview guide was determined by pre-testing this tool, which helped to estimate the time it took to complete conducting the interviews, relevancy of the set questions in measuring the subject under research.

3.10.2 Reliability of Instrument

According to Stephanie (2016) defined reliability as: the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study could be reproduced under a similar methodology, then the research instrument was reliable. To test the reliability of the instruments, the researcher used the alternate-form reliability test by administering two similar instruments. The test was carried out on five key players especially pregnant women who were not part of the sample population, and did not change on the questions as per the comments. Before real collection of data, the instruments were tested on 10 respondents from at least each category of respondents to determine their reliability and these respondents were not among the interviewers. The CRONBACH alpha was used: When

the reliability co-efficient should be equal, equivalent or above to 0.7, then the researcher used the instruments. The test for reliability was conducted in a pilot run among Bukedea Health Center IV.

After pilot testing the research tool, reliability of the tool, and on multi-item variables were tested using the Cronbach's Alpha Method provided by Statistical Package for the Social Scientists, and this was conducted among 10 respondents.

Table 3 : Reliability indices for the questionnaire

Variable	Number of items	Cronbach Alpha Coefficient
Covid -19 Pandemic	10	0.78
Government initiatives	10	0.82
Perceived quality of health care	08	0.89

The Cronbach's alpha coefficients as indicated in Table 3 are above 0.70, the recommended reliability value (Amin, 2005). The results implied that the questionnaire is suitable for data collection.

On the other hand, the researcher ensured reliability of interview guide by ensuring consistent of selection method, that is, the five pilot study candidates were interviewed twice using the same questions to rate the candidate's similarity and get the reliable interview. Therefore, the researcher pre-tested and retested the instruments on a small number of key respondents in an interval of two days. Before real collection of data, the instruments were tested on five respondents to determine their reliability and these respondents were not among the respondents (interviewers).

3.11 Data Processing, Analysis and Interpretation

3.11.1 Data Presentation

The presentation of the data was made using the information given by respondents. Raw data was processed into meaningful information. The process involved editing, coding tabulation and

analysis with a view of checking the completeness and accuracy of the information. As indicated above in research design, data was collected, processed, analyzed quantitatively and qualitatively.

3.11.2 Qualitative Data Analysis

Health professionals and district health team provided qualitative data. At the end of each day, field notes were transcribed. Qualitative data was analyzed by content after transcribing and developing themes. Thematic content analysis was used to analysis this data where key findings were transformed into themes for easy analysis and presentation of data. Additionally, narrative reasoning was also used to interpret the findings and was logically argued out. The respondents' views were quoted verbatim to give their actual feeling about the issues that was raised. This therefore, given an in-depth insight of the problem under study.

3.11.3 Quantitative Data Analysis

Quantitative data was provided by pregnant women. Data was analyzed using SPSS to get variable Mean and Standard deviation which were drawn to ensure clear and easy presentation of research findings. Quantitative data was analyzed scientifically and was correlated using the Pearson product moment correlation. It was Pearson Correlation Coefficient that is appropriate for testing such relationships. The statistical analyses were manipulated by SPSS. The quantitative records involved records from the questionnaires only. The raw statistics were obtained from questionnaires used cleaned, sorted and coded. The coded facts were entered into the Computer, checked and statistically analyzed the use of the statistical bundle for social scientists (SPSS) software package deal to generate descriptive and inferential records. Descriptive evaluation was used to be utilized to describe the major variable and associated indicator objects associated to the study objectives.

3.12 Ethical Consideration and Approval

Ethical clearance was sought from faculty of Nursing and public health, Uganda Christian University to conduct research. Formal letter of cooperation was written for Bukedea Health Center IV and later permission was obtained. Written informed consent was obtained from each study subjects, each respondent was informed about the object of the study that it improved on Antenatal and postnatal care. A written informed consent form that elaborates on the purpose of the study was filled by all those who participated in the study. Sometimes, verbal consent was also obtained from the participants to enhance confidentiality of the research which increased their participation. The participants were also informed that participation in the study was voluntary and they had a right to accept or decline to participate or withdraw from the study anytime. Indeed, any man whose was not willing to participate in the study was not forced to participate in the same said study.

Additionally, respondents were also informed that data obtained from them were kept confidential by using codes instead of any personal identifiers and was meant only for the purpose of the study. In trying to protect participants' confidentiality, participants were given written consent before participating. Confidentiality and anonymity were emphasized at every stage. Data identifying individual subjects were restricted to those who were involved in the study. Participants were adequately informed about the procedures of the data collection and the survey remains anonymous (no provision for identifying the participant on the survey questionnaire to exist). Names and other identifying information from subjects were obtained for quality assurances purposes only and no individual was identified by any study report.

3.13 Dissemination of Findings

The study report was submitted to:

School of Medicine

Ham Mukasa Library, Uganda Christian University

Bukedea Health Center IV

District Health office

3.14 Methodological Constraints

The researcher met several impasses during the conduct of the study. These included:

The researcher met un-co-operative respondents who were unwilling to give information. This was solved by the researcher through showing and giving them a copy of an introductory letter and promising them that the information given was confidential.

It was also expected that the time for conducting the research was lengthy due to other official duties. Therefore, the researcher tried to balance the two. The time frame allocated to the study did not enhance wider coverage as the researcher had to combine other academic activities, work schedule and examinations with the study. This was solved by the researcher through giving more time to the research and trying to balance all the work as per planned work schedule.

The researcher was quite frustrated by the bureaucratic tendencies involved in granting one a chance to carry out a study in Bukedea HC IV. The researcher experienced inaccurate answers by using questionnaires. It was believed that some respondents may just quickly tick the given options without thorough reading and analyzing what the question is all about in order to satisfy the researcher due to the fact she was a residence of that area. The control measure for this was use of introductory letter from the university that required honesty and confidentiality in carrying out this research.

CHAPTER FOUR:

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

The study established the effect of the Covid -19 pandemic and factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District. This chapter highlights the data presentations and analysis as well as interpretation of research findings. The presentations are done according to the research objectives. Participants interviewed were pregnant women accessing ANC, ANC health practitioners at Bukedea Health Center IV and district health stakeholders (including, District Health Officer, Chief Administrative Officer, Chairperson LC V, District Health Inspectors and RDC). Research findings have been presented in form of tables; narratives have been provided for each of the tables. Interview results were further obtained to explain qualitatively ascertaining Covid -19 pandemic and factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV in form of verbatim quotations and narrative statements as per participants' views in regard to each research objective and these supplemented results from the questionnaire.

The study also presented inferential statistics in form of correlations and regressions testing the hypothesis; and this clearly shows the nature of relationship between study variables and the magnitude of relationship the independent variables has on dependent variable. The chapter further presents the response rate of the respondents, which shows the actual number of participants that properly responded to the research questions. The chapter lastly presents the information on respondents' background which indicates the common demographic respondents' characteristics that participated in the research.

4.1 Response Rate of Respondents

The above sub-section presents the summary of the statistics for the respondents' response rates. Out of a total of 210 targeted study respondents, 136 were reached and positively responded by participating in the study, giving a 64.7% response rate. Non-achievement of 43.3% was due to targeted participants being busy and out of station during the study period despite several attempts to made to reach them. This response rate is above the 60-70% response rate as recommended by the Townsend *et al.*, (2021) for a research study to be considered as one with satisfactory results. Further details are presented in Table 3 below.

Table 2: Number of respondents participated in this research study

Category(s)	Targeted participants	No. actually involved.
Questionnaire.		
Pregnant women accessing ANC	192	120
Interviews		
ANC health practitioners	12	10
District health stakeholders	6	6
TOTAL.	210	136

4.2 Background Information of the Participants

The background information of the participants included; gender (sex), age of the respondents, highest education level and religious affiliation. Profiles of the respondents who participated in this research are clearly shown in the table 4 below:

Table 3: Background Information of the Participants

Demographic information		
Gender	Freq. (f)	Percent (%)
Female	128	100
Total.	136	100.0
Age of respondents (years)	Freq. (f)	Percent (%)
15 – 19	35	25.7
20-24	42	30.9
25 and above	59	43.4
Total.	136	100.0
Respondents level of education	Freq. (f)	Percent (%)
Secondary to lower	116	85.3
Holders of Masters' degree	2	1.5
Holders of Bachelors' degree	6	4.4
Holders of Diploma	12	8.8
Total.	136	100.0

Religious affiliation	Freq. (f)	Percent (%)
Catholics	38	27.9
Protestant	51	37.5
Born Again	26	19.1
Seventh Day Adventist	08	5.9
Muslim	13	9.6
Total.	136	100.0

From table 4, study involved 136 respondents and results show that out of them, 128 respondents (94.2%) were females and 8 respondents (5.8%) were males. This implies that female participants were more during the research. Female participants were many since the researcher targeted the pregnant women accessing ANC. However, difference in numbers did not affect participation of both female and male participants in the research.

As shown in table 5, 35 respondents (25.7%) were between 15-19 years, 42 respondents (30.9%) were between 20-24 years, while 59 respondents (43.4%) were 25 years and above. This implies that those participants in the age group of 25 years and above made the majority during the research carried out in Bukedea Health Center IV.

As shown in table 5, respondents varied in terms of education level. 2 respondents (1.5%) were at Masters' degree level; while 6 respondents (4.4%) were at bachelor's level. More so, respondents equivalent to 116(85.3%) mentioned others (primary to secondary level) and only 12 respondents (8.8%) were holders of diploma. These results indicate that the majority of participants were at primary and secondary level, and these categories of participants had less knowledge on ANC as their responses were inappropriate and some of them less corresponded to the questions asked.

From the above, majority of the participants 38(27.9%) indicated they were Catholics, followed by 51(37.5%) were protestants, and then, born again were represented by 26(19.1%) of the respondents. Also, 08(5.9%) of the participants belongs to Seventh day Adventist, while, 13(9.6%) were Muslim. The implication of these is that, all the participants are familiar with several ANC services by pregnant mothers.

4.3 Descriptive Results

In this section, the descriptive statistics used were frequencies and percentages, while the inferential statistics used were Pearson correlation, coefficient of determination and hypothesis testing.

4.3.1 Influence of Covid -19 on Uptake of ANC Services among Pregnant Mothers during the Covid -19 Pandemic

The first objective of the study was to examine the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. The structure was measured using different study variables and five-point Likert scale whose results are shown in table 5.

Table 4 : The influence of Covid -19 on Uptake of ANC Services among Pregnant Mothers during the Covid -19 Pandemic

Statement	Response	Extent of (dis)agreement		Mean	Std. Devt
		(f)	(%)		
Fear of contracting COVID-19 influences my decisions to access ANC in such hospital environment.	Strongly Agree	111	92.5	4.15	0.867
	Agree	6	5		
	Neutral	1	0.8		
	Disagree	2	1.7		
	Strongly Disagree	0	0.0		
	Total	120	100.0		
Travel restrictions limited pregnant women uptake to ANC services in this health facility	Strongly Agree	108	90	4.33	0.805
	Agree	8	6.6		
	Neutral	2	1.7		
	Disagree	2	1.7		
	Strongly Disagree	0	0.0		
	Total	120	100.0		
The increased transport prices has an influence on pregnant women access to antenatal health care services	Strongly Agree	105	87.5	4.06	0.785
	Agree	10	8.3		
	Neutral	3	2.5		
	Disagree	2	1.7		
	Strongly Disagree	0	0.0		

	Total	120	100.0		
Closure of ANC clinic limited our access and uptake of ANC services	Strongly Agree	103	85.8	3.90	0.995
	Agree	11	9.2		
	Neutral	1	0.8		
	Disagree	5	4.2		
	Strongly Disagree	0	0.0		
	Total	120	100.0		
Banning of group gatherings limited pregnant women access to antenatal health information	Strongly Agree	101	84.2	4.08	0.868
	Agree	12	10		
	Neutral	7	5.8		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100.0		
Lack of antenatal education limited our access and uptake of ANC services	Strongly Agree	97	80.8	4.06	0.847
	Agree	13	10.8		
	Neutral	4	3.4		
	Disagree	6	5		
	Strongly Disagree	0	0		
	Total	120	100.0		
Lockdown orders restricting movement influenced pregnant women access to antenatal health care services	Strongly Agree	95	79.2	4.02	0.769
	Agree	14	11.6		
	Neutral	3	2.5		
	Disagree	8	6.7		
	Strongly Disagree	0	0.0		
	Total	120	100.0		
Due to stock outs of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown	Strongly Agree	93	77.5	3.98	0.796
	Agree	15	12.5		
	Neutral	2	1.7		
	Disagree	10	8.3		
	Strongly Disagree	0	0.0		
	Total	120	100.0		

In our community, pregnant women were advised not to visits sites of ANC check-ups for several months during Covid-19	Strongly Agree	89	74.2	3.94	0.788
	Agree	30	25		
	Neutral	14	11.7		
	Disagree	7	5.8		
	Strongly Disagree	0	0.0		
	Total	120	100.0		

Table 5 represents the descriptive statistics on the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. The results showed that 117(97.5%) of the respondents accepted to the statements that fear of contracting COVID-19 influences my decisions to access ANC in such hospital environment (Mean=4.15); followed by 116(96.6%) of the respondents who accepted that travel restrictions limited pregnant women uptake to ANC services in this health facility (Mean=4.33); the, respondents equivalent to 115(95.8%) accepted that the increased transport prices had an influence on pregnant women access to antenatal health care services (Mean=4.06); and, lastly, 114(95%) of the respondents revealed that closure of ANC clinic limited our access and uptake of ANC services (Mean=3.90).

The first objective was also set to examine the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. Interview schedules were used to solicit information from the district health stakeholders and ANC health practitioners at Bukedea Health Center IV. Respondents were involved in answering interviews.

However, when they were asked: *What is the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV?*

In interviews, it was revealed that fear of contracting Covid-19 influences pregnant women decisions to access ANC in such hospital environment; in fact, one of the district health stakeholders explained that;

“.....several pregnant women feared contracting Covid-19 pandemic when they go for antenatal health care at the health facility. They feared contracting Covid-19 pandemic while in that state of pregnancy, to avoid having serious health conditions and their life to deteriorate. Most pregnancy women who contracted Covid-19 died, and this was because of the weak body that could not manage fighting against the virus, and this eventually scared-away many pregnant women to access for such services....”

This implies that pregnant women fear to get contracted to Covid-19 while accessing antenatal care services. They tried to follow social distancing and respect other health prevention guidelines as a strategy to avoid contracting the disease, which eventually limited their access to antenatal health care. The alarm and panic individuals were feeling during the pandemic triggered response of fear of contracting the virus causing Covid-19, leading to accompanied excessive concern over psychological symptoms, significantly limiting pregnant women access to antenatal care services.

The study findings also revealed that travel restrictions limited pregnant women uptake to ANC services in this health facility. Another district health stakeholder had this to say;

“.....there were travel restrictions during the period of Covid-19 pandemic. Only vehicles allowed to move were either for essential workers with stickers from the Ministry of Transports and Works and security vehicles. Other vehicles could move only with permission of the RDC which involved a lot of bureaucracy to get. Pregnant women faced this challenge thus limiting them to access antenatal health facilities for desired antenatal health services.....”

This implies that Covid-19 lockdowns had severe social and health implications across the global. Because of the travel ban due to the pandemic, global supply chains for medical sundries was disturbed, and antenatal business activities were forced to halt during 2020. Travel restriction was effective in preventing Covid-19 case importation in early outbreak phase, but may still be limited in preventing general local transmission, which have limited pregnant women access to antenatal health care services.

The study also revealed that the increased transport prices have an influence on pregnant women access to antenatal health care services. Another ANC health practitioner had these to say;

“.....with the outbreak of Covid-19 pandemic, there was restriction of movement. Public means of transport were regulated and few people (i.e. two per seat) were allowed as per presidential directive. The rise of transport expenses however limited the pregnant women to afford transport costs to access antenatal health care services. With limited financial resources among households, pregnant women were not able to adequately attend antenatal care services.....”

The study revealed that the increase in transport costs limited the pregnant women to promptly access antenatal care services in available health facility. During Covid-19 pandemic as well as transport restrictions, transport expenses doubled, and this was expensive for most pregnant women to afford, thus limiting their ability to access antenatal health care services.

Additionally, the study revealed that closure of ANC clinic limited pregnant women access and uptake of ANC services. Another district health stakeholders interviewee noted that;

“.....ANC clinic was closed and later re-opened but only allowed to operate under strict guideline. It was allowed to operate from 9:00Am to 2:00Pm to allow health workers and pregnant women from distance to travel back while still early. Some of the pregnant women could not afford reaching at the health facility by that time, and when report late, they could go back unattended too or given another appointment which was hectic and tiresome, thus limiting their access to antenatal health care services....”

This implies that the ANC clinic was closed during the pandemic. It was totally closed to avoid more spread of the virus; however, it was later re-opened under strict guidelines. ANC clinic was re-opened for specific hours to allow the health workers and pregnant women be able to go back home while still hours to avoid curfew hours. Uganda imposed the nighttime curfew in 2020 in a bid to limit the spread of the Covid-19 pandemic; where businesses had to shut down at 6pm, and no cars were allowed to the streets beyond 7Pm.

It was also revealed that banning of group gatherings limited pregnant women access to antenatal health information; in fact, one of the ANC health practitioners explained that;

“....an almost total ban on social gatherings was imposed during full national lockdowns. Household mixing rules as well as public gathering restrictions were imposed to prevent people who do not live together from meeting. In other words, social distancing at the ANC facilities could make pregnant women to stay long in the queues for long, which limited their access to antenatal health care services in the health facility...”

This implies that the Covid-19 pandemic had impact on pregnant women ability to gather with others for counseling services and other ANC related services. Always health professionals met pregnant women in groups at the health facility to provide them with relevant information concerning ANC

care, but this was limited and restricted by presidential directives towards public gathering, which eventually limited pregnant women access to antenatal health care services.

The study also noted that lack of antenatal education limited pregnant women uptake to ANC services in this health facility. One of the interviewed ANC health practitioners had these to say;

“.....there is always limited education and awareness concerning antenatal care services in the community. Education concerning antenatal care services is inadequate during Covid-19 pandemic. Publicity and information sharing on antenatal care services was lacking, which limited pregnant women access to antenatal care services.....”

This implied that pregnant women had inadequate information concerning antenatal care services. They had limited information and awareness concerning antenatal care services. They lack information concerning antenatal services provided, where to find them and how to access it.

The study further revealed that lockdown orders restricting movement influenced pregnant women access to antenatal health care services just as shared below by one of the interviewed district health stakeholders;

“.....lockdown restrictions enforced to halt the spread of Covid-19 have affected pregnant women behaviors. It limited to movement of pregnant women to access antenatal health care services. With presidential directive restricting people’s movement from one district to another and limits vehicle movement, pregnant women had no way of accessing the health facility for antenatal health care services....”

This means that with strict movement guidelines, pregnant women were unable to access the available antenatal health care services from the health facility. They were unable to walk long distances to the health facility since vehicle movements were regulated. It was most advisable to seek antenatal health services from the Village Health Team and other available nearby health facility especially private clinics.

More so, it was noted that due to stock outs of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown. One of the interviewed ANC health practitioners also noted that;

“.....the limited medicine and food supplements in the health facility for the pregnant women limited their access for antenatal health care services. Food supplements, medicines and other medical sundries were blocked from entering the country to avoid further spread of Covid-19 pandemic.....”

This implies that the health facility had limited medicine and food supplements for pregnant women. Still, there were few available health professionals to attend to the pregnant women because of working in intervals to avoid congestion in the health facility. In most occasions, these pregnant women could fear or relax to seek antenatal care services expecting to have no or receive poor services from this facility.

Lastly, the study revealed that pregnant women were advised not to visits sites of ANC check-ups for several months during Covid-19. Another district health stakeholder had these to say;

“.....the presidential directives and publicity advising pregnant women to stop or postpone seeking antenatal for several months on several media especially radio and television eventually limited these pregnant women to seek for antenatal care services from the health facility.....”

This means that pregnant women respected the government directives stopping them from visiting the health facility so as to avoid getting the virus. This was widely published through radio and television adverts which discourage pregnant women to seek for such services.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823 ^a	.677	.651	.140

a. Predictors: (Constant), B10, B6, B2, B3, B7, B4, B8, B9, B5

The study revealed that the predictors can account for 65% of the variance in the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic (Adjusted R Square = .651). Thus, the remaining variance of 35% can be attributed to other factors that are outside the scope

of this study. It was observed that both the predictor variables significantly explain the dependent variable (influence of Covid -19) among pregnant mothers' care during COVID -19 lockdown.

Table 6: Examine the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic

Model		Unstandardized Coefficients		Standardized	T	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	4.925	.492		10.014	.000
	B2	.074	.075	.069	.980	.329
	B3	.061	.057	.078	1.074	.285
	B4	.185	.015	.846	12.103	.000
	B5	-.160	.049	-.243	-3.271	.001
	B6	-.029	.032	-.056	-.903	.368
	B7	-.006	.040	-.011	-.160	.873
	B8	.022	.035	.042	.646	.520
	B9	.090	.040	.156	2.250	.026
	B10	-.222	.054	-.284	-4.138	.000

a. Dependent Variable: *uptake of ANC services*

Where :

B4: Closure of ANC clinic limited our access and uptake of ANC services

B5: Banning of group gatherings limited pregnant women access to antenatal health information

B9: Due to stock outs of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown

B10: In our community, pregnant women were advised not to visits sites of ANC check-ups for several months during Covid-19

Finding in table 4.1.1 suggests that the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic let to the **(B4)** Closure of ANC clinic which limit to access to service delivery for the mothers and there was a significant aspect $P= 0.000 > 0.05$ implying that during the pandemic government gave orders to all the private clinics that were not meeting the health standard were ordered to close which affected these pregnant mothers.

Research finding indicate that **(B9)** due to stock outs of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown it was an important

aspect Government health facilities lack required medical services specifically for pregnant women like family planning, abort services and fertility clinics due to inadequate medical equipment and staff to handle such delicate ANC health services and this evident with statistically significance being (P= 0.001) and with a negative impact being (Beta= -.243).

Finally, it was proved statistically right (P=0.000) that **(B10)** in communities, pregnant women were advised not to visits sites of ANC check-ups for several months during Covid-19 this impacted negatively with Beta= -4.138 implying that there was a limited publicity, which undermine pregnant mothers' access to ANC information as well as accessibility to ANC services which caused difficulties in giving birth.

4.3.2 Assess influence of government initiatives on uptake of ANC services among pregnant mothers during the COVID-19 pandemic

The study was also specifically meant to assess the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. The structure was also measured using different study variables and five-point Likert scale whose results are indicated in Table 7.

Table 7 : Influenc of government initiatives on uptake of ANC services among pregnant mothers during the COVID-19 pandemic

Statement	Extent of dis(agreement)			Mean	Std. Devt
	Responses	(f)	(%)		
The existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers	Strongly Agree	117	97.5	4.28	0.659
	Agree	3	2.5		
	Neutral	0	0.0		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Political will has an influence on the availability and uptake of ANC services among pregnant mothers	Strongly Agree	114	95	4.10	0.842
	Agree	5	4.2		
	Neutral	1	0.8		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		

Government budget allocation has an influence on uptake of ANC services among pregnant mothers	Strongly Agree	112	93.3	4.29	0.74
	Agree	6	5		
	Neutral	2	1.7		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Donor funding has an influence on uptake of ANC services among pregnant mothers	Strongly Agree	109	90.8	4.18	0.793
	Agree	7	5.8		
	Neutral	4	3.4		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers	Strongly Agree	106	88.4	4.60	0.597
	Agree	6	5		
	Neutral	4	3.3		
	Disagree	4	3.3		
	Strongly Disagree	0	0.0		
	Total	120	100		
The local stakeholders (district) has an influence uptake of ANC services among pregnant mothers	Strongly Agree	102	85	4.51	0.605
	Agree	10	8.3		
	Neutral	8	6.7		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Integration of ANC with other health services influence our uptake for ANC services	Strongly Agree	100	83.3	3.88	0.97
	Agree	11	9.2		
	Neutral	7	5.8		
	Disagree	2	1.7		
	Strongly Disagree	0	0.0		
	Total	120	100		

Health promotion has empowered us with essential information for meaningful involvement in antenatal care services.	Strongly Agree	97	80.8	3.68	0.88
	Agree	11	9.2		
	Neutral	9	7.5		
	Disagree	3	2.5		
	Strongly Disagree	0	0.0		
	Total	120	100		
Presence of VHT as encouraged us to access and uptake of ANC services	Strongly Agree	94	78.3	3.87	0.96
	Agree	13	10.8		
	Neutral	5	4.2		
	Disagree	8	6.7		
	Strongly Disagree	0	0.0		
	Total	120	100		
We access ANC information through community programs, publicity and use of mass media platforms	Strongly Agree	88	73.3	3.76	0.89
	Agree	15	12.5		
	Neutral	9	7.5		
	Disagree	8	6.7		
	Strongly Disagree	0	0.0		
	Total	120	100		

Table 7 above represents the descriptive statistics on the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. The results show that 120(100%) of the respondents accepted to the statements that the existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers (Mean=4.28); political will has an influence on the availability and uptake of ANC services among pregnant mothers, and this was accepted by 119(99.2%) of the respondents (Mean=4.10); government budget allocation has an influence on uptake of ANC services among pregnant mothers, and this was accepted by 118(98.3%) of the respondents; and lastly, donor funding has an influence on uptake of ANC services among pregnant mothers, and this was accepted by 116(96.6%) of the respondents (Mean=4.18).

The second objective was also set to assess the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV.

Interview schedules were used to solicit information from the district health stakeholders and ANC health practitioners at Bukedea Health Center IV. Respondents were involved in answering interviews.

However, when they were asked: What is the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV?

In interviews, it was revealed that the existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers; in fact, one of the district health stakeholders explained that;

“.....there are gaps in the existing legal and institutional frameworks that govern the provision and uptake of ANC services among pregnant women. The existing frameworks do not cater for mandatory access to ANC services among pregnant women. Most pregnant women decide on when and where to access ANC services at their own will and time, limiting their ability to access the available antenatal care services.....”

This implies that the existing legal and institutional frameworks do not guarantee for the mandatory access to antenatal care services. Pregnant women decide on how, when and where to access ANC services. Several legal policies affecting access to antenatal health care services have been adopted across Uganda, but the implementations remained weak. Most of those legal and institutional frameworks have remained as a paper work.

It was revealed that political will has an influence on the availability and uptake of ANC services among pregnant mothers; in fact, one of the ANC health practitioners explained that;

“.....politicians support and encouraging the public access to antenatal care services influence its accessibility by pregnant women. Politicians always make public announcement and share ANC information in public meetings and encourage their followers to access such services in the nearby health facility, which eventually accelerate the accessibility of antenatal health care services....”

This implies that politicians' involvement in social support through mobilization, sharing ANC information, awareness and encouraging the public to access these ANC services enhance pregnant women access to antenatal health care services. Politicians to either accept allocation of high financial budget to ANC services or limited budget allocation to such services in the health facility also have a great influence on the pregnant women choice of accessing antenatal health care services.

It was however revealed that government budget allocation has an influence on uptake of ANC services among pregnant mothers; in fact, one of the district health stakeholders explained that;

“.....the allocation of government budget to finance the provision and extension of antenatal health care greatly influences its accessibility by pregnant mothers. High financial allocation of resources to finance and equipped health facility with adequate medicine, medical sundries and motivate its health professionals to even have outreach services, eventually enhance pregnant women access to ANC services, unlike the situation where you find the financial allocation is minimal.....”

This implies that with enough government budget allocation to the extension and provision of antenatal health care services; help health facility to recruit more health workers, procure the medical sundries and medicine as well as supplementary food for pregnant women. Financial budgets also help in having well-furnished health facilities to encourage nurses to effectively conduct ANC services, which all enhance pregnant women access to ANC services.

The study also noted that donor funding has an influence on uptake of ANC services among pregnant mothers. One of the ANC health practitioners in interviews, revealed that;

“.....the uptake of antenatal care services among pregnant women tends to be commonly influenced by the donor funding. With more donors funding, health facility are able to conduct antenatal care outreaches services, able to have adequate medicine, recommended food nutrients and medical sundries including gloves and mother kits, and this eventually motivate pregnant women to seek antenatal health care services from this health facility....”

This means that donors and other development partners usually do partnership with the government and lower bodies like health facility to reach to the pregnant women. Donors have been involved in funding the programs involved in provision of free mother kits, mosquito nets and conducting sensitization and awareness on antenatal health care which have eventually encouraged pregnant women to access such available services from the health facility.

The study also noted that stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers. Another interviewed district health stakeholder had these to say;

“.....stakeholder collaboration enhances effective delivery of antenatal health care which eventually promotes pregnant women access to such services. The collaboration between the family members, local leaders, health extension workers like VHT and other health professionals to effectively share ANC information on services provided and quick accessibility have greatly improved the uptake of antenatal care services among pregnant mothers...”

This implies that the collaboration among different stakeholders, community members and leaders as well as development partners through ANC information sharing, and service provision through extension services to the nearby villages enhance pregnant women uptake of antenatal health care services.

In the study, it was accepted that the local stakeholders (district) has an influence uptake of ANC services among pregnant mothers. One of the interviewed ANC health practitioners noted that;

“.....the local stakeholders’ involvement through budgeting and supervision greatly determine the provision of ANC services which adversely influence pregnant women uptake of such services. Local leaders giving enough budgets to the ANC department in the health facilities to cater for the rising ANC demands and provision of required medical sundries like mother kits to every pregnant woman greatly encourage them to seek for these ANC services....”

This implies that pregnant women decide to seek for antenatal health care services with support of the local stakeholders at district level. District technical staff require to enough budgetary allocation to the ANC services, in addition to encouraging the pregnant women (couples) to seek for the available ANC services in the nearby health facility.

The study also noted that integration of ANC with other health services influence pregnant women uptake for ANC services. One of the interviewed district health stakeholders noted that;

“....the integration of antenatal health care services with other social services like counseling, malaria testing and HIV/AIDS testing services tend to boost pregnant women will to uptake for ANC services. Integration of ANC services with other health services encourage pregnant women to seek for such services expects to acquire a variety of health information that would be beneficial to their life...”

This implies that integration of ANC services with other health services encourage pregnant women to uptake for ANC services, while expecting to acquire relevant knowledge and information related to pregnancy especially signs of complications, family planning services provided, post-natal care and other vital information that pregnant women deserve to know for the better of their life.

Additionally, the study found out that health promotion has empowered pregnant women with essential information for meaningful involvement in antenatal care services. One of the interviewed district health stakeholders noted that;

“....health promotions which is done through televisions, television programs and newspapers extending relevant information regarding available ANC services, its accessibility thus enhance the uptake of ANC services among pregnant women....”

This implies that health promotion which is the development of individual, group, community, institutional and systematic strategies to improve health skills, knowledge, attitudes and behavior. Several health promotions enable individuals to increase control over as well increase their ability to access the available ANC services.

The study further noted that presence of Village Health Team (VHT) as encouraged pregnant mothers to access and uptake of ANC services. One of the district health stakeholders in interviews, revealed that;

“.....VHTs desire additional support primarily in the forms of money i.e. allowances and transport as well as material supplies like rubber boots to enable them effective conduct their duties of reaching out to pregnant women and encourage them to access ANC facility. VHTs try their best in extending required ANC information and promoting awareness to the pregnant women.....”

Therefore, this implies that village health team should effectively deliver basic health services and education to pregnant women thus able to motivate them able to access antenatal health care services in the health facility. Despite their impact, VHTs are not optimally supported and attrition is a growing challenge. In other words, Village Health Teams tend to improve on pregnant women critical life-saving skills through training, equipping and support, enhancing the health infrastructure of local communities as well as improving the capacity of the local health care professionals.

Lastly, the study revealed that pregnant women access ANC information through community programs, publicity and use of mass media platforms. One of the interviewed ANC health practitioners noted that;

“.....through mass media especially radio programs, television and the Newspapers have been commonly used in extending antenatal health care information to the pregnant women. The existing community outreach programs have done their best in extending relevant information concerning ANC to the pregnant women, thus enhancing their uptake to such services....”

The implication of this is that through community outreach programs, publicity as well as mass medial platforms, pregnant women have been able to access the vital antenatal care information. Several ANC programs are extended to the community through social media and community outreach services. Such available ANC information helps the pregnant women to acquire more skills and knowledge concerning antenatal care services among pregnant women in the community.

Table 8: Model Summary (Regression Analysis model)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.513 ^a	.263	.203	.540

a. Predictors: (Constant), C10, C6, C3, C7, C5, C9, C4, C2, C8

The study revealed that the predictors can account for 20% of the variance that influence the government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic. (Adjusted R Square = .203). Thus, the remaining variance of 80% can be attributed to other factors that are outside the scope of this study. There was observed predictor variables statistically significantly that explains the dependent variable (influence of government initiatives).

Table 9: influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1	(Constant)	6'.107	2.256	2.707	.008

C2	.395	.127	.323	3.105	.002
C3	-.024	.110	-.023	-.214	.031
C4	.063	.098	.069	-.642	.022
C5	.111	.103	.110	1.074	.285
C6	.105	.123	.086	.851	.396
C7	-.577	.336	-.209	-1.718	.089
C8	.370	.236	.234	1.571	.119
C9	-.363	.256	-.159	-1.418	.159
C10	-.310	.189	-.179	-1.642	.103

a. Dependent Variable: **influence of government initiatives**

Where:

C2: Political will has an influence on the availability and uptake of ANC services among pregnant mothers

C3: Government budget allocation has an influence on uptake of ANC services among pregnant mothers

C4: Donor funding has an influence on uptake of ANC services among pregnant mothers

It was discovered from table 4.2.1 that **(C2)** Political will has an influence on the availability and uptake of ANC services among pregnant mothers which statistically true with $P=0.002$ indicating that there are unsatisfactory interpersonal care in the public sector necessitating the pregnant women to seek services of the private providers who at times would be expensive but perceived to be offering superior services with better customer care unlike you a stake holder in the government otherwise political in developing countries dictates and sectarianisms is on increase.

Finding revealed **:(C3)** Government budget allocation tom health facilities take less response due to corrupt on the highest order and this evident by lack of good infrastructures, buying medical facilities etc. and was found to be statistically significant with $P=0.013$ and had a negative impact pregnant mother in acquiring ANC with Beta = .214.

(D4) Donor funding has an influence on uptake of ANC services among pregnant mothers, this was other important variable in influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic and evident with $P=0.022$ meaning it had statistically significant unfortunate all the Donor funds is corrupted through government agents which result poor service delivery for pregnant mothers in the ANC Beta= -.642

4.3.3 Influence of Perceived Quality of Health Care on Uptake of ANC Services among Pregnant Women during the Covid -19 Pandemic

One of the study objectives was to assess the influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV. Different study variables were therefore used and guided by the five point Likert scale whose results are shown in Table 8.

Table 10 : Influence of perceived quality of health care on uptake of ANC services among pregnant women during the COVID-19 pandemic

Statement	Extent of dis(agreement)			Mean	Std. Devt
	Responses	(f)	(%)		
Attitude of health workers contribute to pregnant women uptake of ANC services in health facility	Strongly Agree	117	97.5	4.28	0.659
	Agree	2	1.7		
	Neutral	1	0.8		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Other women departments at the health facilities influence our uptake to ANC health seeking behavior.	Strongly Agree	115	95.9	4.10	0.842
	Agree	3	2.5		
	Neutral	2	1.6		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Time spent or long queues experienced during seeking for ANC health service influence our uptake	Strongly Agree	111	92.5	4.29	0.74
	Agree	7	5.8		
	Neutral	2	1.6		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Payment for health care provided in health facilities influence us from seeking ANC attention	Strongly Agree	108	90	4.18	0.793
	Agree	8	6.7		
	Neutral	0	0.0		
	Disagree	4	3.3		
	Strongly Disagree	0	0.0		
	Total	120	100		
The structure of the health facility influence our uptake of ANC services	Strongly Agree	103	85.8	4.60	0.597
	Agree	11	9.2		
	Neutral	6	5		
	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
The presence of medical sundries influence our uptake of AND services from health facility	Strongly Agree	99	82.5	4.51	0.605
	Agree	14	11.7		
	Neutral	7	5.8		

	Disagree	0	0.0		
	Strongly Disagree	0	0.0		
	Total	120	100		
Distance to the health facility has an influence on our uptake of ANC services.	Strongly Agree	93	77.5	3.88	0.97
	Agree	16	13.4		
	Neutral	7	5.8		
	Disagree	4	3.3		
	Strongly Disagree	0	0.0		
	Total	120	100		
Availability of multiple services provided at a single point of contact influence our uptake of ANC services	Strongly Agree	87	72.5	3.87	0.89
	Agree	18	15		
	Neutral	6	5		
	Disagree	9	7.5		
	Strongly Disagree	0	0.0		
	Total	120	100		
Perceived high cost of ANC services influence our uptake of ANC services	Strongly Agree	83	69.2	3.23	0.89
	Agree	21	17.5		
	Neutral	11	9.2		
	Disagree	5	4.1		
	Strongly Disagree	0	0.0		
	Total	120	100		
Lack of healthcare staff influence our uptake of ANC services	Strongly Agree	80	66.7	3.17	0.78
	Agree	23	19.2		
	Neutral	7	5.8		
	Disagree	10	8.3		
	Strongly Disagree	0	0.0		
	Total	120	100		

Table 8 represents the descriptive statistics on the influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid-19 pandemic in Bukedea Health Centre IV. The results show that 119(99.2%) of the respondents disagreed to the statements that attitude of health workers contribute to pregnant women uptake of ANC services in health facility (Mean= 4.28); other women departments at the health facilities influence our uptake to ANC health seeking behavior, and this was accepted by 118(98.4%) of the respondents (Mean=4.10); time spent or long queues experienced during seeking for ANC health service influence our uptake, and this was accepted by 118(98.3%) of the respondents (Mean=4.29); and lastly, payment for health care provided in health facilities influence us from seeking ANC attention, and this was accepted by 116(96.7%) of the respondents (Mean=0.793).

The third objective was also set to examine influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV. Interview schedules were used to solicit information from the district health stakeholders and ANC health practitioners at Bukedea Health Center IV. Respondents were involved in answering interviews.

However, when they were asked: *What is the effect of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV?*

In the study, it was disagreed that attitude of health workers contribute to pregnant women uptake of ANC services in health facility; as one district health stakeholders explained that;

“.... pregnant women uptake to antenatal health care services is commonly influenced by the health workers’ attitudes. Some of the health workers tend to be abusive and use rude language, and this scares away pregnant women from accessing ANC services. Therefore, it is important for nurses to have positive attitudes towards patient care if good quality care is to be provided....”

This implies that pregnant women access to ANC services is limited by the incidences of poor patient care and willful neglect of patients’ basic care on the attitudes of pregnant women as patients or patients’ relatives as well as lack of management support. The poor attitudes of health professionals, resulting in poor patient care, could severely limit the ability of the health system to provide quality ANC services and improve outcomes for pregnant women. In most hospital facility lacks regular assess of nurses’ attitudes to ensure that pregnant women uptake to ANC is not compromised.

The study revealed that other women departments at the health facilities influence pregnant women uptake to ANC health seeking behavior. Another interviewed ANC health practitioner had these to say;

“.... pregnant women prefer to have their privacy and confidential information preserved. Presence of private women departments at the health facility to provide ANC services enhance pregnant women privacy and confidentiality, and this eventually enhances their uptake to ANC services. The existence of women department in the facility leads to easy access of the ANC services, which eventually motivate them to uptake for such services....”

This implies that everyone deserves his/her confidential information and privacy be kept with care. The existence of private department for pregnant women at the health facilitates automatically enhance pregnant women privacy which enhances their uptake to seek for ANC services. Most

pregnant women choose health facility where there is privacy and the confidential information kept very safe.

Additionally, it was however accepted that the time spent or long queues experienced during seeking for ANC health service influence our uptake. One of the interviewed district health stakeholders also noted that;

“.....due to the increasing number of pregnant women accessing ANC services at the health facility, a queuing challenge occurs and this led to the number of dissatisfied patients (pregnant women) to be higher than the number of satisfied pregnant women, and this happens due to the perceived waiting experience which eventually influence their uptake to ANC services....”

This implies that pregnant women have to spend a lot of their time in infamously long hospital queues. Some pregnant women take long to access the health facility due to the higher average wait time and inability to find the appropriate physician in the specified period of time. In other words, slow moving queues cause not only pregnant women frustration but may also influence their uptake to ANC services.

The study noted that payment for health care provided in health facilities influence pregnant women from seeking ANC attention. From the interviewed district health stakeholders, one of them noted that;

‘.... the payment for the ANC health services in the facility influence pregnant women uptake for antenatal health services. When the pay is low, more pregnant women shall seek the available services. Those ANC services that require higher payments, few women decide to go for such existing services. In other words, most pregnant women decide to seek ANC services from the health facility being government and most of ANC services provided are either cheap or provided for free....’

This implies that the amount of payment in forms of consultation fees where applicable, medicine and sample testing charges influence pregnant women uptake to the ANC services in the facility. In this health facility being a government health unit, most of the ANC services are freely provided apart from those services they don't have, and this have encouraged more pregnant women to seek ANC and similar health services from the health facility.

The study further revealed that the structure of the health facility influences pregnant women uptake of ANC services. One of the interviewed ANC health practitioners had these to say;

“.... the health facility structures greatly motivate pregnancy women uptake of antenatal health care services. The health facility with private wing for pregnant women with specialized health professionals tends to provide adequate health services to pregnant women with limited disturbances like long queues, and eventually this facilitates the uptake of ANC services by pregnant women....”

This implies that the health facility structure in terms of well-furnished and ventilated facilities enhance pregnant women trust to the ANC services provided at the facility. There is increasing number of pregnant women accessing ANC services in the facility with adequate furnished and stocked health facilities, where they can easily get free medicines and other medical sundries.

The study revealed that the presence of medical sundries influences pregnant women uptake of ANC services from health facility. The interviewed district health stakeholders also noted that;

“.... the availability of the required medical sundries like Mother Kits, gloves, mention them motivates the pregnant women uptake for ANC services in the health facility. Pregnant women tend to prefer the alternative health facilities like private health centers with increasing complaints of inadequate medical sundries in the government facility...”

This implies that pregnant women prefer to attend their ANC services to the health facility where medical sundries are adequate for their safety and hygienic practices. Though, with limited supply of medical sundries in the facility courtesy of limited financial budget allocation, this have discouraged several pregnant women from seeking ANC services in such facility.

The study revealed that the distance to the health facility has an influence on our uptake of ANC services. The interviewed ANC health practitioners also noted that;

“.... the distance to the health facility limits pregnant women access to ANC services. In most occasions, the distance to the facility is more than 5Km which is contrary to the recommended distance under the Ministry of Health to be less than 5Km. Pregnant women have to walk long distance for ANC services, and sometimes reach late when the ANC department have already closed and have to wait for another day to access the services. Also, increasing distances to healthcare facility as well as socio-demographic and health related factors influence health service utilization...”

This implies that if the necessary distance to travel exceeds an acceptable threshold, patients may not use healthcare and potentially encounter adverse ANC health effects. Thus, equitable access to healthcare is of significant importance for governments and health professionals and a basic concern in healthcare planning and allocation, in other words, access is a multidimensional concept encompassing spatial factors such as distances to service points, and non-spatial factors such as waiting times which influence each other, and pregnant women uptake of ANC services.

The study revealed that availability of multiple services provided at a single point of contact influence pregnant women uptake of ANC services. The interviewed district health stakeholders also noted that;

“.... existence of multiple services provided by the health facility has an influence of the pregnant women uptake for ANC services. They have tendencies of going at a single point of contact to have access to several health care services....”

This implies that the provision of several health services at a single point always encourage pregnant women to easily come for such available services at single point of contact. This eases accessibility to such ANC services as well as affordability in-terms of transport costs involved.

The study revealed that the perceived high cost of ANC services influences pregnant women uptake of ANC services. The interviewed ANC health practitioners also noted that;

“.....most pregnant women prefer to access ANC services from the health facility (government) because of being cheap and affordable. It is commonly provided for free. Pregnant women in most cases are request to afford the medical bills especially for those medicines that are not available at the facility which eventually enhance the uptake for ANC services at the health facility...”

This implies that cheap costs of ANC services provided at the health facility have encouraged more pregnant women to come for the available ANC services. Most pregnant women prefer cheap and affordable antenatal medical care services, and being available at the facility, the uptake of these services have gradually continue to rise. It is in record that most HC VI being a government health facility, it is a duty of the government to pay salaries and allowances for the health works as well as procuring medicines and medical sundries; this implies that the ANC services provided are supposed to be totally free or provided at affordable costs.

Lastly, the study revealed that lack of healthcare staff influence pregnant women uptake of ANC services. The interviewed district health stakeholders also noted that;

“.....the health facility experiences a challenge of inadequate health staff. There are limited health professionals especially to handle ANC services in the health facility. Most of the available health workers tend to be nurses and clinical officers that are not attend too those pregnant women with pregnancy complications, thus limiting their uptake for ANC services from the health facility....”

This implies that limited number of healthcare professionals in the health facility to handle the rising number of pregnant women influence their uptake for ANC services. Pregnant women have experienced long queues at the facility due to few health professionals to attend to them at the same time. Some of the available health workers are incompetent and not skilled enough to handle the pregnant women with pregnancy complications. In return, this scenario's have been observed in the facility which has undermined the pregnancy women uptake of ANC services from the facility.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.710 ^a	.505	.464	.303

a. Predictors: (Constant), D2, D7, D4, D6, D3, D9, D8, D5, D10

The study found out that the predictors can account for 46.4% of the variance on influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic (Adjusted R Square = .464). Thus, the remaining variance of 50.6% can be attributed to other factors that are outside the scope of this study. It was discovered that both the predictor variables are significantly explaining the dependent variable (influence of perceived quality of health care).

Table 12: Influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.119	.555		3.817	.000
	D10	-.252	.122	-.268	-2.071	.041
	D9	.072	.107	.080	.667	.506
	D8	-.035	.075	-.044	-.461	.646
	D7	-.082	.081	-.089	-1.006	.316
	D6	.095	.067	.107	1.411	.161
	D5	-.044	.096	-.056	-.460	.646
	D4	.142	.098	.165	1.458	.148
	D3	.180	.076	.195	2.378	.019
	D2	.492	.075	.551	6.540	.000

a. Dependent Variable: **Influence of perceived quality of health care.**

D10: Lack of healthcare staff influence our uptake of ANC services

D3: Time spent or long queues experienced during seeking for ANC health service influence our uptake

D2: Other women departments at the health facilities influence our uptake to ANC health seeking behavior.

From the table 4.3.3 revealed that variable D10(*lack of healthcare*) influence our uptake of ANC services and this had a negative impact on ANC of the pregnant women Beta=-2.071 with a statistical evidence P=0041>0.05, this mean that these pregnant mothers feared overcrowding and this had a number of

consequences, including getting exposure to Covid-19 easily, longer hospital stays and inadequate treatment; as a result, close contact may lead to the wide spread of pandemic to the already weak pregnant mothers hence very mothers could prefer to go for ANC in the health centers during the pandemic.

Furthermore, in the same table research finding revealed that D2 (*Time spent*) during seeking for ANC health service influence our uptake, this evident with $P=0.019$ which statistically significant in the study indicating that inequalities in the access and use of ANC health care in developed countries stated that rural women(mothers) are more likely to seek ANC health services from private health facilities than rural women this is because government health centers are located in area where the rural when can't afford to move there first because of poor roads and high expensive transports costs during Covid-19 where transports cost were very due social distancing etc.

Finally, there is also statistical evidence with $P=0.000$ which is significant in the finding D2 Other women departments at the health facilities influence our uptake to ANC health seeking behavior, this implies Pregnant women fear of going there to access some of the medical services like safe abortion, family planning services as well as fertility services in fear of being criticized by the female counterparts.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The study examined the effect of the Covid -19 pandemic and factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District. This chapter presents the discussion, conclusions, and recommendations of the study and these are presented according to the findings in chapter four. The areas for further study are equally presented in this chapter.

5.1 Discussion of Findings

The findings are discussed according to the research objectives and details are presented in chapter four in thematic manner as follows:

5.1.1 Influence of Covid -19 on Uptake of ANC Services among Pregnant Mothers during the Covid -19 Pandemic

The above study theme of examining the influence of Covid -19 on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV; and these ranges from:

Study finding revealed a significant relationship between Covid-19 pandemic and the uptake of ANC services among pregnant women, This implies that in Covid-19 pandemic, fear of contracting Covid-19 influences pregnant women decisions to access ANC in such hospital environment; travel restrictions limited pregnant women uptake to ANC services to the health facility; the increased transport prices has an influence on pregnant women access to antenatal health care services; and closure of ANC clinic limited pregnant women access and uptake of ANC services. This concurs with Burt., Ouma., Lubyayi., Amone., Lorna., Nakabembe., Musa., Nakimuli., Mboizi., Kyohere., Asma & Kirsty (2021), who asserted that all ANC services ceased in lockdown for several months in Uganda. During the Covid-19 lockdown, the number of

antenatal attendances significantly decreased and remained below pre-Covid levels across the districts in Uganda. Besides, Kumari., Mehta., & Choudhary (2020) further argued out that the Ugandan response to Covid-19 negatively impacted antenatal care service accessibility, with an increase seen in pregnancy complications and fetal and infant outcomes, likely as a result of delayed care-seeking behavior. This implies that the antenatal attendances decreased dramatically as a result of Covid-19 lockdown.

In the regression, it was predicted that 24.5% variation in uptake of ANC services is explained by changes in Covid-19 pandemic. This implies that any changes in Covid-19 pandemic would lead to 24.5% change on the uptake of ANC services. This means that any widespread in the Covid-19 pandemic is significantly and negatively associated with uptake of ANC services. This concurs with Plotkin *et al.*, (2022) who argued out that the outbreak of Covid-19 pandemic disrupted the access of antenatal care services. There was total lockdown where there was restricted movement of vehicles and people. People could not be allowed to move from one district to another to access antenatal health services. There was along bureaucracy to be allowed to move one district to another by getting recommendation letter from RDCs, and this could in most cases take long time, leading to rising health complications among pregnant mothers. Nakkazi (2021) asserted that travel restrictions included the cessation of all public transport and a ban on the use of private vehicles without explicit permission to travel in Uganda. More so, Bert *et al.*, (2021) argued out that the proportion of pregnant women receiving HIV testing in ANC declined by a rate of 4% (95%CI 1.5% to 6.5% decline; $p=0.01$) during lockdown but increased to baseline at the end of restrictions. This implies that lack of healthcare staff, fear of infection, disruption of services due to COVID-19, lockdown orders restricting movement and the increased transport prices influenced pregnant women access to antenatal health care services.

The study showed that fear of contracting Covid-19 influences pregnant women decisions to access ANC in such hospital environment. This concurs with Brown and Lumley (2018) who argued that pregnant women fear to get contracted to Covid-19 while accessing antenatal care services. They tried to follow social distancing and respect other health prevention guidelines as a strategy to avoid contracting the disease, which eventually limited their access to antenatal health care. On the other hand, Ayalew and Nigatu (2018) shows that the alarm and panic individuals were feeling during the pandemic triggered response of fear of contracting the virus causing Covid-19, leading to accompanied excessive concern over psychological symptoms, significantly limiting pregnant women access to antenatal care services. This implies that several pregnant women feared of contracting Covid-19 pandemic when they go for antenatal health care at the health facility. They feared of contracting Covid-19 pandemic while in that state of pregnancy, to avoid having serious health conditions and their life to deteriorate. Most pregnancy women who contracted Covid-19 died, and this because of the weak body that could not manage fighting against the virus, and this eventually scared-away many pregnant women to access for such services.

The study showed that travel restrictions limited pregnant women uptake to ANC services in this health facility. This concurs with Chmielewska., Barratt and Townsend (2021) who argued that Covid-19 lockdowns have had severe social and health implications across the global. Because of the travel ban due to the pandemic, global supply chains for medical sundries was disturbed, and antenatal business activities were forced to halt during 2020. Besides, Basudde (2018) noted that travel restriction was effective in preventing Covid-19 case importation in early outbreak phase, but may still be limited in preventing general local transmission, which have limited pregnant women access to antenatal health care services. This implies that there were travel restrictions during the period of Covid-19 pandemic. Only vehicles allowed to move were either for essential

workers with stickers from the Ministry of Transports and Works and security vehicles. Other vehicles could move only with permission of the RDC which involved a lot of bureaucracy to get. Pregnant women faced this challenge thus limiting them to access antenatal health facilities for desired antenatal health services.

The study showed that the increased transport prices have an influence on pregnant women access to antenatal health care services. This is in agreement with Ayalew and Nigatu (2018) who argued that that the increase in transport costs limited the pregnant women to promptly access antenatal care services in available health facility. During Covid-19 pandemic as well as transport restrictions, transport expenses doubled, and this was expensive for most pregnant women to afford, thus limiting their ability to access antenatal health care services. Besides, Brown and Lumley (2018) argued that with the outbreak of Covid-19 pandemic, there was restriction of movement. Public means of transport were regulated and few people (i.e two per seat) were allowed as per presidential directive. This implies that the rise of transport expenses however limited the pregnant women to afford transport costs to access antenatal health care services. With limited financial resources among households, pregnant women were not able to adequately attend antenatal care services.

Additionally, the study showed that closure of ANC clinic limited pregnant women access and uptake of ANC services. This concurs with Hailemariam. Agegnehu and Derese (2021) who argued that the ANC clinic was closed during the pandemic. It was totally closed to avoid more spread of the virus; however, it was later re-opened under strict guidelines. ANC clinic was re-opened for specific hours to allow the health workers and pregnant women be able to go back home while still hours to avoid curfew hours. More to above, Nakimuli., Mboizi., Kyohere, Asma and Kirsty (2021) asserted that Uganda imposed the nighttime curfew in 2020 in a bid to limit the spread of the Covid-19 pandemic; where businesses had to shut down at 6pm, and no cars were

allowed to the streets beyond 7Pm. This implies that ANC clinic was closed and later re-opened but only allowed to operate under strict guideline. It was allowed to operate from 9:00Am to 2:00Pm to allow health workers and pregnant women from distance to travel back while still early. Some of the pregnant women could not afford reaching at the health facility by that time, and when report late, they could go back unattended too or given another appointment which was hectic and tiresome, thus limiting their access to antenatal health care services.

It was also showed that banning of group gatherings limited pregnant women access to antenatal health information. This concurs with Asimwe and Maganda (2017) who argued that the Covid-19 pandemic has impacted pregnant women ability to gather with others for counseling services and other ANC related services. Always health professionals met pregnant women in groups at the health facility to provide them with relevant information concerning ANC care, but this was limited and restricted by presidential directives towards public gathering, which eventually limited pregnant women access to antenatal health care services. This implies that an almost total ban on social gatherings was imposed during full national lockdowns. Household mixing rules as well as public gathering restrictions were imposed to prevent people who do not live together from meeting. In other words, social distancing at the ANC facilities could make pregnant women to stay long in the queues for long, which limited their access to antenatal health care services in the health facility.

The study also noted that lack of antenatal education limited pregnant women uptake to ANC services in this health facility. This is in agreement with Burt et al., (2021) who noted that pregnant women had inadequate information concerning antenatal care services. They had limited information and awareness concerning antenatal care services. They lack information concerning antenatal services provided, where to find them and how to access it. This implies that there is always limited education and awareness concerning antenatal care services. Education concerning

antenatal care services is inadequate during Covid-19 pandemic. Publicity and information sharing on antenatal care services was lacking, which limited pregnant women access to antenatal care services.

The study further showed that lockdown orders restricting movement influenced pregnant women access to antenatal health care services. This concurs with Chmielewska., Barratt and Townsend (2021) who asserted that with strict movement guidelines, pregnant women were unable to access the available antenatal health care services from the health facility. They were unable to walk long distances to the health facility since vehicle movements were regulated. It was most advisable to seek antenatal health services from the Village Health Team and other available nearby health facility especially private clinics as ascertained by Basudde (2018). This implies that lockdown restrictions enforced to halt the spread of Covid-19 have affected pregnant women behaviors. It limited to movement of pregnant women to access antenatal health care services. With presidential directive restricting people's movement from one district to another and limits vehicle movement, pregnant women had no way of accessing the health facility for antenatal health care services.

More so, it was noted that due to stockouts of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown. This concurs with Ayalew and Nigatu (2018) who argued that the health facility had limited medicine and food supplements for pregnant women. Still, there were few available health professionals to attend to the pregnant women because of working in intervals to avoid congestion in the health facility. In most occasions, these pregnant women could fear or relax to seek antenatal care services expecting to have no or receive poor services from this facility as ascertained by Tumwesigye *et al.*, (2021). This implies that the limited medicine and food supplements in the health facility for the pregnant women limited their access for antenatal health care services. Food supplements, medicines and

other medical sundries were blocked from entering the country to avoid further spread of Covid-19 pandemic.

Lastly, the study showed that pregnant women were advised not to visit sites of ANC check-ups for several months during Covid-19. This is in agreement with Akowuah., Agyei-Baffour and Awunyo-Vitor (2018) who argued that pregnant women respected the government directives stopping them from visiting the health facility so as to avoid getting the virus. This was widely published through radio and television adverts which discourage pregnant women to seek for such services. This implies that the presidential directives and publicity advising pregnant women to stop or postpone seeking antenatal for several months on several media especially radio and television eventually limited these pregnant women to seek for antenatal care services from the health facility.

5.1.2 influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid-19 pandemic

The above study theme of examine the influence of government initiatives on uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV; and these include:

The findings revealed that there is a significant relationship between government initiatives and uptake of ANC services among pregnant women ($r=342^{**}$). This implies that in that situation, the existing institutional and legal framework, political will, government budget allocation, donor funding and stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers. This concurs with Kirmani & Saleem (2021) who argued that governments consider ANC as potentially valuable platforms for integrated delivery of additional health services for pregnant women-services that are vital to reduce the persistently high rates of maternal and neonatal mortality on low and middle income countries. ANC serve as an effective

platform for a broad range of health interventions, including for the provision of services for conditions that increase the risk of complications during pregnancy. Integrating ANC with malaria, HIV/AIDS, STIs, and TB services can also expand the reach of these programs to a broader population (Muhwezi, 2021). This implies that government initiatives through community programs, publicity and use of mass media platforms to extend information related ANC available services, accessibility and availability encourage pregnant women to seek for such services.

The regression results predict that 30.4% variation in uptake of ANC services among pregnant women is explained by changes in government initiatives. This implies that any changes in government initiatives would lead to 30.4% change in uptake of ANC services among pregnant women if all aspects in ANC services were squarely addressed. Therefore, improvement in government initiatives would lead to improvement in academic staff performance uptake of ANC services among pregnant women as the existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers. This concurs with Tweheyo., Konde- Lule., Tumwesigye & Sekandi (2020) noted that health promotion is needed to empower pregnant women with essential information for meaningful involvement in antenatal care services. More still, Brown & Lumley (2018) added that the government has promoted ANC services accessibility through extending community outreach, mobilization, and mass media campaigns, including radio and television messages, billboards, widespread educational materials and public events which greatly improve on pregnant women's involvement in antenatal health care. Kirmani & Saleem (2021) asserted that distance to health facilities is one of the major factors influencing pregnant women's health seeking behaviour for ANC in government health facilities. This implies that one of the challenges facing women's health seeking behaviour in Uganda is poor physical access to health units providing standard health services.

The study showed that the existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers; and this concurs with Brown and Lumley (2018) who argued that the existing legal and institutional frameworks do not guarantee for the mandatory access to antenatal care services. Pregnant women decides on how, when and where to access ANC services. Several legal policies affecting access to antenatal health care services have been adopted across Uganda, but the implementations remained weak. Most of those legal and institutional frameworks have remained as a paper work as ascertained by Chmielewska et al., (2021). There are gaps in the existing legal and institutional frameworks that govern the provision and uptake of ANC services among pregnant women. This implies that the existing frameworks do not cater for mandatory access to ANC services among pregnant women. Most pregnant women decide on when and where to access ANC services at their own will and time, limiting their ability to access the available antenatal care services.

It was showed that political will has an influence on the availability and uptake of ANC services among pregnant mothers. This concurs with Brown and Lumley (2018) who argued that politicians' involvement in social support through mobilization, sharing ANC information, awareness and encouraging the public to access these ANC services enhance pregnant women access to antenatal health care services. Besides, Kirmani & Saleem (2021) showed that politicians to either accept allocation of high financial budget to ANC services or limited budget allocation to such services in the health facility also have a great influence on the pregnant women choice of accessing antenatal health care services. This implies that politicians support and encouraging the public access to antenatal care services influence its accessibility by pregnant women. Politicians always make public announcement and share ANC information in public meetings and encourage their followers to access such services in the nearby health facility, which eventually accelerate the accessibility of antenatal health care services.

The study noted that government budget allocation has an influence on uptake of ANC services among pregnant mothers. This concurs with Islam and Tabassum (2021) who argued that with enough government budget allocation to the extension and provision of antenatal health care services; help health facility to recruit more health workers, procure the medical sundries and medicine as well as supplementary food for pregnant women. More so, Mazengiya (2018) noted that financial budgets also help in having well-furnished health facilities to encourage nurses to effectively conduct ANC services, which all enhance pregnant women access to ANC services. This implies that the allocation of government budget to finance the provision and extension of antenatal health care greatly influences its accessibility by pregnant mothers. High financial allocation of resources to finance and equipped health facility with adequate medicine, medical sundries and motivate its health professionals to even have outreach services, eventually enhance pregnant women access to ANC services, unlike the situation where you find the financial allocation is minimal.

The study also noted that donor funding has an influence on uptake of ANC services among pregnant mothers. This is in agreement with McKee and Stuckler (2020) who argued that donors and other development partners usually do partnership with the government and lower bodies like health facility to reach to the pregnant women. More so, Mazengiya (2018) noted that donors have been involved in funding the programs involved in provision of free mother kits, mosquito nets and conducting sensitization and awareness on antenatal health care which have eventually encouraged pregnant women to access such available services from the health facility. This implies that the uptake of antenatal care services among pregnant women tends to be commonly influenced by the donor funding. With more donors funding, health facility are able to conduct antenatal care outreaches services, able to have adequate medicine, recommended food nutrients and medical

sundries including gloves and mother kits, and this eventually motivate pregnant women to seek antenatal health care services from this health facility.

The study also noted that stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers. This is in agreement with Islam and Tabassum (2021) who argued that the collaboration among different stakeholders, community members and leaders as well as development partners through ANC information sharing, and service provision through extension services to the nearby villages enhance pregnant women uptake of antenatal health care services. This implies that stakeholder collaboration enhances effective delivery of antenatal health care which eventually promotes pregnant women access to such services. The collaboration between the family members, local leaders, health extension workers like VHT and other health professionals to effectively share ANC information on services provided and quick accessibility have greatly improved the uptake of antenatal care services among pregnant mothers.

The study further showed that the local stakeholders (district) have an influence uptake of ANC services among pregnant mothers. This concurs with McKee & Stuckler (2020) who argued that pregnant women decide to seek for antenatal health care services with support of the local stakeholders at district level. District technical staff require to enough budgetary allocation to the ANC services, in addition to encouraging the pregnant women (couples) to seek for the available ANC services in the nearby health facility. Besides, Muhwezi (2021) noted that the local stakeholders' involvement through budgeting and supervision greatly determine the provision of ANC services which adversely influence pregnant women uptake of such services. This implies that the local leaders giving enough budgets to the ANC department in the health facilities to cater for the rising ANC demands and provision of required medical sundries like mother kits to every pregnant woman greatly encourage them to seek for these ANC services.

The study also noted that integration of ANC with other health services influence pregnant women uptake for ANC services. This concurs with Tweheyo., Konde-Lule., Tumwesigye & Sekandi (2020) who asserted that integration of ANC services with other health services encourage pregnant women to uptake for ANC services, while expecting to acquire relevant knowledge and information related to pregnancy especially signs of complications, family planning services provided, post-natal care and other vital information that pregnant women deserve to know for the better of their life. Besides, WHO (2020) asserted that the integration of antenatal health care services with other social services like counseling, malaria testing and HIV/AIDS testing services tend to boost pregnant women will to uptake for ANC services. This implies that integration of ANC services with other health services encourage pregnant women to seek for such services expects to acquire a variety of health information that would be beneficial to their life.

Additionally, the study noted that health promotion has empowered pregnant women with essential information for meaningful involvement in antenatal care services. This concurs with Townsend., Chmielewska and Barratt (2021) who asserted that health promotion which is the development of individual, group, community, institutional and systematic strategies to improve health skills, knowledge, attitudes and behavior. Several health promotions enable individuals to increase control over as well increase their ability to access the available ANC services. This implies that health promotions which is done through televisions, television programs and newspapers extending relevant information regarding available ANC services, its accessibility thus enhance the uptake of ANC services among pregnant women.

The study further noted that presence of Village Health Team (VHT) as encouraged pregnant mothers to access and uptake of ANC services. This is in agreement with Plotkin., McKee and Stuckler (2022) who argued that village health team should effectively deliver basic health services and education to pregnant women thus able to motivate them able to access antenatal health care

services in the health facility. Despite their impact, VHTs are not optimally supported and attrition is a growing challenge. In other words, Nakkazi (2021) noted that Village Health Teams tend to improve on pregnant women critical life-saving skills through training, equipping and support, enhancing the health infrastructure of local communities as well as improving the capacity of the local health care professionals. This implies that VHTs desire additional support primarily in the forms of money i.e allowances and transport as well as material supplies like rubber boots to enable them effectively conduct their duties of reaching out to pregnant women and encourage them to access ANC facility. VHTs try their best in extending required ANC information and promoting awareness to the pregnant women.

Lastly, the study showed that pregnant women access ANC information through community programs, publicity and use of mass media platforms. This concurs with Tweheyo., Konde-Lule., Tumwesigye & Sekandi (2020) who argued that through community outreach programs, publicity as well as mass media platforms, pregnant women have been able to access the vital antenatal care information. Several ANC programs are extended to the community through social media and community outreach services. Such available ANC information helps the pregnant women to acquire more skills and knowledge concerning antenatal care services among pregnant women in the community. On the other hand, Sinha., Bennett and Taylor-Robinson (2020) noted that through mass media especially radio programs, television and the Newspapers have been commonly used in extending antenatal health care information to the pregnant women. This implies that the existing community outreach programs have done their best in extending relevant information concerning ANC to the pregnant women, thus enhancing their uptake to such services.

5.1.3 influence of Perceived Quality of Health Care on Uptake of ANC Services among Pregnant Women during the Covid -19 Pandemic

The above study theme of examining the influence of perceived quality of health care on uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV; and these ranges from;

Study findings noted there is a significant relationship between the perceived quality of health care and uptake of ANC services among pregnant mothers ($r=589^{**}$). This implies that with perceived quality of health care, attitude of health workers, time spent or long queues, the structure of the health facility, existence of women departments at the health facilities and payment for health care provided in health facilities influence pregnant women uptake of ANC services in health facility. This concurs with Basudde (2018) who asserted that because high-quality ANC care has a big impact on pregnant women uptake to ANC health services. When pregnant women are treated by top doctors and get care at great facilities, they benefit from; better health outcomes such as faster recovery times, lower risk of ANC complications and mortality, and improved long- term health. More so, Sinha., Bennett & Taylor-Robinson (2020) argued out that existence of clinic-based interventions, including introduction or scale up of female reproductive health services, individual or couples counseling, and provider education about pregnant women's reproductive needs has an influence of uptake of ANC services by pregnant women. This implies that the existence of such programs on effective implementation of pregnant women involvement in reproductive health initiatives has greatly addressed the barriers and challenges to pregnant women's involvement in ANC health initiatives.

From the regression analysis it was predicted that 31.3% variation in uptake of ANC services among pregnant mothers is explained by changes in the perceived quality of health care. This implies that any changes in perceived quality health care would lead to 31.3% chance change in

uptake of ANC services among pregnant mothers in this area. This finding is in line with Riley., Sully., Ahmed and Biddlecom (2020) who argued that several factors influence Ugandan pregnant women ANC seeking behavior which included: perceived high cost of ANC services (conducting a delivery and treatment), and perceived inadequacy of services provided by the formal health system. Kirmani and Saleem (2021) also noted that payment for health care provided in health facilities especially for the poor is one of the hindering factors that prevent pregnant women from seeking ANC attention. This implies that health workers who claim to earn minor salaries and intend to survive on these payments, which in turn discourage pregnant women to seek ANC health services from such facilities.

The study noted that attitude of health workers contribute to pregnant women uptake of ANC services in health facility. This concurs with Worldometer (2020) who argued that pregnant women access to ANC services is limited by the incidences of poor patient care and willful neglect of patients' basic care on the attitudes of pregnant women as patients or patients' relatives as well as lack of management support. On the other hand, Nakkazi (2021) argued that the poor attitudes of health professionals, resulting in poor patient care, could severely limit the ability of the health system to provide quality ANC services and improve outcomes for pregnant women. In most hospital facility lack regular assess of nurses' attitudes to ensure that pregnant women uptake to ANC is not compromised. This implies that pregnant women uptake to antenatal health care services is commonly influenced by the health workers' attitudes. Some of the health workers tend to be abusive and use rude language, and this scares away pregnant women from accessing ANC services. Therefore, it is important for nurses to have positive attitudes towards patient care if good quality care is to be provided.

The study showed that other women departments at the health facilities influence pregnant women uptake to ANC health seeking behavior. This concurs with Tweheyo., Konde-Lule., Tumwesigye

and Sekandi (2020) who argued that everyone deserve his/her confidential information and privacy be kept with care. The existence of private department for pregnant women at the health facilitates automatically enhance pregnant women privacy which enhances their uptake to seek for ANC services. Most pregnant women choose health facility where there is privacy and the confidential information kept very safe. This implies that pregnant women prefer to have their privacy and confidential information preserved. Presence of private women departments at the health facility to provide ANC services enhance pregnant women privacy and confidentiality, and this eventually enhances their uptake to ANC services. The existence of women department in the facility leads to easy access of the ANC services, which eventually motivate them to uptake for such services.

Additionally, it was noted that the time spent or long queues experienced during seeking for ANC health service influence our uptake. This concurs with Riley., Sully., Ahmed and Biddlecom (2020) who argued that pregnant women have to spend a lot of their time in infamously long hospital queues. Some pregnant women take long to access the health facility due to the higher average wait time and inability to find the appropriate physician in the specified period of time. In other words, slow moving queues cause not only pregnant women frustration but may also influence their uptake to ANC services as ascertained by Muhwezi (2021). This implies that due to the increasing number of pregnant women accessing ANC services at the health facility, a queuing challenge occurs and this led to the number of dissatisfied patients (pregnant women) to be higher than the number of satisfied pregnant women, and this happens due to the perceived waiting experience which eventually influences their uptake to ANC services.

The study noted that payment for health care provided in health facilities influence pregnant women from seeking ANC attention. This concurs with Townsend., Chmielewska and Barratt (2021) who argued that the amount of payment inform of consultation fees where applicable, medicine and sample testing charges influence pregnant women uptake to the ANC services in the

facility. In this health facility being a government health unit, most of the ANC services are freely provided apart from those services they don't have, and this have encouraged more pregnant women to seek ANC and similar health services from the health facility as ascertained by Nakkazi (2021). This implies that the payment for the ANC health services in the facility influence pregnant women uptake for antenatal health services. When the pay is low, more pregnant women shall seek the available services. Those ANC services that require higher payments, few women decide to go for such existing services. In other words, most pregnant women decide to seek ANC services from the health facility being government and most of ANC services provided are either cheap or provided for free.

The study further showed that the structure of the health facility influences pregnant women uptake of ANC services. This concurs with Plotkin., McKee and Stuckler (2022) who argued that the health facility structure in terms of well-furnished and ventilated facilities enhance pregnant women trust to the ANC services provided at the facility. There is increasing number of pregnant women accessing ANC services in the facility with adequate furnished and stocked health facilities, where they can easily get free medicines and other medical sundries. Besides, Muhwezi (2021) argued that the health facility structures greatly motivate pregnancy women uptake of antenatal health care services. This implies that the health facility with private wing for pregnant women with specialized health professionals tends to provide adequate health services to pregnant women with limited disturbances like long queues, and eventually this facilitates the uptake of ANC services by pregnant women.

The study showed that the presence of medical sundries influence pregnant women uptake of ANC services from health facility. This concurs with Tumwesigye., Ambi., Sekaran and Krishnan (2021) who argued that pregnant women prefer to attend their ANC services to the health facility where medical sundries are adequate for their safety and hygienic practices. Though, with limited

supply of medical sundries in the facility courtesy of limited financial budget allocation, this have discouraged several pregnant women from seeking ANC services in such facility. This implies that the availability of the required medical sundries like Mother Kits, gloves, mention them motivates the pregnant women uptake for ANC services in the health facility. Pregnant women tend to prefer the alternative health facilities like private health centers with increasing complaints of inadequate medical sundries in the government facility.

The study showed that the distance to the health facility has an influence on our uptake of ANC services. This concurs with Tweheyo., Konde-Lule., Tumwesigye & Sekandi (2020) who noted that if the necessary distance to travel exceeds an acceptable threshold, patients may not use healthcare and potentially encounter adverse ANC health effects. More so, Poote & McKenzie-McHarg (2019) who argued that equitable access to healthcare is of significant importance for governments and health professionals and a basic concern in healthcare planning and allocation, in other words, access is a multidimensional concept encompassing spatial factors such as distances to service points, and non-spatial factors such as waiting times which influence each other, and pregnant women uptake of ANC services. This implies that the distance to the health facility limits pregnant women access to ANC services. In most occasions, the distance to the facility is more than 5Km which is contrary to the recommended distance under the Ministry of Health to be less than 5Km. Pregnant women have to walk long distance for ANC services, and sometimes reach late when the ANC department have already closed and have to wait for another day to access the services. Also, increasing distances to healthcare facility as well as socio-demographic and health related factors influence health service utilization.

The study showed that availability of multiple services provided at a single point of contact influence pregnant women uptake of ANC services. This concurs with Tumwesigye., Ambi., Sekaran and Krishnan (2021) who asserted that the provision of several health services at a single

point always encourage pregnant women to easily come for such available services at single point of contact. This eases accessibility to such ANC services as well as affordability in-terms of transport costs involved. This implies that the existence of multiple services provided by the health facility has an influence of the pregnant women uptake for ANC services. They have tendencies of going at a single point of contact to have access to several health care services.

The study showed that the perceived high cost of ANC services influences pregnant women uptake of ANC services. This concurs with Sinha., Bennett and Taylor-Robinson (2020) who argued that cheap costs of ANC services provided at the health facility have encouraged more pregnant women to come for the available ANC services. Most pregnant women prefer cheap and affordable antenatal medical care services, and being available at the facility, the uptake of these services have gradually continue to rise. It is in record that most HC VI being a government health facility, it is a duty of the government to pay salaries and allowances for the health works as well as procuring medicines and medical sundries; this implies that the ANC services provided are supposed to be totally free or provided at affordable costs as ascertained by Muhwezi (2021). This implies that most pregnant women prefer to access ANC services from the health facility (government) because of being cheap and affordable. It is commonly provided for free. Pregnant women in most cases are request to afford the medical bills especially for those medicines that are not available at the facility which eventually enhance the uptake for ANC services at the health facility.

Lastly, the study showed that lack of healthcare staff influences pregnant women uptake of ANC services. This concurs with Tumwesigye., Ambi., Sekaran and Krishnan (2021) who asserted that limited number of healthcare professionals in the health facility to handle the rising number of pregnant women influence their uptake for ANC services. More so, McKee and Stuckler (2020) noted that pregnant women have experienced long queues at the facility due to few health

professionals to attend to them at the same time. Some of the available health workers are incompetent and not skilled enough to handle the pregnant women with pregnancy complications. In return, this scenarios have been observed in the facility which have undermined the pregnancy women uptake of ANC services from the facility. This implies that the health facility experiences a challenge of inadequate health staff. There are limited health professionals especially to handle ANC services in the health facility. Most of the available health workers tend to be nurses and clinical officers that are not attend too those pregnant women with pregnancy complications, thus limiting their uptake for ANC services from the health facility.

5.2 Conclusions

From the findings and discussion above in chapter four, the following conclusions were drawn.

The study examined the effect of the Covid -19 pandemic and underlying factors affecting uptake of ANC services by pregnant women at Bukedea Health Center IV, Bukedea District. The study adopted analytical study design to carry out the research. The study looked at how Covid-19 pandemic, government initiatives and perceived quality of health care influenced the uptake of ANC services among pregnant women during the Covid -19 pandemic in Bukedea Health Centre IV.

In research objective one; it was concluded that there was a significant relationship between Covid-19 pandemic and uptake of ANC services among pregnant women in Bukedea Health Centre IV ($r=0.686$, $p=0.000$) with a regression R^2 of .471, and this was the most factors. This implies that during Covid-19 pandemic, fear of contracting Covid-19; travel restrictions; the increased transport prices; and closure of ANC clinic limited pregnant women uptake to ANC services to the health facility.

In research objective 2; it was concluded that there was a significant relationship between government initiatives between uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV ($r=.342$, $p=0.002$) with a regression R^2 of .117. This implies that any improvement in government initiatives would lead to improvement in uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV. In other words, the existing institutional and legal framework, political will, government budget allocation, donor funding and stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers.

In research objective three, it was revealed that there is a negative significant relationship between perceived quality of health care and uptake of ANC services among pregnant mothers during the Covid -19 pandemic in Bukedea Health Centre IV ($r=0.589$, $p=0.000$) and regression R^2 of 346. This implies that in perceived quality of health care, attitude of health workers, time spent or long queues, the structure of the health facility, existence of women departments at the health facilities and payment for health care provided in health facilities influence pregnant women uptake of ANC services in health facility.

5.3 Recommendations

Following the analysis of the study, the researcher came up with the following recommendations as follows.

5.3.1 Covid -19 Pandemic and uptake of ANC services among pregnant mothers during the Covid -19 pandemic

The study recommended that the government of Uganda to allow ANC outreach services so as to reach to the pregnant women who can not access health facility during Covid-1p pandemic. Such ANC should be extended to parish/village level.

More funding by the government and other development partners should focus on enhance outreach ANC services.

The study recommended that the government and Ministry of Health and other development partners should put more focus on sensitizing community about the Covid -19 pandemic and available control measures to minimize its spread.

The study recommended that the government to procure more ambulances and provide ambulance services so as to easily pick pregnant women for ANC services and drop them back to their families since ambulances were among official cars allowed to move during the pandemic. Thus, free toll free services should be put in place for pregnant women with complications to call and easily reach to the health professional for immediate help or rescue.

5.3.2 Government Initiatives and Uptake of ANC Services among Pregnant Mothers during the Covid -19 Pandemic

The study recommended that the government and Ministry of Health and other development partners should put more focus on sensitizing community at antenatal care services.

The study recommended that the government need to recruit more health workers to effectively extend ANC during this pandemic period.

It is also recommended that the health professionals should be supported to conduct or provide home-based health care during the Covid-19 pandemic so as to minimize the maternal mortality and other related pregnancy complications.

The study recommended that more budget allocation should be directed to ANC services so as to cover the rising number of pregnant women. More medicines and other medical sundries like

Mother Kits should be procured and distributed to pregnant women so as to enhance their uptake for ANC services.

The study recommended that there is need for publicity and institutional or legal framework to regulate the provision and accessibility of ANC services among pregnant women. Pregnant women should be encouraged through mass media to seek for ANC services. They should be equipped with relevant knowledge on the importance of seeking for ANC services and this would enhance their uptake.

5.3.3 Perceived Quality of Health Care and Uptake of ANC Services among Pregnant Women during the Covid -19 Pandemic

The study recommended that the government need to provide free mosquito nets and mother-kits to pregnant mothers as part of home based health care.

The study recommended that government health facility should have departments to handle ANC services among pregnant women and this would help in reducing the time spent or long queues waiting for ANC services. The improvement in ANC service delivery would enhance the uptake of pregnant women for the services.

The study recommended that there is need for public training and sensitizations through workshops and seminars so as to change the attitudes of the health professionals as well as public. The behaviors of health workers towards pregnant women can be changed through training sessions.

5.4 Limitations of the Study

The researcher was faced with a number of problems among which are:-

Testing: The use of research assistants can bring about inconsistency in the administration and conducting interviews in terms of time of administration, understanding of the items in the interview schedule and explanations given to the respondents. To minimize this threat, the

research assistants were oriented and briefed on the procedures to be followed/done in data collection.

Limited funds and time constraints: This limit the intensity of the spread or area of coverage of the study. This was solved by the researcher through borrowing funds from friends and family members. In addition to the above, the researcher made sure; she followed the scheduled work plan.

Attrition: Not all selected participants were willing to participate in this study and this due to circumstances on the part of the participants such as supervising departments, travels, sickness, hospitalization and refusal/withdrawal to participate. In anticipation to this, the researcher reserved more respondents by exceeding the minimum sample size.

5.5 Areas of Further Research

The researcher carried this study in order to examine the “Effect of Covid-19 and Underlying Factors Affecting Uptake of Antenatal Care Services by Pregnant Mothers in Bukedea Health Center IV, Bukedea District”; but the study was not exhaustive owing to constraints in terms of scope, time and finance. Further research is therefore needed in areas such as:-

1. The Travel Restrictions and Uptake to ANC Services by Pregnant Women to the Health Facility in Uganda.
2. The Closure of ANC Clinic and Uptake to ANC Services by Pregnant Women to the Health Facility in Uganda.
3. The Influence of Existing Institutional and Legal Framework on Uptake to ANC Services by Pregnant Women to the Health Facility in Uganda.

In conclusion, more research should be done about the effect of Covid-19 and factors affecting uptake of antenatal care services by pregnant mothers in Uganda so as to compare with results got from in Bukedea Health Center IV, Bukedea District so as to draw a ground for recommendations. Conversely, there is much more need for research to find out the core causes of the dilapidating uptake of antenatal care services by pregnant mothers in Uganda.

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APPENDICES

Appendix I: Informed Consent Form (Questionnaires)

Principal investigator: NAMUTEBI ZUENA ASHLIEGH (RS21MO7/005)

Institution: Uganda Christian University

Introduction: I, Namutebi Zuena Ashliegh (RS21MO7/005) is doing research aimed at fulfilling the requirements for the award of a Degree of Masters in Public Health and Leadership.

Purpose of Study: To explore the effect of covid-19 and underlying factors affecting uptake of antenatal care services by pregnant mothers in Bukedea Health Center IV, Bukedea District.

Benefits: There will be no direct benefit to you for your participation in this study. However, we hope that the information obtained from this study may help Bukedea HC IV transcend to the proper assessing of the factors affecting uptake of antenatal care services by pregnant mothers.

Confidentiality: For the purposes of this research study, your comments will not be anonymous. Every effort will be made by the researcher to preserve your confidentiality including the following:

Assigning code names/numbers for participants that will be used on all research notes and documents

Keeping notes, interview transcriptions, and any other identifying participant information in a locked file cabinet in the personal possession of the researcher.

Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

Contact Information or Questions: If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the UCU Research Board on [Tel:+256\(0\)772 405357](tel:+256(0)772405357), Email: pwaiswa@musph.ac.ug and the secretary on [Tel:+256\(0\)775737627](tel:+256(0)775737627), Email: oahimbisibwe@ucu.ac.ug

Voluntary Participation: Your participation in this study is voluntary. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign a consent form. After signing the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed.

Statement of Consent

I grant consent that as a respondent selected on account of my knowledge, experience and willingness to communicate my opinions do accept that the information I share during in the questionnaire may be used by Namutebi Zuena Ashliegh for research purposes. The information I share can be freely used by the researcher provided that my privacy will be protected. I understand that by signing this form, I do not waive off my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate.

Participant’s Name : -----

Participant's Signature : -----

Researcher's Name: **NAMUTEBI ZUENA ASHLIEGH**

Researcher's Signature : -----

Date : -----

Appendix II: Questionnaire

Pregnant Women's Information

Introduction

Dear respondent,

My name is Namutebi Zuena Ashliegh (RS21MO7/005), a Masters student of Uganda Christian University carrying out a study on “Effect of Covid-19 and Underlying Factors Affecting Uptake of Antenatal Care Services by Pregnant Mothers in Bukedea Health Center IV, Bukedea District”. This questionnaire aims to get participant views in order to enhance the quality of health services in the Ditriect. Your views and opinions are central to all the interventions and decisions that will be made with reference of findings from this research.

The information provided for this research will be purely for academic purposes and will be treated with utmost confidentiality.

Thank you for the time to complete this questionnaire.

Date:

I request you to read the instruction against each section/question carefully and answer it accordingly.

Instruction:

Kindly tick or precisely fill in where applicable or respond according to the instruction given.

Section A

1- Age

- 15-19 years
- 20 – 24years
- 25 – 29 years
- 30 – 35years
- 36years – Above

2. Sex (Gender)

- Female

3. What is the highest qualification that you have attained?

- Bachelor’s Degree
- Diploma
- Others specify

4. What is your religion?

- Catholic
- Protestant
- Seventh Day Adventist
- Born Again
- Moslem
- Others

General Instruction on Sections B, C & D

To what extent do you agree with the following statements? (Read a statement and let respondent scores it according to her opinion; **using a 5 points Likert scale; 1=strongly agree, 2=agree, 3=neither, 4=disagree and 5=strongly disagree**). Using the scale below, please tick the score you think is most appropriate to the issues in the given item(s)

Scale:

Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
5	4	3	2	1

Section B:

		5	4	3	2	1
	Effect of Covid-19 on uptake of ANC services among pregnant mothers during the Covid-19 pandemic					
1.	Fear of contracting Covid-19 infections influenced my decisions to access ANC in such hospital environment.					
2.	Travel restrictions limited pregnant women uptake to ANC services in this health facility					
3.	The increased transport prices has an influence on pregnant women access to antenatal health care services					
4.	Closure of ANC clinic limited our access and uptake of ANC services					
5.	Banning of group gatherings limited pregnant women access to antenatal health information					
6.	Lack of antenatal education influenced pregnant women access to antenatal health care services					
7.	Lockdown orders restricting movement influenced pregnant women access to antenatal health care services					
8.	Due to stockouts of medicine and food supplements prior to lockdown influence the uptake of pregnant women receiving ANC services during lockdown					
9.	In our community, pregnant women were advised not to visits sites of ANC check-ups for several months during Covid-19					
10.	Banning of group gatherings limited pregnant women access to antenatal health information					
11.	Any other (specify)					

Section C

		5	4	3	2	1
	Effect of government initiatives on uptake of ANC services among pregnant mothers during the Covid-19 pandemic					
1.	The existing institutional and legal framework has an influence of the uptake of ANC services among pregnant mothers					
2.	Political will has an influence on the availability and uptake of ANC services among pregnant mothers					
3.	Government budget allocation has an influence on uptake of ANC services among pregnant mothers					
4.	Donor funding has an influence on uptake of ANC services among pregnant mothers					
5.	Stakeholder collaboration has an influence on uptake of ANC services among pregnant mothers					
6.	The local stakeholders (district) has an influence uptake of ANC services among pregnant mothers					
7.	Integration of ANC with other health services influence our uptake for ANC services					
8.	Health promotion has empowered us with essential information for meaningful involvement in antenatal care services.					
9.	Presence of VHT as encouraged us to access and uptake of ANC services					
10.	We access ANC information through community programs, publicity and use of mass media platforms					
11.	Any other (specify)					

Section D

	D, Items	5	4	3	2	1
	Effect of perceived quality of health care on uptake of ANC services among pregnant women during the Covid-19 pandemic					
1.	Attitude of health workers contribute to pregnant women uptake of ANC services in health facility					
2.	Other women departments at the health facilities influence our uptake to ANC health seeking behaviour.					
3.	Time spent or long queues experienced during seeking for ANC health service influence our uptake					
4.	Payment for health care provided in health facilities influence us from seeking ANC attention					
5.	The structure of the health facility influence our uptake of ANC services					
6.	The presence of medical sundries influence our uptake of AND services from health facility					
7.	Distance to the health facility has an influence on our uptake of ANC services.					
8.	Availability of multiple services provided at a single point of contact influence our uptake of ANC services					
9.	Perceived high cost of ANC services influence our uptake of ANC services					
10.	Lack of healthcare staff influence our uptake of ANC services					
11.	Any other (specify)					

END

Thank you for your participation and time.

Appendix III: Interview Guide

Interview Guide for District Health Officers and Health Practitioners

Guiding Questions

1. In your view, what are ANC services provided to pregnant mothers?

2. In your view, what is the effect of Covid-19 on uptake of ANC services among pregnant mothers during the Covid-19 pandemic?

3. What is the effect of government initiatives on uptake of ANC services among pregnant mothers during the Covid-19 pandemic?

4. What is the effect of perceived quality of health care on uptake of ANC services among pregnant women during the COVID-19 pandemic?

5. How best do you want uptake of ANC services among pregnant women to be promoted?

6. How best do you want effect of Covid-19 on uptake of ANC services among pregnant mothers to be minimized?

Thank you for your Co-operation

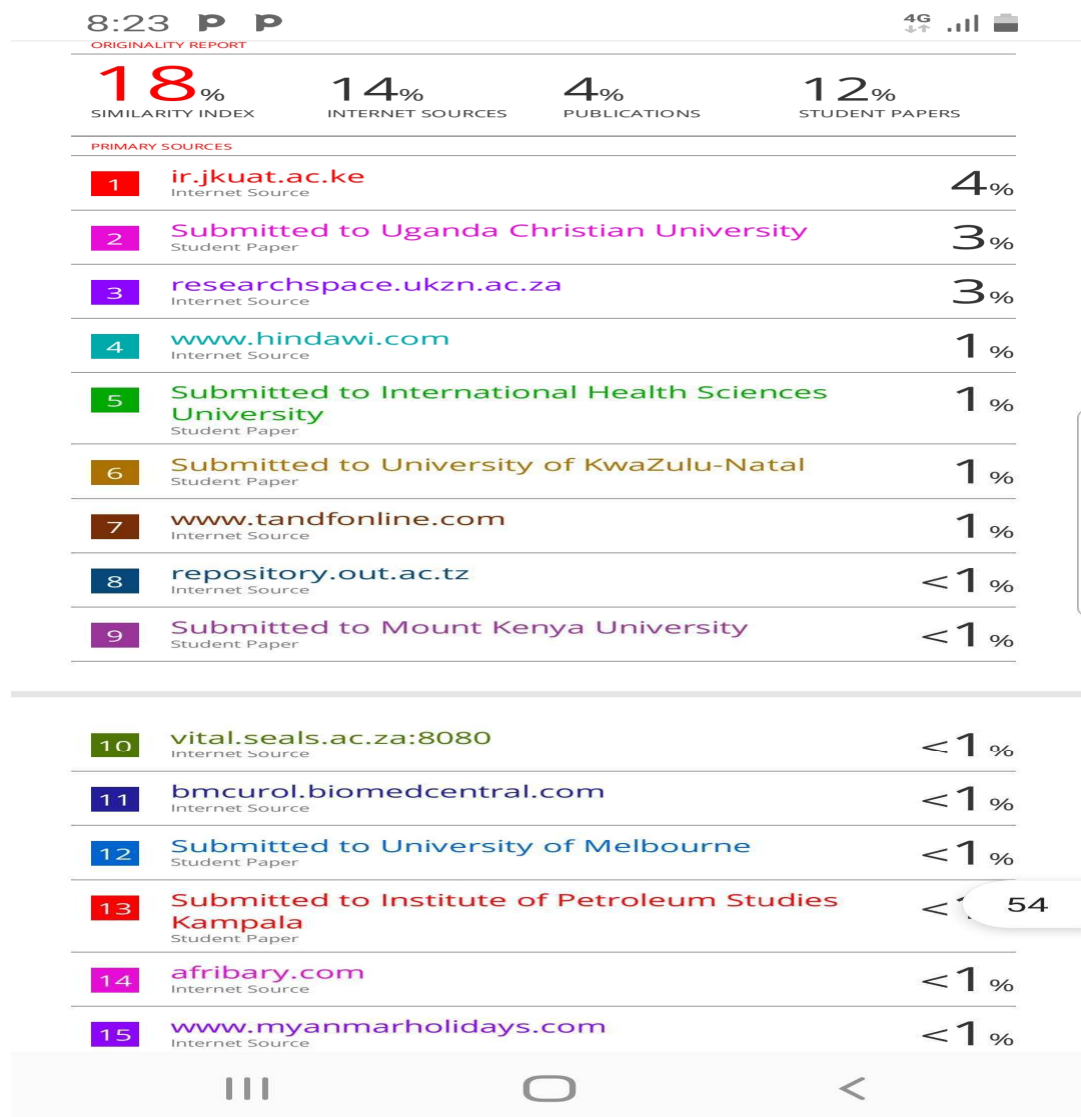
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DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 2nd/April/2025

Name of Candidate: Namutebi Zuena Ashliegh Reg. No: RS21M07/005

Title of Dissertation: Effects of Covid-19 on Uptake of Antenatal Care Services by Pregnant mothers In Bukedea Health Center IV, Bukedea District

SN	COMMENTS BY VIVA VOCE PANNEL	ACTION TAKEN	INDICATOR
1	Most of the recommendations have been taken by events since COVID already left us. Recommendations have to be changed in terms of the tenses	Recommendations realigned and changed to past tense	Page 99-101
2	What was the purpose of having mixed method; you should always start with	Content reorganized starting with qualitative in Chapter one and Methodology	Page 8, 30, 42,

	qualitative and get hypothesis		
3	The way you presented results...you should have presented the odds instead of the standard error which is not easily understood. Present them as odds and also include the confidence levels	All mentioned is in different tables for result findings per objectives in chapter four	Page 55, 63,64, 72
4	How did you decide who you were going to interview for the qualitative; the student used purposive sampling	In methodology under sampling procedure; Health practitioners and district health stakeholders were purposively selected for this study. These officials were interviewed from their place of work, and they were selected and used in order to obtain reliable and valid information. Such sampling technique was used because it was quick and helped the researcher to collect the first-hand information.	Page 34
5	Your general objective is as same as your first objective. The specific should help you study the overall objective. Examining is the same as assess. You can use the words like determine the influence.....	The specific for General objective changed from examine to determine the influence....	Page 7



Namutebi Zuena Ashliegh

Candidate's Name

Signature

Jacqueline Kobusingye.....

Supervisor's Name



Signature